Fifteenth Distance Library Services Conference Proceedings

Memphis, Tennessee
April 18-20, 2012
PREFACE

Welcome to the Fifteenth Distance Library Services Conference Proceedings. The manuscripts in this volume were evaluated and selected for inclusion by Conference’s twenty-nine member Program Advisory Board using a juried abstracts process. These papers represent the many types of initiatives, programs, and new directions being presented to our profession by the librarians currently engaged in delivering library resources and services to distance and online library users.

Timothy Peters
Jennifer Rundels

Co-Editors
ACKNOWLEDGEMENTS

The Fifteenth Distance Library Services Conference is the result of significant amounts of time and effort on the part of so many individuals. A special thank you goes to the presenters and authors who have shared of their experiences and expertise for the benefit of their colleagues and their profession.

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 Thad Dickinson 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 the submitted proposals and selecting the presentations, poster sessions, and workshop that became part of the Fifteenth Distance 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. A special thanks is given to Matt Brooks, the Web Developer/Programmer for the CMU Libraries, who created the conference web site and made all of the online interactivity possible.

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, Rebecca Hill, Julie LaDell-Thomas, Timothy Peters, Jennifer Rundels, Joyce Salisbury, and Cindy Worley.
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Listen to What They Have to Say! Assessing Distance Learners’ Satisfaction with Library Services Using a Transactional Survey

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University of North Carolina at Pembroke

This paper examines the evolution and findings of an on-going longitudinal study that is assessing the satisfaction of distance education students with library reference services through the use of a transaction-level survey. The survey’s purpose is two-fold: first, it is used to garner valuable input from these students; and second, it also serves as a communication device that encourages students to seek further assistance. Survey requests are emailed to distance education students following individual reference transactions or clustered transactions. After submitting the survey, students are immediately taken to a linking page encouraging them to contact the library whenever they need research assistance. Findings thus far have been quite positive overall; however, the negative comments have been just as telling, and have allowed us to make some real changes to how we provide distance education-related reference services.

Background

The University of North Carolina at Pembroke (UNCP) is a master’s degree-granting institution in rural Robeson County. Although its student body comes from across the United States, as well as from many countries around the world, the majority of the students live in the surrounding five counties. As a dedicated enrollment-growth institution within the North Carolina state university system, UNCP recently saw a doubling of enrollment from a little more than 3,000 students in Fall 2003 to almost 7,000 students—6,166 undergraduate students and 778 graduate students—in Fall 2010. The university offers 41 undergraduate programs, 17 graduate programs, and one certificate program.

Along with the overall enrollment growth of the university, UNCP has also seen a steady rise in the number of enrollments at off-campus instructional sites and in online courses. With the increased off-campus and online enrollments, one of the problems faced by Mary Livermore Library has been in the identification of distance education students. UNCP’s students are highly transient, meaning they take necessary courses no matter where the courses are being offered and no matter the modality (e.g., face-to-face, hybrid, or online); this is especially true of our graduate students. A student may be taking on-campus courses, off-campus courses, as well as online courses simultaneously during any given semester.

There are no designations in the university’s Banner system to classify students as either on-campus, off-campus, or online. In fact, the last official tracking of off-campus enrollments was in 2006; however, those numbers provide a glimpse of the breadth of our distance education programs. During the fall 2006 semester, there were 57,328 semester credit hour enrollments in undergraduate on-campus courses, and there were 5,592 semester credit hour enrollments either at off-campus instructional sites or in online courses, which represents almost 10% of the overall undergraduate enrollments. During the same semester, there were 2,110 semester hour credit enrollments in graduate on-campus courses, and there were 1,349 semester credit hour enrollments either at off-campus instructional sites or in online graduate courses, which represents almost 64% of the overall graduate enrollments.

Mary Livermore Library has been outspoken in its dedication to students no matter where or how they complete their coursework. In May 2003, they created the position of Outreach/Distance Education Librarian to provide dedicated services in response to the anticipated growth of distance education programs given the university’s enrollment growth status. The library’s administration was adamant from the start that services for off-campus and online students should attempt to mirror the breadth and quality of services for on-campus students.
Dedicated services include instructional services, where the Outreach/Distance Education Librarian travels to various off-campus instructional sites to provide information literacy instruction sessions upon the request of individual instructors. Instructional services also include the creation of course-specific robust interactive online instructional modules that are placed into the Blackboard Learning Management System (LMS) site for any given course. Dedicated services also include one-to-one reference transactions, which occur via email, instant messaging (IM), phone, and web form. Requests are received by the reference desk, as well as by the Outreach/Distance Education Librarian, who monitors all DE-related transactions and follows up as necessary. This librarian also expedites other library services, such as rapid document delivery, where print items, such as microforms, print journal articles, entries and chapters from reference books, etc., are scanned and emailed directly to distance education students. We also provide in-depth face-to-face research consultations with distance education students and will meet them at night and on weekends.

With the exception of a slowing in fiscal years 2008-2010 (see Figure 1), there has been a fairly steady rise in the number of distance education-related reference transactions; although these numbers are probably quite conservative given the fact that the library works with many students who are not identified, or do not identify themselves, as distance education students.

![Figure 1. Total distance education-related transactions by fiscal (academic) year.](image)

The university and the library continue to use different survey instruments to assess student satisfaction of library services on at least an annual basis. Most notably, the library deploys a 20-plus-question paper-based survey every year during National Library Week. While the returns for this particular survey are very high, it does not provide a real venue for input for distance education students, who spend much of their time away from campus. It also happens toward the end of the semester and the academic year; when there is very little time to immediately act on student input.

In 2006, the library’s distance education services personnel deployed a 15-question survey and sent the link to instructors teaching at off-campus sites and asked them to pass it along to their students. The returns were extremely low, and no valuable data was taken away from this initiative, but it was from this experience that a new survey took its formative shape. The goal was to create something that was immediately beneficial to both the student and the library: Something that could be sent and hopefully received when there was still time left to address any reported issues. The 15-question survey was edited down to five basic questions with simple check boxes and one open-ended text field (see Appendix B).
1. The first question was demographic in nature, in that we wanted to know where these students were taking their coursework, so it listed the various major program sites. There were also designations for “online” and “other,” which covered instructional sites that were used only sporadically by various programs, such as Montgomery Community College, South Piedmont Community College, and other visiting campuses.

2. The second question asked if distance education students were satisfied with the reference services that they had recently received (i.e., they simply needed to select one of the three answer choices: “yes,” “somewhat,” or “not at all”).

3. The third question asked if they still required assistance (i.e., simply “yes” or “no”). The purpose of this question was to gauge the effectiveness of our services (i.e., if they do not need further assistance, then it is “likely” that our reference services were effective—of course they could have figured it out on their own or received assistance from someone else, such as their course instructor).

4. The fourth question asked if they received the guide to services for off-campus students. This was considered important in the first few years of the survey because most distance-education enrollments were at our off-campus instructional sites. So this paper-based guide—also available online—was made available at all program sites by both UNCP site coordinators and also by individual instructors. This question was changed in 2008 to one that asked the students to select their academic level (e.g., freshman, sophomore). This is because we wanted to know more about who we were helping; although we already had an idea.

5. The last question was left open-ended and asked students how we could improve services for distance education students. While we sought their specific input regarding library services, this text box also allows them to vent about anything, within reason.

**Review of the Literature**

There is no shortage of literature that discusses the history and importance of providing students with a voice through the use of various survey instruments. However, a review of the literature failed to find any similar survey models for assuring quality at the transaction level. Only a few survey models are mentioned in this paper because of the basic commonality of these surveys, and they are mostly similar in design and purpose. The closest model was one created by James T. Nichols (2006) at SUNY Oswego, where he developed a monthly “checkup” survey that was sent to a select group of distance education students each semester. This survey sought input on a wider breadth of library services than our model, and the range of questions would definitely have provided them with valuable information, but it would not necessarily have provided that information in a timely manner at the actual point of need, where library personnel could help or encourage individual students. A number of surveys were used to effect changes in library services, but as with most surveys, they were sent out only once a semester at best. Stephen Dew’s (2001) 11-question survey looked at various demographic areas, library use patterns, as well as student satisfaction; however, this survey was being mailed only once each semester to the University of Iowa’s distance education students. Hensley and Miller (2010) also mailed their 17-question survey to select University of Illinois at Urbana-Champaign students, and they found that most distance education students were not aware of the range of library services that were available. McLean and Dew (2004) discovered the need to place library surveys fully online in order to increase response rates. Their study compared two library satisfaction surveys: one at the University of Iowa and one at the University of the West Indies.

**Methodology**

This transaction-level survey was initially created in late 2006. It was submitted to UNCP’s Institutional Review Board (IRB) and was exempted from full IRB review, because it would preserve respondent anonymity and use the data only in the aggregate to improve library services for distance education programs.
The survey was deployed in the spring 2007 semester. To keep data collection simple, we divided the fiscal (academic) year into two large semesters. All surveys received from the start of the spring semester would run up to June 30th (the end of the fiscal year) and be designated as being from the spring semester. All surveys received after July 1st through the end of the fall semester in December would be designated as being from the fall semester. In other words, the summer sessions were incorporated into the larger semesters. Returns during the summers were minimal at best anyway.

Distance education students are identified in a number of ways. On all library web forms, students can select the “distance education” designation and indicate the various campuses at which they take courses, or if they are taking courses online. Students will sometimes indicate that they are distance education students in their emails sent directly to library personnel. It also comes out during reference interviews, even those that take place on the phone. All UNCP librarians who provide reference services are encouraged to note the name and email address of any student that they have identified as being a distant education student. This is necessary in order to send them the survey.

Each individual interaction is counted as a reference transaction and we also denote the transaction type (e.g., account-related, simple reference, technical, or fully instructional). Surveys, on the other hand, are only sent to students who are interacting with the library for a distinct transaction. In other words, some students may have a “cluster” of transactions, where there are several communications back and forth between the library and the student; all stemming from an original question. As long as the transactions are clustered, we wait before sending the survey message to the student until the related communications calm down somewhat.

A survey message is sent directly to each student (see Appendix A). The message is stored as a Microsoft Outlook template and includes all necessary text and carbon-copy email addresses (i.e., to me and a colleague). The sent messages are counted and then deleted. As each student completes the survey (see Appendix B), they will then see a confirmation message that includes redundant contact information, encouragement to seek additional help if necessary, and a direct link to our help resources (see Appendix C).

As surveys are received, they are stored electronically in a Microsoft Outlook folder until they are both printed and entered electronically into a Microsoft Excel workbook. The student’s comments are copied and pasted into a Word document. A number of students will include their names and contact information. We use that information to follow-up with them immediately, but it is omitted from the comments document.

**Initial Findings**

This data is presented only in the broadest aggregate (see Table 1) and covers Spring 2007 through Spring 2011. Over the first four years, there were 1,930 survey requests sent to distance education students, and there were 390 responses which is an overall response rate of 20%. Of the responses, only 10 students indicated that they were “not at all” satisfied with our services. Another 27 students were “somewhat” satisfied with our services. There were 354 students who were satisfied with our services which is a satisfaction rate of almost 91%. A clear majority indicated that they did not require further assistance; although there were several students that indicated that they still needed help. The range of program sites varied from semester to semester, because UNCP’s programs go through various fluctuations and change location from time to time. Most students indicated that they were online students, which is in keeping with the growth of online courses and programs at UNCP. Also, as stated above, the focus changed from assessing receipt of the guide concerning available distance education library services, and we decided to look more closely at the students’ academic classification. It turned out to be mostly graduate students who were taking advantage of our services. There were also 194 comments provided. Many comments praised our services, as well as individual librarians. Some even suggested raises for distance education services personnel—which were not forthcoming in these austere times. However, some comments provided negative feedback concerning not being responded to by the library. Some expressed frustration with access to various electronic resources, and a few of the comments provided
suggestions for change, such as students not having to pay for return postage of books when no drop-off location is close by.

Table 1

UNCP Distance Education Programs Library Services Student Transaction Survey Selected Results

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<thead>
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<th>Semester</th>
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<th>S 08</th>
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<th>F 09</th>
<th>S 10</th>
<th>F 10</th>
<th>S 11</th>
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<tbody>
<tr>
<td>Surveys Sent</td>
<td>52</td>
<td>109</td>
<td>212</td>
<td>156</td>
<td>194</td>
<td>140</td>
<td>404</td>
<td>247</td>
<td>416</td>
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<tr>
<td>Surveys Received</td>
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<td>16</td>
<td>53</td>
<td>26</td>
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<td>36</td>
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<td>Yes</td>
<td>24</td>
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<tr>
<td>Somewhat</td>
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<td>2</td>
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<tr>
<td>No</td>
<td>25</td>
<td>5</td>
<td>0</td>
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</tbody>
</table>

**Discussion**

Based on the responses received, we have discovered that this is an effective tool for receiving a steady flow of student input. A 20% response rate is significant; although we would like to see that become higher in number. From this data, we know a little more about who our distance education students are. Typically, online graduate students represent the clear majority. Our reference transactions are for the most-part effective, because of the satisfaction rates and the indications of not needing additional assistance, at least for that particular research paper or project. Most of the students that indicated that they were not satisfied also provided useful comments. In each of those cases, they were “lost in the shuffle,” meaning their requests were missed and not responded to by library personnel despite our best intentions. Most of the students that provided negative responses also provided optional contact information and were helped. In response to initial negative feedback, another librarian was brought on board and now acts as the back-up distance education librarian, and he is involved in all aspects of the process and provides additional, and valuable, oversight. We still lose some students in our email in-boxes, but we usually find them more quickly now. Some of the negative comments concerning access to electronic resources allowed us to make our systems personnel aware of potential problems. There were also negative comments concerning distance education students not being able to have university identification cards, which are necessary to take advantage of accessing resources at other UNC system university libraries and at community colleges where we had cooperative agreements. This information was passed on to the university’s distance education administrative personnel.

**Conclusion**

This is our first pause, as it were, to look at this data in a wider sense, and while we find it valuable and quite useful, there is also the need for additional survey instruments. We are planning to triangulate this assessment by adding an end-of-semester survey that is sent to all distance education students that received transaction-level surveys during a given semester. This semester-level survey will have more questions, especially those designed to gather data concerning student use patterns. A third survey will target off-campus and online faculty members, in addition to distance education administrative personnel, in an attempt to see how we can better serve these groups and their students. In the end, we have found that whatever survey model is employed, as long as students are being listened to, the end result should be positive for all concerned. In our case, we believe that through our personalized services that we are actually helping to increase student retention.

It is important to note that this is an on-going longitudinal study, and that future iterations of this survey instrument, coupled with the two other future surveys mentioned above, will hopefully garner new and useful information. Our primary goal is to create a steady feedback loop with the distance education students, so that we can effect rapid change to services or resources as needed. The library’s assessment
committee has also found this data quite valuable for Southern Association of Colleges and Schools (SACS) purposes.

Of course, another important aspect of this survey is the hope that it helps distance educations students feel less disenfranchised from the library and the university. It has been our experience that distance education students feel like they are bothering the library if they ask more than one question in a given period of time (e.g., a day, a week, or even a semester). The survey’s confirmation page was designed to encourage these students to continue making contact with us as needed. At this time, we do not know if that is happening, so further study is needed to see if there is some connection between the survey instrument and increased use of reference services.
References


Appendix A

Dear Student,

We recently helped you with your research or off-campus access to research resources. Please help us to improve the quality of our services for UNCP distance education students by taking a brief survey.

Thank you,

Michael.

Michael Alewine
Outreach/Distance Education Librarian
Email: michael.alewine@uncp.edu
Phone: 910.522.5743

The survey consists of 5 questions. The survey will take about 1 minute to complete. The survey is submitted anonymously. The data collected from this survey will only be used for quality assurance and research purposes. Consent to participate in this research is voluntary and informed. If you agree to participate, please click the link below. Having consented, you may still withdraw at any time without any jeopardy to you. Please print this message if you wish to have a copy of it.

Click the link if you agree to participate in the survey: Survey URL Here
Appendix B

UNCP Distance Education Programs
Library Services Student Transaction Survey

UNCP is committed to providing our students with high quality library resources and services. Please take a moment to answer these questions in order to help us better meet your needs. Select the answer that best applies.

1. Where are you currently taking UNCP courses? (check all that apply)
   - Bladen CC
   - Cape Fear CC
   - Fayetteville TCC
   - Fort Bragg
   - Lee County Cohort
   - Online
   - Richmond CC
   - Robeson County CC
   - Sandhills CC
   - Scotland Memorial Hospital
   - Southeastern CC
   - Southeastern Regional Medical Center
   - Other
   - Not a Distance Education Student

2. You were recently helped by library staff; were you satisfied with the quality of service?
   - Yes
   - Somewhat
   - Not at all

3. Do you still require assistance?
   (if "yes" please use the "Still Need Help" link after you submit this form)
   - Yes
   - No

4. What is your academic level?
   - Freshman
   - Sophomore
   - Junior
   - Senior
   - Graduate Student

5. Please share your comments/suggestions on how we can improve library services for you.
Appendix C

Thank you for your feedback.

Your feedback for Distance Education Services has been submitted. Thank you.

Click this link if you Still Need Help? Thank You.

Michael C. Alewine
Outreach / Distance Education Librarian
910.522.5743
michael.alewine@uncp.edu.

Return to Mary Livermore Library
Life after TILT: Building an Interactive Information Literacy Tutorial

Stacy A. Anderson
Emily R. Mitchell
Ferris State University

Academic librarians at a mid-size university library developed an online information literacy tutorial that is easy to create, access, edit, and organize even for those with limited time and technological skills. Modular in structure, Project Information Literacy Online Tutorial (PILOT) includes interactive exercises, media, and self-testing as well as quizzes that can be graded. The original development of this tutorial was not without its difficulties, but has resulted in a product that is flexible, powerful, and freely available for adoption and/or adaptation by other libraries.

Introduction

Ferris State University serves approximately 14,000 students at a total of 20 campuses around Michigan. Enrollment online and at Ferris’ branch campuses has nearly doubled since 2001. By Fall 2010, about one fifth of all students were enrolled in fully online programs or programs at one of the branches. In response to this growth, the University formed a Distance Education Task Force in 2004. The task force’s recommendations, presented in 2006, included a suggestion that all first-time online students would complete a student readiness assessment. By 2008, this had evolved into an online student orientation that could be provided to every student regardless of location.

In 2009, the librarians at the Ferris Library for Information, Technology and Education (FLITE) were approached about creating an information literacy module for that orientation program. The librarians decided that to avoid duplication of effort, the orientation should simply direct students to the Project Information Literacy Online Tutorial (PILOT), their locally developed offshoot of the Texas Information Literacy Tutorial (TILT).

PILOT was already used by several teaching faculty to supplement library instruction efforts. Including it in the orientation program would expand its reach and provide branch-campus and online students with a basic grounding in information literacy and library resource: the perfect introduction to the library and information literacy for incoming students.

However, two things about PILOT were immediately apparent: Most of the content in PILOT was still as important as ever, but the presentation was dated and unappealing. The last systematic update to PILOT had been made in 2007, and few, if any, modifications had been made to PILOT since then. The instruction team decided that 10-year-old clip art in a hard-to-navigate tutorial was not the first impression of the library that they wanted to give Ferris’ growing population of branch-campus and online students. The wording of PILOT’s informative text could also stand to be updated.

A few members of the instruction team had edited incarnations of TILT before, both at Ferris and at other institutions. That process involved solid HTML skills, a great deal of hunting for files, reworking navigation links whenever pages were reordered, and fighting with outdated modes of using computer cookies; all on top of any desired content/phrasing edits. None of the librarians relished the idea of doing such an overhaul on PILOT, particularly since anything they did would only have to be refreshed again in another painful overhaul just a few years down the road. Additionally, with the librarians’ number of instruction sessions on the rise each year, it was unlikely that instruction librarians would ever have much time to work on keeping PILOT up-to-date or improving on it in the future.

At this point, two librarians with experience writing computer code stepped in and offered their services. They had been doing contract work through Marick Learning Services...
building a simple, no-frills learning management system for some school districts in Maryland. That code could be modified and expanded into a platform to run a new, easy-to-edit version of PILOT.

With a plan of action in place, the librarians began identifying standards, performance indicators, and outcomes from Information Literacy Competency Standards for Higher Education (ACRL, 2000) that aligned with PILOT’s content or were determined to be so important that any update should include them. They researched ideas, examples, and best practices for online tutorials. They also considered trends from the results of three to four years of pre- and post-testing conducted on a selected number of English 150 instruction sessions who had come to FLITE for library instruction sessions.

Literature Review

In the Project Information Literacy (PIL) report, Finding Context: What Today’s College Students Say About Conducting Research in the Digital Age, authors Head and Eisenberg (2009) write, “research seems to be far more difficult to conduct in the digital age than it did in previous times” (p. 2). They found that for many students beginning the research process is problematic. Students report not knowing what to look for, finding too much that is irrelevant to their topic, and general information overload along with many other difficulties. The PIL study also found that students use research techniques that are self-taught. Other researchers report that students are not savvy when it comes to evaluating the information they do find (McClure & Clink, 2009).

Online tutorials are effective teaching tools for information literacy. Few studies have been conducted comparing face-to-face information literacy instruction and online tutorials, but the results show online tutorials in a favorable light (Burkhardt, Kinnie, & Cournoyer, 2008). Some students may still have a preference for face-to-face instruction, but most like online tutorials and think they would be useful (Biddix, Chung, & Park, 2011). Students like the flexibility of going through online tutorials when they have time, when they have a need for the information, and as frequently as necessary to understand the concepts. Generic tutorials must still be applicable for students in multiple disciplines in order to be effective (Biddix, Chung, & Park, 2011; Su & Kuo, 2010). TILT, one of the largest, well-known online information literacy tutorials, was more effective in teaching transferable skills such as understanding the elements of a citation than in teaching inert knowledge, or non-transferred skills (Orme, 2004).

Information literacy tutorials are effective tools to assist with increased instruction demands at libraries with staffing shortages or freezes. Librarians in medium-size college and university libraries tend to support on average 30 to 40 faculty members; even in larger universities, librarians support faculty at a 22 to 1 ratio (Applegate, 2007). Faculty demand for library instruction is growing at many universities, and online tutorials are seen as one way to help meet that demand with limited resources (Dewald, 1999). However, many librarians have limited technological skills. There is a perception by library administrators that the lack of information technology qualifications of librarians is significant (Riley-Huff & Rholes, 2011). Though libraries are increasingly hiring new librarians with digital technology skills, there are difficulties filling those positions and sometimes they are filled by non-librarians. Retention of librarians in IT roles is also problematic and libraries continue to rely on librarians whose digital knowledge is largely self-taught (Riley-Huff & Rholes, 2011). At the same time, the economic downturn has led to decreased levels of FTE librarian staffing at a significant number of academic libraries since 2000. Hiring freezes, salary cuts, and a reduction of work hours are the preferred method of keeping staffing levels low (Nicholas, Rowlands, Jubb, & Jamali, 2010). Additionally, libraries have seen a redistribution of responsibilities to support staff and a redefinition of the role of the librarian away from legacy services (Stewart, 2010).

As useful and effective as online tutorials can be, students often fail to use them because they do not know the tutorials exist (Blummer, 2007; Bowles-Terry, Hensley, & Hinchliffe, 2010). Students will not go out of their way—or even think to look—to find a “tutorials” page. Placing the tutorial at their point of need (e.g., placing on a course page) is important. Librarians should also determine how they will communicate the existence of the online tutorial (Bowles-Terry, Hensley, & Hinchliffe, 2010). Students
value what their professors value; consequently, faculty approval, encouragement, and assignment of
library tutorials are essential to success (Appelt & Pendell, 2010).

The characteristics of effective online tutorials have been extensively studied. Effective online
tutorials are modular (Donaldson, 2000; Reece, 2007); address concepts rather than just tools (Dewald,
1999; Reece, 2007); and have clear navigation, though there is some debate over whether or not they
should include branching (Mestre, 2008; Reece, 2007; Ballin & Pena, 2006). Effective online tutorials also
are delivered in a multimedia format (Dewald, 1999; Mestre, 2008). Most authors agree that online
tutorials should be interactive, problem-based, and incorporate activities such as quizzes or other active
learning techniques (Dewald, 1999; Mestre, 2008; Donaldson, 2000; Somoza-Fernandez & Abadal, 2009).
Other elements of effective tutorials include clear learning objectives (Dewald, 1999; Reece, 2007) and the
ability to ask a librarian if the student gets stuck or has a problem (Dewald, 1999; Mestre, 2008). Libraries
undertaking large projects such as online information literacy tutorials are well-served by thoughtful
planning (Franks, Hackley, Straw, & DiRenzo, 2000). Traditional instructional design methods modified
and/or developed for libraries can assist in the creation of a well-developed tutorial (Booth, 2011).

Assessment and feedback are important steps in the development of online information literacy
tutorial. Assessment should identify the success of aligning learning objectives with learning outcomes by
measuring completion of tasks as well as efficiency of completion of tasks. Usage statistics, user surveys,
and observation should be used, as well (Blummer, 2007). Rubrics can be utilized for consistent evaluation
by multiple people (Prange & Sobol, 2008). Without professor feedback, assessment, and buy-in, an online
tutorial may be doomed to failure through faculty ambivalence or disregard (Appelt & Pendell, 2010).
Additionally, full integration of a robust online information literacy tutorial may change how and what
instruction librarians teach (Fowler & Dupuis, 2000).

Design/Development

Since online tutorials are a form of instruction, members of FLITE’s instruction team formed the
core of the PILOT 2.0 Team. Other librarians were invited to join the team based on experience revamping
PILOT or on technical expertise, but only one librarian not on the instruction team accepted the invitation.
This was the automation librarian, who became one of the software co-writers and brought the total team
membership to six librarians.

While the two team members with computer coding experience worked on developing the system
that would allow librarians with little technical knowledge to update content, the team as a whole met to
start fleshing out ideas for what the tutorial should cover.

Technical development of the project that would become PILOT’s learning/content management
system began while content discussions were in their infancy. The original coding project that PILOT’s
platform grew out of had many characteristics of a simple learning management system:

- It was web based.
- It had student-, teacher-, and admin-level logins with different privileges assigned to each.
- It allowed teachers and administrators to associate metadata with an HTML page so the program
could generate a navigation menu that never had broken links.
- It allowed pages to be grouped into units and lessons that would appear automatically on the
  navigation.
- It allowed content creators to reorder their pages easily, without having to fix “next” and
  “previous” buttons.
- It allowed content creators to create and edit interactive quizzes—both graded and ungraded—
  without needing any technical expertise.
- It allowed content creators to create drag-and-drop questions for formative assessment activities.
- It possessed drop box and message board capabilities.

The coding librarians realized that if PILOT were set up in a system like this, anyone who needed to update PILOT in the future would find it much simpler to do so. They also realized that not all of the difficulties in editing PILOT came from the challenge of figuring out which page needed to be edited or from wanting to change “complicated” content like quiz questions.

Instead, some of the challenges sprang from the facts that not all librarians really understood HTML very well; let alone JavaScript. Even those librarians who did understand HTML did not all have the access privileges necessary for uploading or editing HTML files on the library’s servers. These problems limited the number of librarians who were able to edit PILOT, leaving the bulk of the work to fall on very few shoulders.

For that reason, the coding librarians decided that when they adapted their original project to provide the backbone of PILOT, they would also add some content management components to it. They would create a web interface for page creation and editing, and also include the option to generate common HTML tags on demand. This would give easy access to PILOT content to an unlimited number of librarians. It would also allow less-confident page creators to select what they were trying to add to their page (e.g., biggest heading, smaller heading, or numbered list) without having to memorize HTML tags. The coding librarians hoped this would make building and updating the tutorial easier and less intimidating for all the librarians.

Work on the original system began in early 2010, and coding progressed using PHP, MySQL, JavaScript, HTML, and CSS. In early 2011, the PILOT system was deemed usable and PILOT’s content creators were invited to start adding content via the web interface. Updates to the code continued into the summer as librarians added content to the system and made suggestions.

The PILOT 2.0 team knew from the start that they wanted to keep PILOT’s modular structure. In determining how to break down content into modules, they mapped their chosen ACRL information literacy outcomes (see Appendix) to the existing tutorial’s structure. In the end the team found that a breakdown of subjects very similar to that found in the original tutorial would be the most logical way to present their material. The five units, or modules, that they decided to include were Identify, Select, Find, Retrieve, and Evaluate.

The team also decided that despite the old PILOT’s inclusion of material about how to cite sources in MLA and APA format, they would not include citations as part of their initial roll-out of the new PILOT. While everyone on the team agreed that citations are an important topic, the consensus was that classroom teachers and the Ferris State University Writing Center were more appropriately responsible for teaching citations than the library was. Furthermore, if there was demand for content covering citation styles, an additional unit or lesson could be added at a later date given the flexibility of the system.

It was determined that all content should be designed to appeal to an undergraduate student who isn’t willing to spend much time figuring a system out, and who expects polished presentation of content including easy navigation, attractive images, and other media.

In the end, the design decisions the PILOT team felt strongly about were:

- Content should be kept short and to the point.
- The tutorial should be modular, which each module capable of being used independently of the others.
• Content should appeal as much as possible to all types of learners (i.e., visual, aural, kinesthetic).
  
  o Multimedia should be incorporated where possible.
  
  o The tutorial should be interactive, with immediate user feedback where possible.

• End-of-unit quizzes whose scores can be emailed to professors must be included.

• The tutorial should be easy to navigate, even if the user does not wish to take the tutorial strictly in order.

• The new tutorial should be easy to update, even for those librarians without strong HTML skills.
  
  o Interactive elements must be easily edited in addition to static HTML elements.

The team was able to make those decisions with relative ease, but when it came time to actually create content, librarians met with unexpected difficulty. Each librarian was responsible for one unit of content with two librarians sharing the Evaluation unit. However, the interface allowing the librarians to input pages and interactive elements was not yet complete. Uncertainty about tools and capabilities of the tutorial combined with the struggle of authoring new content to caused many of the librarians to feel completely lost when they tried to write their unit of the tutorial.

Furthermore, none of the PILOT 2.0 team members had release time to work on this project. Regular library business is already a full workload, and the PILOT 2.0 team had to build a new, large-scale tutorial on top of their other responsibilities. This bogged the tutorial-creation process down, making it impossible for some team members to devote time to the new PILOT on a regular basis.

There was some thought that creating a template for everyone to use while laying out their units might help simplify the authoring process. This effort failed as most of the librarians protested that the template did not fit their content.

Further efforts to have everyone storyboard their unit before creating it on the web server met with slightly more success, but still were not universally adopted. In the end, most librarians waited until the web interface was created and then used it to build content that they tweaked, edited and rearranged until they were satisfied with the results. The content/learning management system that supports PILOT makes it easy to rearrange pages, lessons, and units without breaking links. It also speeds up the process of writing HTML. Both of these traits reduce the wasted time when librarians create a page and then decide to modify it or rearrange its order in the tutorial.

All but one of the units were designed to be generic enough that another library could use them with few, if any, changes. One unit, Retrieve, focuses on library-specific tools and includes links to FLITE’s pre-existing screencasts on topics like using the catalog or navigating the library website. This unit is the one that is most likely to need continuous updating as interfaces, vendor tools, and resources appear, evolve, and disappear.

Near the end of the tutorial-creation process, a graphic designer was hired to give the tutorial a polished appearance. His work on banners, fonts, and colors added visual panache that none of FLITE’s librarians had been able to contribute.

**Implementation and Evaluation**

In July 2011, the PILOT team asked selected library student workers to run through PILOT and provide feedback. Other FLITE faculty librarians and administrators also provided feedback. All
The newly revamped PILOT went live at Ferris State University at the beginning of August 2011, in plenty of time for the start of the fall semester. At the moment the system went live, anyone who went to the old PILOT’s URL ended up landing on the new PILOT. This ensured that no instructor would continue to use the outmoded version of PILOT, intentionally or otherwise. All university faculty members also received a postcard in the campus mail promoting the new version of PILOT. Further outreach efforts included highlighting the new PILOT at events like the university’s Online Course Fair, at which the library presented a poster.

In December 2011, librarians sent an email questionnaire to faculty members known to have assigned PILOT to their students. Results of that survey have not yet been collected, but comments received during the semester show that the new PILOT has seen a mostly positive reception.

**Conclusion and Future Directions**

Online tutorials are very popular as a scalable way to provide students with the fundamentals of information literacy. Create a tutorial once, and it can be used over and over to instruct students, saving a great deal of librarian time. However, tutorials require technical skills to create, and not all librarians have such technical skills. What’s more, tutorials become out of date relatively quickly, and require updating. Those updates also require technical skills, and are often a time commitment no one planned for. Neglected, the tutorial grows increasingly out of date until it is no longer usable. Then librarians are back at square one, doing all their instruction face-to-face, or else rebuilding the tutorial from the ground up.

The Project Information Literacy Online Tutorial and its content/learning management platform solve this problem by making tutorials easy to create, access, edit, and organize. The platform allows librarian users to create interactive quizzes and drag-and-drop questions without needing to know any programming languages, and also makes it possible to quickly build content pages even for those with only a passing knowledge of HTML. Other media can be embedded into content pages, as well.

Upcoming plans for PILOT include adding capabilities to it so that the library can assess student learning. A pre- and post-test for tracking users’ scores would enable FLITE to identify and address the tutorial’s strengths and weaknesses. There has also been discussion of collecting demographic information from users, so that librarians could have a better sense of their audience’s information-literacy background.

The system PILOT runs on is capable of managing more than one large-scale tutorial, and FLITE may need to create a more advanced version of PILOT for graduate-level users.

References


Appendix

ACRL Information Literacy Competency Standards for Higher Education used in PILOT
http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm

Standard One

The information literate student determines the nature and extent of the information needed.

Performance Indicator Two

The information literate student identifies a variety of types and formats of potential sources for information.

Outcomes C, D

- Identifies the value and differences of potential resources in a variety of formats (e.g., multimedia, database, website, data set, audio/visual, book)
- Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)

Standard Two

The information literate student accesses needed information effectively and efficiently.

Performance Indicator One

The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.

Outcomes A, D

- Identifies appropriate investigative methods (e.g., laboratory experiment, simulation, fieldwork)
- Selects efficient and effective approaches for accessing the information needed from the investigative method or information retrieval system

Performance Indicator Three

The information literate student retrieves information online or in person using a variety of methods.

Outcome A

- Uses various search systems to retrieve information in a variety of formats

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 Indicator Two

The information literate student articulates and applies initial criteria for evaluating both the information and its sources.
Outcome A

- Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.
Mining e-Reserves Data for Collection Assessment: An Analysis of How Instructors Use Library Collections to Support Distance Learners

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With both budget dollars and buying power shrinking for academic library collections, the selection of materials is a series of crucial choices. With increases in numbers of online programs, how can we determine if what we are buying is in fact what our users need? E-reserves are an increasingly popular way to provide digital copies of course readings via an online interface. This paper reports on an analysis of items placed on e-reserve at two large, publicly-supported institutions in Michigan. An inventory of these items reveals: what types of academic materials are being used; what percentage are from the libraries’ electronic or print collections or from non-library sources; and whether periodical articles placed on e-reserve are from scholarly publications. The results of this analysis will provide useful insight into collection assessment, as well as the nature of materials being used by teaching faculty in support of distance learners.

Introduction

Academic librarians employ a great deal of effort in the selection of materials that will support the instruction and research taking place at their institutions. However, their power to buy these materials is more limited than ever before. The state of Michigan has 45 public academic institutions (National Center for Education Statistics, 2008-2010) and financial support for them is dropping. For the fiscal year 2010-2011, Michigan’s public institutions were faced with a 2.8% cut in initial gross higher education appropriations. This amounts to an initial loss of 2.3 million dollars for Central Michigan University and 3.2 million dollars for Western Michigan University (Jeffries & Jen, 2010). Such a loss affects all financial aspects of a University and inevitably trickles down to library finances. With both budget dollars and buying power shrinking for our academic library collections, the careful selection of resources becomes even more critical.

At the same time, our student populations are shifting to become more decentralized, especially in the online environment. According to a report on online education by Allen & Seaman, the number of students taking at least one online course in the fall of 2010 was greater than 6.1 million. Although the authors found that the increase in the number of students taking online classes is slowing, they reported that the percentage of students in higher education taking at least one course online was still 31% (Allen & Seaman, 2011). As we gain more online students, how can librarians determine if the materials they are buying are in fact what these distance users need?

One answer to this question may be the examination of items on electronic reserve. The American Library Association defines reserves as “materials selected by faculty that are required or recommended course readings” (2003, “Applying fair use,” para. 1). Electronic or e-reserves are reserve materials in electronic format. These digital copies of course readings available via an online interface are not only convenient for our patrons, but provide librarians a unique view of readings instructors select to support curricular goals for their courses. As an alternative to using click-through counts or circulation statistics to assess the use of a library’s collection, reserves allow us to really see the materials faculty members want their students to use; e-reserves provide this data for distance students in particular.

Author Note: The authors wish to thank the following people for their contribution to this project: Julie Hayward (Western Michigan University); Timothy Peters (Central Michigan University); Laurie Bellinger (Central Michigan University); and Pamela Grudzien (Central Michigan University).
E-reserves are almost ubiquitous in today’s academic library and research environment, but what, specifically, are these materials? Where are they coming from? Are they scholarly research articles whose access has been purchased by the library or news items available online? Are students reading selections from the library’s print books? What about its e-books? These can no longer be considered idle speculations. In the state of Michigan recession woes have been felt worse than many; per capita money income from 2005-2009 in the state was lower than reported nationally, while the percentage of people living below the poverty level in 2009 was higher (U.S. Census Bureau, 2011). With these figures and the cuts in state appropriations in mind, analysis of these questions is timely.

At Western Michigan University and Central Michigan University, thousands of items are placed on e-reserve each semester for both on- and off-campus classes. An inventory of these items may help to illuminate the end-users of our collections, and discover whether or not librarians’ selections are being used in support of our students – our distance students in particular. By having data from more than one school of comparable size and geography, we hope to be able to draw conclusions where the data are similar or different.

Literature Review

A review of the literature for studies done on the types and sources of materials on electronic reserves showed that such research is few and far between. The most comprehensive study found was published in a SPEC Flyer and Kit from the Association of Research Libraries (ARL), authored by Cindy Kristof in 1999. A survey of ARL libraries was done to gain an overall picture of electronic reserves services in those institutions at the time. Of 56 responding ARL libraries, the “five most common types of material placed in electronic reserves systems were instructors’ course notes and sample tests (94%); instructors’ exercises/problem sets (88%); journal articles (69%); and book chapters (59%). Materials such as links to web pages, syllabi, homework solutions, and student materials were also mentioned” (Kristof, 1999a, “Survey Results,” para. 4). The percentages refer to the amount of respondents that reported having that type of material in electronic reserve. In the data from the survey, other material types mentioned by respondents included photographs/slides, movie clips and sound clips (Kristof, 1999b).

This study was published at a time when journal articles were just beginning to be comprehensively available in electronic format. Almost ten years later, however, the types of materials mentioned in the study were still being offered through library e-reserve systems. At Pennsylvania State University Libraries, items “eligible for electronic reserves include… photocopies of articles, book chapters, past exams and instructors’ notes” (McCaslin, 2008, p. 338).

Since the 1999 ARL study, many papers have been published on electronic reserves systems in academic institutions. However, most of these tend to concentrate on (a) the history of e-reserves at an institution, (b) the process of placing the material on reserve--generally with a discussion of the technology used, or (c) a focus on copyright compliance in the e-reserve context. But while the format and source of e-reserve items were not the focus of the research, some of the published literature has explained how the considerations above have influenced the types of materials placed on e-reserve, and included some examples.

At the University of Kentucky, the very first e-reserve request to Distance Library Learning Services “consisted of 20 articles” (Wilson, 2002, p. 539) which were nearly all held in the library’s licensed resources; by the next year library staff were linking to URLs when possible (Wilson, 2002). However, it was not uncommon for an institution—through the library or another department—to begin offering e-reserves in the form of faculty-generated content and scanned print items, with a subsequent move to electronic items from the library’s collection. Buehler, et al. (2001) wrote that when e-reserves services began at the Rochester Institute of Technology, “the vast majority” of materials “were created by faculty” (“Services to Distance Learners,” para. 4), and that “[a] myriad of scanned materials were printouts from PowerPoint presentations” (“Services to Distance Learners,” para. 5). However, when the library became responsible for the scanning of materials, the librarians there began searching for electronic versions of requested articles as the preferred format for e-reserves (Buehler, et al., 2001).
This preferred format soon gained more official credence. By 2003, enough institutions were engaging in e-reserve services that the American Library Association (ALA) published a statement on Fair Use and electronic reserves. While concentrating on the application of Fair Use criteria to such services, the statement notes that “[e]reserve systems include text materials, both factual and creative” and “serve the interests of faculty and students who study music, film, art, and images” (American Library Association, 2003, “Applying fair use,” para. 8). The statement emphasized that e-reserve materials were not simply blocks of scanned text but also included a wide range of multimedia. This was also noted in the responses to the ARL survey published several years earlier (Kristof, 1999b).

The ALA statement also specified that “licenses to [electronic] resources often include the right to use them in e-reserves systems. In such cases, no permission is required and a fair use analysis is unnecessary” (2003, “Applying fair use,” para. 3). These types of license agreements allow libraries to save money on copyright clearances as well as staff time spent in scanning print materials, but also mean that the materials on e-reserve may be more likely to be held in library collections. This was the case reported at the Rochester Institute of Technology (Buehler, et al., 2001) as well as at Pennsylvania State University (McCaslin, 2008). The movement toward linked electronic reserves material is most clearly illustrated at the Reed Library at Fort Lewis College, whose staff members provide URLs from within licensed databases as the preferred e-reserve method for periodical articles:

Linking to content in appropriately licensed library databases eliminates costs that would otherwise go toward copyright permissions for the reproduction of needed material. While not every article faculty may want to put on electronic reserve can be found in a database…the push towards linking to articles in databases is beneficial for both library personnel and faculty (Oliver, 2009, p. 107).

Although not a part of the published literature, frequently academic library websites have posted guidelines on the use of e-reserves. Many of these include the process of putting material on e-reserve, gaining copyright clearance and accessing the materials – the important information that faculty and student users at institutions need to know. There are fewer guidelines that specify the types of materials acceptable for e-reserve, though a Google search of "e-reserve material types” returned a good number of such online guidelines. Many of them specifically mention two main types of e-reserve materials – journal articles and book chapters. For these institutions as well, a push toward using library collection items for e-reserves can be seen.

Some examples of academic libraries that provide concise lists of the types of material on e-reserve are the University of Idaho Library (UIL), the University of Washington Libraries (UWL) and Southern Illinois University Carbondale Morris Library (SI Morris Library). Material types listed on these websites include journal articles and book chapters as well as other specific item types: course syllabi, lecture and class notes, presentations, links to websites, practice exams and exercises, test files, solutions files, student papers, images, audio files and video files (UIL, n.d.; UWL, 1998-2011; SI Morris Library, 2011). Again, some of these are the same types of materials reported as far back as 1999 (Kristof, 1999a; Kristof, 1999b). The amount of the different item types placed on e-reserve, however, is either unknown or unpublished.

It seems then from the available literature that the types of e-reserve materials libraries place for their institutions depends not only on what the faculty request, but also on the push and pull of copyright restrictions. There are even fewer examples of reported numbers of items placed on e-reserve. The 1999 ARL study states that “[t]he number of items or files that libraries had in electronic reserves varied widely, from zero to 60,000” (Kristof, 1999a, “Survey Results,” para. 4). Recent studies have reported more conservative numbers. McCaslin (2008) writes that between Fall 2001 and Spring 2005, numbers of items on e-reserve ranged from a low of 4,092 in Spring of 2002 to a high of 6,929 in Spring of 2004. Similarly, Oliver (2009) notes that “items placed on e-reserve peak in 2005, with 1,262 items” (p. 115) when examining the years 2003-2007. These numbers may not be comparable, due in part to the relative sizes of the two institutions; Pennsylvania State University and Fort Lewis College, respectively.
So what does this mean for two large public institutions in Michigan? By comparing two schools of similar size and geographic location, we hope to gain a more relevant comparison of the number of items on e-reserve at the present time. The gradual move from instructor-generated content to licensed and open web materials seen in the literature may also be reflected in this data as we examine the formats and sources of e-reserve materials. Finally, e-reserve data may be useful to subject selectors. A study from the University of Oregon Law Library, while not examining e-reserves in particular, finds that closely examining the sources of items in a library’s collection can have a directional impact on collection development policy (Breakstone, 2010). With this research, we hope that our study of the types and sources of items on e-reserve may shed light on future collection development directions for our institutions.

**Background**

Western Michigan University (WMU) is a state-supported, research institution located in Kalamazoo, Michigan. Total enrollment at WMU for Fall 2011 was approximately 25,000 students, with about 5,000 of those students enrolled in graduate programs (Western Michigan University Office of Institutional Research, 2011). WMU offers 141 undergraduate programs, 69 masters programs and 29 doctoral programs (Western Michigan University, n.d.). Courses and programs are also offered away from the main campus through WMU Extended University Programs (EUP). Serving the University’s information needs are WMU Libraries, whose collections contain approximately 2.5 million print and non-print titles: Electronic subscriptions were about 45,000 titles in 2011. Facilities include the main Waldo Library, as well as branches for Education, Music & Dance, and Archives & Regional History.

Central Michigan University (CMU), located in Mount Pleasant, Michigan, is the fourth largest public university in the state and is composed of the main campus, Off-Campus Programs and CMU Online. Serving the information needs of CMU and its over 200 academic programs (Central Michigan University, n.d.) is Central Michigan University Libraries, which are made up of the main University Library, Off-Campus Library Services (OCLS) and the Clarke Historical Library. The total enrollment for Fall 2011 at CMU was about 28,000 students with an off-campus enrollment of approximately 7,000 (Central Michigan University Office of Institutional Research, 2011). The library currently holds approximately 1.3 million volumes, with about 21,000 electronically-available periodicals—including via full-text databases—as of 2010.

**Distance Education and Courseware**

WMU distance students are primarily taking classes on a part-time basis: 90% of the undergraduate students are part-time, while 68% of graduate students are so enrolled. This means that they are largely non-traditional students who are working full time. About 90% of these students reside within the state of Michigan with the remaining 10% living out of state. WMU EUP operates seven regional sites throughout the state in Battle Creek, Benton Harbor-St. Joseph, Detroit, Grand Rapids, Lansing, Muskegon, and Traverse City. WMU has also seen an increase in enrollments in online courses and programs. In the Fall of 2011 approximately 4,000 students were enrolled either online or at regional sites. Undergraduates accounted for 55% of the off-campus enrollments, with the remaining 45% being at the graduate, primarily Masters level (Western Michigan University Office of Institutional Research, 2011). Off-Campus degree programs are primarily concentrated in the areas of education, health, and business.

Central Michigan University has a long history of serving off-campus students, and the Off-Campus Programs division (under various names) has been specializing in doing so for over 40 years. Today, CMU has over 60 class centers across North America, many of them on military bases. The majority of off-campus students (75%) are studying at the graduate level (Central Michigan University Office of Institutional Research, 2011), and many are non-traditional students who choose to pursue either the Master of Science in Administration or the Master of Arts in Education degrees. With a strong impetus from University Administration to create more online classes, a third division of the University, CMU Online, came into being officially around 2008. Online courses are offered to both the on- and off-campus populations, and consist of both undergraduate and graduate students. OCLS has extended its services to
the online population as well, recognizing that students taking online classes—even while living on campus—are distance students.

In recent years, WMU has used WebCT and Blackboard Vista as the primary courseware platform. In 2011 the Desire2Learn (D2L) system was chosen to replace Blackboard Vista and all online classes are scheduled to be running in D2L by Spring 2012. Central Michigan University uses the course management system Blackboard for all courses regardless of location, and this is the platform to which electronic course reserves are uploaded.

**Library Services for Distance Learning Students, Staff and Faculty**

In order to support the research needs of the off-campus community the WMU Libraries have provided instruction and delivery services to these students and faculty for many years. The goal at Western Michigan has always been to provide library services for the off-campus community that are equivalent to services offered to students taking classes on campus.

Collection development at WMU Libraries is the responsibility of the Collection Development Committee, the Associate Dean for Collections and Technical Services, as well as the individual librarian liaisons for each academic department. Liaisons are responsible for programs—which are also offered off-campus—and are mindful when making requests for purchase to ensure that collections are as accessible as possible to off-campus students. It should also be noted that the Libraries are involved in the curriculum process when academic departments offer programs away from the main campus for the first time. The curriculum change process involves a stage where the Library Administration is informed in order to assess collections that are available to those students, and what additional books, subscriptions, databases or other resources are needed in order to be able to support those students.

Similarly, librarians and library staff at Central Michigan University have been supporting the needs of distance learners for decades. The five full-time librarians of CMU Libraries’ Off-Campus Library Services focus specifically on serving that patron population.

Collection development at Central Michigan University Libraries is the responsibility of the on-campus reference librarians, each of whom specializes in particular subjects and recommends materials for purchase in those areas. However, three of the OCLS librarians also have collection development responsibilities, with oversight of funds intended for the purchase of materials focused on topics specific to distance learning students and faculty. These topics—generally within the areas of business administration, educational administration and health care administration—are ascertained from common reference interactions, as well as knowledge of assignments from off-campus and online instructors. The three OCLS librarians buy books primarily in electronic format in order to be most helpful to distance students and instructors, and can take new databases under consideration with the main librarian selector for a given subject.

**Electronic Reserves Services**

*Western Michigan University*

WMU Libraries have offered electronic reserve services for approximately ten years. Electronic reserves are primarily administered by the Resource Sharing Center (RSC). Although previously the Docutek system was used as the platform, ARES from Atlas Systems was implemented in 2007 and remains the system used for e-reserve services. When an online course is set up in the e-reserve system, the link is sent to the instructor or instructional designer who must add it to the online course. Each course in ARES is set up with a password. When the students access the e-reserve site, whether they are in an online class or not, they are required to enter a password. This does present a barrier to using e-reserves in an online class since it is not as seamless as just uploading PDFs to the course management system, which can be accessed without any other password or additional steps.
Faculty have two options for setting up an e-reserve site for their course. If they prefer to have WMU Library staff do most of the leg work, all they have to do is set up an account and then send their course information and reading list. RSC staff then creates the class and add the items. Items in the WMU Libraries’ print collections are scanned and saved as PDFs and uploaded to the class, and links are added for electronically-available articles and e-books. RSC staff also clear copyright as part of the e-reserve process.

Faculty who prefer to have more control over their e-reserve site may choose the second option, which is to do most of the work themselves. They can set up the course and upload materials on their reading lists. If they choose to do this themselves the materials are listed as “awaiting review by staff.” RSC staff must then check the copyright status of the citations. They also will remove PDFs of any articles available electronically and switch over to a link to that item before “clearing” it to be viewed by students.

As shown in Table 1, the e-reserve service at Western Michigan University has been growing steadily in recent years.

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>E-reserve Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2010</td>
<td>3836</td>
</tr>
<tr>
<td>2010-2009</td>
<td>3321</td>
</tr>
<tr>
<td>2009-2008</td>
<td>2980</td>
</tr>
</tbody>
</table>

Central Michigan University

The development of e-reserve services at Central Michigan University Libraries was driven in part by copyright considerations. With a long history of information delivery to distance students, it was necessary for CMU Off-Campus Programs—and later CMU Online—to have a copyright clearance department. As the Off-Campus Library Services department is a part of Off-Campus Programs as well as of the University Libraries, this copyright department was physically based in the library and library staff handled copyright clearance on early versions of electronic reserves. For example, prior to 2006 the department would create electronic course packs, which were saved onto CDs and sent to instructors, who would then place the material into Blackboard. Under the jurisdiction of Off-Campus Programs, copyright costs for this service were divided among the number of enrolled students and added as a fee for the course.

In the meantime, the main University Library was also beginning to provide electronic reserves services by uploading materials directly into a course’s Blackboard shell. However, because there was no library-maintained copyright department, only those items that qualified for fair use or that were in the public domain could be placed on e-reserve. And due to applied copyright restrictions, the same item could not be placed on e-reserve for more than one semester for the same course. This was inconvenient for on-campus faculty who had specific articles or book chapters that were crucial to their curriculums; and as they broadened their teaching formats, they wanted to know why a copyright clearance service was offered for their online classes but not for their face-to-face classes. The reason was that CMU Online had a system for paying for copyright clearance, whereas the main University Library did not.

In 2009, the CMU Copyright Committee—with University-wide representation—proposed that on-campus classes receive copyright clearance services as well as off-campus and online classes. The CMU Libraries applied for and received a CMU 2010 Grant, part of which was used to fund a study to determine the feasibility of offering the copyright clearance service across the entire University. In July of 2009, the Off-Campus Library Services copyright department was merged with the Libraries’ course reserves unit to become the Course Reserves & Copyright Services office. This new department took
charge of the copyright clearance investigations and instituted an e-reserves pilot program for on-campus classes, which began in January of 2010.

The pilot was a success: In 2011-2010, over 2,900 items were placed on electronic reserve, including duplicate citations for multiple sections of the same course (Central Michigan University Libraries, 2011a); the cost of copyright clearances was found to be manageable; and a post-pilot study found that 97.6% of participating on-campus faculty were satisfied with the new service (Central Michigan University Libraries, 2011b). After the grant was concluded in June of 2010, support was sought and gained by University Administration to proceed formally with the e-reserves service. Since then, university-wide electronic reserves have continued as a permanent service of CMU Libraries, funded by the University.

So while the process of placing items on e-reserve has a long history at Central Michigan University, handling such a large volume of courses is still very new. To date, there is no automated system or vendor-supplied product that is used to coordinate the CMU Libraries’ e-reserves service. The citations are supplied from course instructors, at which point library staff search for the items in the library collection. Electronic versions are preferred, scanned copies if electronic is not available. If an item needs to be requested it is manually cleared for copyright by library staff members, who obtain permissions and pay usage fees. Once the full text is ready, library staff members upload the e-reserves into the Blackboard shell for the course. All citation lists and full text materials are saved in PDF, Word document, and Excel formats on an external hard drive. Only a handful of library staff is responsible for gathering and maintaining this data; clearing copyright when necessary; and uploading e-reserves into Blackboard course shells, and all manually.

The Central Michigan University e-reserves service saw a large jump in items from 2010-2009 to 2011-2010 as a result of the pilot project as shown in Table 2 (Central Michigan University Libraries, 2011a); the totals include duplicates for multiple sections of a course.

Table 2

<table>
<thead>
<tr>
<th>Year</th>
<th>E-reserve Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2010</td>
<td>2902</td>
</tr>
<tr>
<td>2010-2009</td>
<td>1436</td>
</tr>
<tr>
<td>2009-2008</td>
<td>1667</td>
</tr>
</tbody>
</table>

Methodology

Pulling Citations

To begin our investigations, we needed to pull out citations for all items on reserve for the Fall 2011 semester. At Western Michigan University, RSC staff members were able to select all items with an “active” status in the ARES system and export than into a Microsoft Excel file. In order to examine the types of items on e-reserve at Central Michigan University, it was necessary to gather this data from the CMU Libraries’ Course Reserves and Copyright Services department.

CMU also offers staggered, compressed terms for its off-campus and online courses. In 2011, the fall semester included Fall I, beginning the third week of August; Fall II, beginning the third week of October; and Fall III, beginning the first week of November (Central Michigan University Off-Campus & Online, n.d.). Because the e-reserves are cleared for copyright and uploaded into a course’s Blackboard shell by hand with limited staff, it is often the case that some of the e-reserves needed later in the Fall are
not uploaded until midway through the main semester. Thus, gathering data on e-reserves through CMU Libraries required more steps than those at Western Michigan University.

It was first necessary to combine the e-reserve citations of each course into one sample. The Course Reserves staff provided the total e-reserves citations for the first two months of Fall 2011 only; this included the reserves ready for the total fall semester for on-campus, as well as the Fall I semester for off-campus and online classes. Excluding duplicates for multiple sections of the same course, there were a total of 1,336 citations. These citations came from the Course Reserves & Copyright Services office mainly as lists in Microsoft Word document format and as individual PDF files. Ten of these citations were excluded initially because they were requests from faculty that Course Reserves was unable to provide due to copyright restrictions; either a request contained too much material to be protected under Fair Use, or the rights holder of the material was unable to be located. This reduced the number of citations to 1,326 which were then entered by hand into one master Microsoft Excel spreadsheet and cleaned so that the source of each citation could be identified.

Sample Sizes

For the purposes of this study, we decided to randomize the sample by alphabetizing the titles and then examine a portion of the total. The e-reserves from each institution were examined separately. At Western Michigan University, one third of the total—every third e-reserve citation—was taken to result in a final sample size of 815; a manageable number to provide useable data.

During the data entry process at Central Michigan University, an additional 13 citations were removed from the sample because they were either references to entire print books placed on physical course reserve or because they did not contain enough information to identify the citation’s source. This left a total of 1,313 citations for CMU. The titles of each citation were then sorted in alphabetical order to randomize them, and every other e-reserve citation was selected to make a final sample of 656 citations. The one-half sample was chosen in order to result in a sample of comparable size to that of Western Michigan University, which had a larger overall number of citations for the full Fall 2011 semester.

Sample Analysis

Once the final random samples were ready for each institution, each citation was analyzed to determine its format and source. The format codes used were based on the most common types of items found and are described as follows:

- BC – Book chapter (or book section) from a print book
- EB – E-book (either a section or an entire electronic book)
- FI – Files (usually PDFs or Word documents provided by an instructor)
- JA – Journal article (i.e., periodical article)
- LC – Law cases available on the open web
- MM – Multimedia
- R – Reports/research briefs/working papers (available as stand-alone documents, usually online, but not obviously part of a periodical)
- RE – Reference entries (from encyclopedias, handbooks, etc.)
- WS – Websites
As e-books are a relatively new format for electronic reserves, they were noted separately from print book sections that had been scanned to be placed on e-reserve. Files generally consisted of instructor-supplied content such as syllabi, homework assignments, sample tests, and problem solutions. Of the many types of materials available online (e.g., open web law cases and some reports) the designation WS (websites) was saved for whole websites, often containing excerpts or reviews of an author, artist or organization’s work.

For a citation’s source, the following codes were used:

- LCE – Library collection, electronic
- LCP – Library collection, print
- NL – Not in library collection
- OW – Open web

Finally, all periodical articles (JA) were examined to see if the citation was from a scholarly publication. Scholarly (or refereed) status was determined by using Ulrich’s Periodicals Directory database. For every item with a JA format, scholarly status was noted as yes (Y) or no (N).

In order to determine format, source and scholarly status, each citation had the following information categories, filled in depending on the type of item and how much information was provided: Title, Author, Date, Journal Title, Volume & Issue, Book Title, Book Author/Editor, Publication, Chapter (Books), Pages, Instructor, and Course. If crucial identifying information was not provided in the original data, research was required to find it. A Note field was used for any additional information about a particular citation that would help to identify its format and/or source; in many cases it contained a link to the item’s location within a licensed database or on the open web.

Not every field was filled in for each citation, depending on its format; periodical articles would not have a book title, for example. Also, not every field available for one format (i.e., BC) was necessarily filled in, depending on either the type of the item (i.e., not all books have chapter numbers) or how much information was available (i.e., not every citation listed a book’s publication information). In order to display how the citations were entered and coded, Figure 1 contains two examples of citations on e-reserve at Central Michigan University during the Fall I semester. Instructor names and course designations have been removed for privacy. The citations from Western Michigan University were entered in a similar fashion.

It should be noted that the data from Central Michigan University included 82 book sections without given titles. These were listed as “book chapter/section, title not given” or “plates from a book” and were therefore sorted together in groups when the sample was alphabetized. This may contribute to error in the final sample, although the effect may have been reduced by taking every other citation rather than a smaller percentage of the whole. With both Western and Central Michigan University Libraries—as with any data set—standard margins of error apply.
Results

The results of our analysis are shown in the following tables as each citation was examined for item source and item format, and whether or not periodical articles were from scholarly publications. As we also had access to the publication years for each e-reserve item, we also decided to include this data for supplementary analysis.

Format

The majority of WMU e-reserve items were periodical articles, followed by book sections: either whole chapters or sections of chapters. Although at approximately 48% and 38% respectively, the amounts were very close as seen in Table 3. The majority of Central Michigan University citations were of the same two types: This time book sections followed by periodical articles. These were present in the sample in approximately equal amounts for CMU: about 44% for each.

Table 3

Formats of E-Reserve Items

<table>
<thead>
<tr>
<th>Item Format</th>
<th>WMU (amt.)</th>
<th>WMU (%)</th>
<th>CMU (amt.)</th>
<th>CMU (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Book Sections</td>
<td>307</td>
<td>37.67%</td>
<td>291</td>
<td>44.36%</td>
</tr>
<tr>
<td>E-Books</td>
<td>15</td>
<td>1.84%</td>
<td>18</td>
<td>2.74%</td>
</tr>
<tr>
<td>Files</td>
<td>38</td>
<td>4.66%</td>
<td>19</td>
<td>2.90%</td>
</tr>
<tr>
<td>Periodical Articles</td>
<td>392</td>
<td>48.09%</td>
<td>286</td>
<td>43.60%</td>
</tr>
<tr>
<td>Law Cases on the Open Web</td>
<td>0</td>
<td>0.00%</td>
<td>17</td>
<td>2.59%</td>
</tr>
<tr>
<td>Multimedia</td>
<td>3</td>
<td>0.37%</td>
<td>3</td>
<td>0.61%</td>
</tr>
<tr>
<td>Reports/Research Briefs/Working Papers</td>
<td>4</td>
<td>0.49%</td>
<td>10</td>
<td>1.52%</td>
</tr>
<tr>
<td>Reference Entries</td>
<td>30</td>
<td>3.68%</td>
<td>8</td>
<td>1.22%</td>
</tr>
<tr>
<td>Websites</td>
<td>26</td>
<td>3.19%</td>
<td>4</td>
<td>0.61%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>815</td>
<td>100%</td>
<td>656</td>
<td>100%</td>
</tr>
</tbody>
</table>
**Source**

The vast majority of the materials on e-reserve for Fall 2011 from Western Michigan University came from library collections, whether in print or electronic format; this represented about 83% of total citations as shown in Table 4. Similarly, the majority of the Central Michigan University citations also came from sources owned by the CMU Libraries, either electronically or in print; a total of about 68% owned. The remaining items were either protected by copyright but not owned by the Libraries, or available on the open web.

Table 4

*Sources of E-Reserve Items*

<table>
<thead>
<tr>
<th>Item Source</th>
<th>WMU (amt.)</th>
<th>WMU (%)</th>
<th>CMU (amt.)</th>
<th>CMU (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library Collection - TOTAL</td>
<td>677</td>
<td>83.06%</td>
<td>449</td>
<td>68.45%</td>
</tr>
<tr>
<td>Electronic</td>
<td>324</td>
<td>39.75%</td>
<td>234</td>
<td>35.67%*</td>
</tr>
<tr>
<td>Print</td>
<td>353</td>
<td>43.31%</td>
<td>215</td>
<td>32.77%*</td>
</tr>
<tr>
<td>Not in Library Collection</td>
<td>94</td>
<td>11.53%</td>
<td>140</td>
<td>21.34%</td>
</tr>
<tr>
<td>Open Web</td>
<td>44</td>
<td>5.40%</td>
<td>67</td>
<td>10.21%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>815</td>
<td>100%</td>
<td>656</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Percentages add to less than 68.45 due to rounding

**Scholarly Publications**

Table 5 shows the results of the analysis of the journal article citations with regard to their scholarly status. The 392 periodical article citations from WMU and the 286 periodical article citations from CMU were examined using Ulrich’s Periodicals Directory to determine whether or not they came from scholarly (refereed) sources.

We found that the majority did come from scholarly publications in both cases, and in nearly equal amounts: 70.40% from WMU and 71.68% from CMU. The remaining citations were from non-scholarly sources such as trade publications, magazines, and newspapers.

Table 5

*Periodical Articles on E-Reserve from Scholarly and Non-scholarly Publications*

<table>
<thead>
<tr>
<th>Periodical Articles</th>
<th>WMU (amt.)</th>
<th>WMU (%)</th>
<th>CMU (amt.)</th>
<th>CMU (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarly Publications</td>
<td>276</td>
<td>70.40%</td>
<td>205</td>
<td>71.68%</td>
</tr>
<tr>
<td>Non-scholarly Publications</td>
<td>116</td>
<td>29.60%</td>
<td>81</td>
<td>28.32%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>392</td>
<td>100%</td>
<td>286</td>
<td>100%</td>
</tr>
</tbody>
</table>
**Median Publication Dates**

As we looked at our data sets we decided to more closely examine the periodical articles and book sections—which accounted for the vast majority of our citations—in order to get a general sense of how current the materials were. Table 6 shows median publication dates for book chapters and journal articles for both institutions.

Table 6

**Median Publication Dates for the Most Common E-Reserve Types**

<table>
<thead>
<tr>
<th>E-Reserve Type</th>
<th>Median Publication Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>WMU Book Sections</td>
<td>2000</td>
</tr>
<tr>
<td>WMU Periodical Articles</td>
<td>2004</td>
</tr>
<tr>
<td>CMU Book Sections</td>
<td>1999</td>
</tr>
<tr>
<td>CMU Periodical Articles</td>
<td>2003</td>
</tr>
</tbody>
</table>

**Analysis**

With our results in hand we can turn back to our original questions. As our budget dollars and buying power are shrinking, how can we determine whether what we are buying is in fact what distance learners need? Judging by the analysis of e-reserve items for the two schools in this study it appears that our collections are serving our users quite well. Overall 83% of the items on e-reserve for Fall 2011 at Western Michigan University came from the institution’s library collections. At Central Michigan University that number was somewhat less but still a clear majority: 68%. The differences in the collection sizes and overall budgets at the two schools most likely explain the differences between these two numbers. As listed earlier, WMU Library collections are approximately twice the size of those from CMU Libraries. There is a sizable difference in the materials budget between the two institutions as well, with the WMU overall materials budget being about $7 million for fiscal year 2010-2011, and the CMU budget being about $3.8 million (American Library Directory, 2010).

Differences in budget and size aside, at both institutions we observed the strong push toward library-owned materials that was noted in the literature review; the e-reserve items owned by our libraries far outweigh those files generated by faculty members. Placing those materials on electronic reserve which the library already owns — either outright or through licenses which allow that use — saves a great deal of time and money spent in acquiring copyright permissions. While convenient for the libraries, however, it does not appear that we are “forcing” faculty into using our collection items; a good portion of items on e-reserve NOT owned by the libraries: 12% at WMU and 21% at CMU (see Table 4). The data shows that our faculty clearly have the option to request whatever materials they choose for electronic reserve. So although we do have some room to improve, it does seem that our acquisition selections are serving the needs of our distance users in the e-reserve context.

Looking at the breakdown by format, we can now answer our original questions about what kinds of materials constitute our e-reserves. As also seen from the institutions we examined in our literature review, we found that book sections and periodical articles accounted for the vast majority of the items on e-reserve at both schools. CMU has roughly equal numbers of book sections and articles while WMU had about 10% more articles than book chapters (see Table 3).

The next most predominate item type for WMU was instructor files followed by reference entries. For CMU, the next most predominant types were instructor files followed by e-books; it seems that instructor-generated content—though giving way to library-owned materials—still has a significant place among e-reserves. The small number of websites on e-reserve for both institutions may be explained by the
fact that websites are very easy for an instructor to include as links in an online course shell, and so they may choose to use that option for these resources rather than include them in reading lists for e-reserve. This may also be a partial explanation for the small number of multimedia items, which instructors may instead choose to show either in person or via an online lecture format.

With the shift in recent years toward electronic collections it is somewhat surprising that such a large portion of e-reserves for both schools are still coming from print collections. At WMU 43% of the items from the library collections were scanned from print originals; the corresponding number from the CMU collection was 33%, and although electronic collections items were the majority here, it was not by a very large margin (see Table 4). This is likely to be due in part to faculty members’ desire for book sections in particular to be placed on e-reserve as a part of their curriculums. Unlike periodical articles, many books are not yet available electronically; we will see this again as we take a closer look at publication date for our e-reserve materials and the number of print book sections should be examined with this in mind. The relatively small number of e-books in both sets is quite noteworthy in this case, as well. For both schools this number was less than 3%. Although e-books are a convenient format for distance learners, it does not appear that they are heavily used by instructors at our institutions at this point in time. Again, this may be due in part to many books—especially older titles—being currently unavailable electronically.

Examining the citations for periodical articles on e-reserve in more detail shows that most of these came from scholarly sources (see Table 5). The percentages of peer-reviewed to non-peer-reviewed sources were nearly identical between the two institutions. Considering many of our academic programs are more practitioner-type fields such as business, nursing, and education, it may follow that trade journals are an important source of information for these students, and this may explain the quarter of periodical articles that were found to be from non-scholarly publications.

In order to get a sense of the currency of the materials on electronic reserve, the median publication date was calculated for the most predominant formats: book sections and periodical articles. Table 6 shows that for WMU this date was 2000 for book sections and 2004 for periodical articles; the corresponding dates for CMU were 1999 and 2003. These dates were somewhat surprising, especially for periodical articles since one might expect journal literature assigned to classes to be more current. Students are often told that they may not use sources in a paper that are more than a few years old; however, it does not appear that teaching faculty follow that rule themselves. Reserves staff at both institutions report that a number of instructors use the same materials semester after semester, so as time goes on the assigned materials are getting older, and are not updated to reflect more recent published research.

**Next Steps**

Gathering and analyzing the e-reserve data for this project gives us a baseline to conduct further research. Obviously our samples only represent a very small period of time: one semester. Some of the results may be peculiar to this one semester and the individual courses that were offered. The results would be more meaningful if they could be gathered over time to see if there are changes in any of the categories, or if any long-term trends can be ascertained. While Central and Western Michigan Universities are similar institutions in many ways, it would be valuable to compare our results with other institutions of different sizes, types, and locations.

Another logical next step would be a more in-depth analysis of the items which came from outside of our library collections. If these items are assigned for courses being offered, why are these materials not in our collections? After a superficial glance through some of these titles, it appears that many of these items come from resources that fall outside our collection development guidelines. For instance, some of the book sections on e-reserve at Western Michigan University come from textbooks, which are specifically excluded from WMU collection policies. Some of the periodical articles from titles not owned are more appropriately classified as “newsletters” or more popular type of literature that are ordinarily not collected; even some of the scholarly materials may be from outlying titles that could have been dropped somewhere in the serial review process. Of course, neither institution will likely ever be able to buy
everything an instructor wants to use for a class, but further analysis of these resources can shed light on collection gaps which could be filled.

The relative age of the materials on e-reserve, particularly for journal literature, is informative particularly for information literacy efforts. Faculty are among the most challenging of our patron groups when it comes to information literacy. While faculty members emphasize currency of research in most fields, this is not reflected in their course reading lists. They may find it difficult to keep up with changing interfaces of the core databases in their field, and may not be keeping up with new resources that are available. However, our data shows us that we do need to find better methods of reaching teaching faculty to assist them with updating aging reading lists for their courses. Librarians may consider further efforts at outreach to faculty to show them how to access more current journal literature and other research in their fields. An example of this could be RSS feeds on the library website which show new articles from heavily-used periodical titles, or new books added to the library’s collection.

**Conclusion**

Analysis of materials placed on e-reserve provides a useful lens through which to view how well our collections are serving our students, particularly our distance learners. Virtually all academic libraries are being forced by decreasing budgets and decreasing buying power overall to make each purchasing decision as carefully as possible. Items placed on e-reserve by faculty represent items that have been found to be valuable in support of curricular goals for classes being taught and therefore provide an excellent tool for analysis. Our study of items placed on e-reserve at Western Michigan University Libraries and Central Michigan University Libraries showed quite similar results between the two institutions. Overall, the majority of materials are in fact coming from our library collections. Selections from books and periodical articles account for the vast majority of the citations faculty request for readings for their courses. While our collection policies in recent years have turned toward less traditional materials including e-books, open access journals and multimedia materials, these items do not seem to be represented in any significant numbers of our e-reserves materials as of yet. However, our Libraries’ efforts in making our materials available electronically (either by scanning print items or using electronically licensed materials) is clearly having an effect on how students and faculty use our collections. As these e-formats are particularly convenient for online and off-campus learners, it will be interesting to see how the types of materials placed on e-reserve evolve as more and more information becomes available online, which can only benefit our increasing numbers of distance users.
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Electronic books are evolving at a dizzying pace, challenging academic librarians to keep patrons informed about the growing number of features of these resources and their various and varied limitations. It sometimes seems as if students are pleasantly surprised by the ease with which electronic books are accessible as often as they are frustrated by e-book features that do not satisfy their needs. Librarians receive such feedback readily from local students; distance students’ perspectives are more difficult to keep track of. Pepperdine University Librarians surveyed graduate distance students about their experiences and preferences regarding electronic books. Findings reflect prior studies’ data in terms of desired features, despite the fact that such features actually are available to a great extent. Surprisingly, participants ranked book topic areas and usage preferences identically for both electronic and print books. Answers to the questions posed in the article title are mixed: yes and no.

Introduction

According to a 2011 Book Industry Study Group survey, e-book readers are using Amazon more than ever to purchase electronic books (Milliot, 2010a). Meanwhile, their data showed that e-book readers’ print purchases continue to decrease (Milliot, 2010b). Further emphasizing the surge of interest in e-texts, Jones (2011) reported from the Digital Book World Conference in January 2011 that many U.S. publishing executives are “expecting digital to overtake print sales by 2014” (p. 6). Confirming profound growth expectations, the eMarketer June 2011 report on e-publishing lists the following industry highlights: “Worldwide tablet sales will soar to 81.3 million units in 2012, nearly doubling the 2011 total of 43.6 million. Also, tablets are on an aggressive growth track, with projected unit-sale increases of 178% in 2011 and 87% in 2012.” (p. 6).

It is clear that the publishing industry is undergoing a revolution of sorts, however, this trajectory has continued for decades. Libraries, consequently, have already been sharing the experience of this transformation for as many years. Electronic books were developed in the 1980’s, and by the early 1990’s libraries typically included e-books on CD-rom in their collections. Back then the titles were less useful for individual consumers and book lovers because they were largely encyclopedic works and needed to be viewed on desktop computers (Barker, 1992). The data noted above shows that, today, a relatively inexpensive e-reader (equivalent to the cost of a few hardback print books) is owned by hundreds of thousands of readers, all of whom will presumably purchase numerous electronics books, ranging from cookbooks to bibles to murder mysteries (eMarketer, 2011; Kelley, 2011; Millot, 2010a, 2010b; Mintel, 2011).

The e-reader sales figures and projections tell an important story about accelerated tablet e-reader adoption. This format, however, is only one of many in the complex and complicated electronic book product market. Academic library collections today typically include several thousands of e-books, either purchased or leased from numerous different publishers and available via various vendor platforms. The different vendor platforms offer roughly similar features, such as highlighting text and making notes in the margins. Recently, they have begun offering experimenting with downloadable applications to enable the viewing of books on iPads and smartphone devices. Tech-savvy patrons may wonder, however, why they are unable to load such books into their Kindles or Nooks. In fact, at the Pepperdine graduate campus reference desks we have for many years received questions from patrons about the functionality of library
collection e-books. Primarily these questions have surrounded: 1) the ability to download entire books to laptops; 2) the possibility of printing chapters, or even the entire volume; and 3) if the book always will be available (can I stay logged in indefinitely?). The answers we’ve been able to provide to these questions have, for the most part, not been satisfactory to our faculty and student patrons.

As the Kindle and Nook technology get easier to use and more widely adopted, patrons logically expect the same ease of use for library collection e-books. Of course, this is not exactly true. Marilyn Farkas (2011), author of *Social Software in Libraries: Building Collaboration, Communication and Community Online* as well as the monthly column “Technology in Practice” for *American Libraries*, writes in her blog, *Information Wants to Be Free*, “Getting an e-book from a library is often a circuitous and confusing process; so confusing that libraries have to create tutorials on how to do it. This doesn’t even take into account the myriad of interoperability issues when patrons want to actually read a library e-book on their mobile/e-reader device” (Farkas, para. 4). Ebrary recently repeated their 2008 Global Student E-book Survey and initial conclusions from the data suggest that “patron awareness of e-books has not increased significantly over the last three years, and reported usage of e-books has not increased significantly either” (Ebrary, personal communication, December 7, 2011). This is both significant and unsurprising. In their 2011 article, librarians Sheila Konen, Mary Vanderlinde, Nancy Mires, and Christine Lind Hage describe 12 different websites/organizations/projects that offer free access to electronic books. Although there are similarities among the sites, each offers its own unique mix of features and usage protocols. It is unlikely that many patrons would be interested in, or able to, spend the time learning about the functional differences between e-readers, library e-collections, and additional dozens of different websites offering electronic books.

In his 2010 article, James Buczynski unambiguously communicates relevant concerns, even in the title: “Library e-books: Some Can’t Find them, Others Find Them and Don’t Know What They Are” (p. 11). He writes, “Consumers are confused as to why titles are available for one e-book reader and not another, one retailer and not another, why some can be downloaded and some cannot…e-book reader marketing hype has blinded readers to the fact that a book is still a book, whether it is in print/paper, online, or accessible from the multitude of display and audio electronics available” (pp. 11-12). Farkas agrees by stating that, “…patrons won’t understand why you can download this e-book, but not this one, or why this one will let you print, but this one will stop you at 5 pages” (para. 10).

As a result, e-book user surveys proliferate with good reason. All librarians gain additional and important insight each time new findings about the medium’s usage patterns are discovered. Still, though studies have been conducted in different university settings worldwide, it is essential for librarians to understand the needs and preferences of their respective, unique populations. Moreover, the e-book market is evolving with enormous rapidity, demanding continuous and frequent examination of the user perspective. Pamela Grudzien and Anne Marie Casey (2008) specifically call for further study of student e-book usage patterns and satisfaction with e-book platforms. (p. 465).

**Pepperdine Environment**

Pepperdine University is a medium-sized university with a total enrollment of 7,539 students. The two main graduate programs of this study, the Graziadio School of Business and Management (GSBM) and the Graduate School of Education and Psychology (GSEP) have a total enrollment of 3,455 students for the academic year 2011-2012. Both schools have distance learning programs that utilize a number of library resources off-campus. In GSBM, there is the Masters of Organizational Development with an enrollment of 65 students and the Presidential and Key Executive MBA programs with 45 students in 2010. Some of the distance learning programs in GSEP are Masters in Education Teaching with 16 students and Masters in Social Entrepreneurship and Change with 24 students enrolled in 2010. GSEP also has the following Doctoral programs: Ed.D in ELAP with 90 students, Ed.D in Educational Technology with 71 students, Ed.D in Learning Technologies with 31 students, and Ed.D in Organizational Change with 30 students enrolled in 2010. In total, both schools have 634 students enrolled in distance learning programs.
E-books at Pepperdine

The Pepperdine Library e-book collection has been growing steadily for the past few years to accommodate increased interest by the Pepperdine community and a shift in the library’s collection development policy to include more electronic books. The Pepperdine Library system provides access to a number of e-book collections from a combination of publishers and providers. In 2001, the Pepperdine Library subscribed to its first e-book collection through ebrary and a shared collection through the Statewide California Electronic Library Consortium (SCELC). The library currently offers the following seven e-book delivery platforms: ebrary, netLibrary, Academic Complete, ACLS Humanities, APA, Gale Virtual Reference Library (GVRL), and Oxford Reference Online.

According to eMarketer (2011), e-books are a small but rapidly growing component of the publishing industry with a revenue estimated at 3% of the total US e-books sales in 2010. The Pepperdine Library has a total of 551,502 volumes in its collection; 375,912 are books in print and 175,590 are e-books in the library's monograph collection. Most of the e-book delivery methods used by the Pepperdine Library, such as ebrary and netLibrary utilize a web based reader format that provides access to e-books via desktops or laptops by using PDFs or EPUB formats. The Pepperdine Library currently has access to over 50,000 titles that are leased (via subscription) from ebrary and a few thousand more have been purchased from netLibrary and a few other providers. E-book collections in the Pepperdine Library will continue to grow as the library builds a wealth of information through electronic books that are available in the library’s catalog.

Literature Review

The literature is rich with studies of e-book usage studies. We searched the Library, Information Science & Technology Abstract, and Library Literature & Information Sciences databases using the Boolean search (e-books or electronic books) and (academic libraries) and (study or survey). Limited to just the last five years (2007-2012), this search retrieved 99 articles. When we added “and (distance or distributed)” to the search string, however, the results dropped to only 10 articles. Given that online student enrollment “grew at a rate 10 times greater than total higher education enrollment in 2009: 21% v. 2%,” (Petrowski, 2010, p. 3) there is a need to continue examining the research patterns, including e-book usage, among this robust population. As mentioned earlier in this paper, because some of Pepperdine Library’s electronic book collections are included in the catalog in such a way that usage data cannot be separated out specifically for this format. Additionally, Lamothe (2010) pointed out that “publishers and aggregators do not report their usage statistics in any standardized way” (p. 4). As a result, research on and assessment of e-book usage, in general, continues to be an imperative. Because much of the literature has been referenced in the Introduction to this paper and is likewise referred to throughout the Findings section that follows, this literature review will simply summarize user e-book feature preferences and dislikes as reflected in prior studies.

Surveys consistently illustrate that, while loans of print materials have decreased in recent years, e-book usage among student populations is strong and growing (Barbier, 2007; Croft and Davis, 2010; Grudzien & Casey, 2008; Kelley, 2011; Lamothe, 2010; Nicholas et al., 2008; Ongoz and Baki, 2010; Shelburne, 2009; Weisberg, 2011).

Patrons have repeatedly demonstrated that the purpose or subject of books influences whether it is preferred in electronic form (Croft & Davis, 2010; Kelly, 2010; Nicholas et al., 2008; Rowland, 2007). Lamothe (2010) and Springer (2010), for example, found that reference material received proportionately high usage. Course readings have also shown to be popular e-book applications (Croft & Davis, 2010; Springer, 2010). Users have also pointed out that downloadability and offline use of electronic books is important (Barbier, 2007; Croft & Davis, 2010; Ongoz & Baki, 2010). Text highlighting, cutting and pasting, and writing notes have also been repeatedly reported as desired features (Behler & Lush, 2010; Croft & Davis, 2010; Ongoz & Baki, 2010). Printing of pages continues, as well, to garner demand, although somewhat less than the previously mentioned features (Croft & Davis, 2010; Nicholas et al., 2008).
Survey Methodology

With e-reader and tablet ownership surging in the last few years, consumer demand for e-books in a variety of subjects has grown significantly. Not only has Amazon sold more e-books than paperback and hardcover editions, but according to eMarketer (2011) the trend for e-readers and tablets will also continue to rise well into 2014. This technology adoption by consumers and the academic community highlights the importance of being aware of students’ experiences and expectations from the technology and the library resources.

The researchers of this survey chose a population of distance learning students that are currently using the library’s interlibrary loan resources. A list of students was compiled by Melissa Pichette, the library’s Interlibrary Loan Specialist, and was later reduced to only contain the participants that have self-identified in their ILL profiles as students enrolled in distance learning programs. From the list provided there are 183 students using interlibrary loan services, and only one hundred (100) students were possible candidates for the survey.

Qualtrics, a software tool licensed by Pepperdine University, was used to conduct, collect, and analyze the data gathered from the survey. The student email addresses were entered into Qualtrics and a link to the survey was generated and distributed to a hundred participants via emails. The emails were sent in late November 2011 and the survey was active for 17 days. The initial email was followed up by two email reminders, each of which increased survey rates and resulted in positive feedback from the participants. To assure confidentiality, the researchers explained in the consent letter that participant responses would be kept anonymous. No remuneration was offered. The survey (see Appendix) consisted of 17 questions about types of e-books, features, technology, and awareness of these products. Many of the questions were based on a survey that Rosie Croft and Corey Davis (2010) discuss in their article.

Findings

The Qualtrics survey was emailed to our 100 participants with two follow-up reminders. A total of 37 questionnaires were completed, providing us with somewhat more data than the average 30% of expected returns for emailed, web-based surveys (Shin & Fan, 2008; Sue & Ritter, 2011). No incentive was offered to participants and a two-week window was allowed for participants to reply. Each of the three emails collected a little over ten responses. Anonymity was guaranteed as the Qualtrics software stripped respondents’ email links from their completed questionnaires.

All 37 respondents were graduate students (including Master’s and doctoral students) with the majority, 67%, being in the Education department, along with 27% in the business school, and a handful, 8%, being psychology students (see Table 1). It is worth noting that Pepperdine University does not offer a distance learning program in psychology. The participants who self-identified as distance learners in this discipline were most likely PsyD students who have completed coursework and are now working on their dissertations while enrolled in internships far removed from campus and from Los Angeles. These students have not participated in online class sessions or used other technologies typically associated with distance learner programs. As a result, these participants may be less technology-savvy than the rest, and may have skewed the survey results. Most participants (59%) were female while 41% were male. We did offer a “skip this question” answer option for the gender category, however, all chose to answer this question.
Table 1

Student Survey Respondents by Program

<table>
<thead>
<tr>
<th>What program are you in?</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>24</td>
<td>65</td>
</tr>
<tr>
<td>Business</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Psychology</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Other (please name)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>100</td>
</tr>
</tbody>
</table>

In response to Question 4, “Please tell us about your electronic book usage experience (Check all that apply),” 67% reported using tablet readers such as the Kindle or Nook (see Table 2). The popularity of this format is described in the literature and in the eMarketer 2011 industry report, reflecting the widely publicized accelerated adoption of e-readers (Jones, 2011; Milliot, 2010a, 2010b). A somewhat surprising 39% expressed having read on hand-held devices such as the iPhone or Blackberry. This technology has not shown great popularity for the purpose of e-book reading in previous studies (Croft & Davis, 2010; Zimmerman, 2011). Moreover, participants in the present study (responding to question number 12) later expressed distaste for this diminutive screen. We were pleased to see that 50% have used electronic books discovered in the Pepperdine Library catalog. Librarians and publishers should note, however, that 16 participants, roughly 45%, also downloaded e-books from non-library sources such as Google Books, Project Gutenberg, and the National Academies Press. This raises the issue of challenges faced by librarians and book-lovers, researchers and library patrons (not mutually exclusive, of course) via publishers’ sites and e-book collections that are not technologically compatible with online catalog software. Because of this incompatibility, a growing number of electronic books cannot currently be included in any library collections. Additionally, we wondered if participants were aware of the free, downloadable apps for the iPad made available by Kindle and Barnes & Noble. This software effectively transforms the iPad into a tablet reader, albeit one that requires an internet connection. Finally, we found that an extremely small, 14% of participants had never used an electronic book.

Table 2

Types of Electronic Books Used

<table>
<thead>
<tr>
<th>Have you used any kind of electronic book? (Check all that apply)</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Via eReader such as Kindle or Nook?</td>
<td>24</td>
<td>67</td>
</tr>
<tr>
<td>On a hand-held device such as iPhone or Blackberry</td>
<td>14</td>
<td>39</td>
</tr>
<tr>
<td>Downloaded an e-book online via a library catalog (Pepperdine or other)</td>
<td>18</td>
<td>50</td>
</tr>
<tr>
<td>Google Books</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Other, please describe</td>
<td>6</td>
<td>17</td>
</tr>
<tr>
<td>Have not used electronic books</td>
<td>5</td>
<td>14</td>
</tr>
</tbody>
</table>

Responses to Question 6, “What drawbacks have you encountered with e-books? (Check all that apply),” were not surprising given results from prior similar studies. Twelve students, 38%, have found a shortage of books on relevant topics. This perspective was further supported by comments added to the “Other; please describe” answer option. One student wrote, “It’s a frustration when professors select texts which are not available in e-book format. This is especially problematic for student [sic] in the GAP program (“Global Access” doctoral program in Organizational Leadership) who must travel with heavy texts.” Students in this program meet face-to-face twice per term at Pepperdine’s West Los Angeles campus with the exception of one session that takes place in Washington DC and one “international
Twenty participants, 63%, remarked that the lack of notetaking/highlighting was a particular drawback of e-books. This response can be interpreted in a few ways. If respondents are referring to the Kindle or Nook reader software, in recent versions it is possible to both highlight and make notes. Library collections’ Ebrary and Netlibrary platforms allow both functions as well. This is not true, however, of Google Books and a variety of other web-based book collections (Konen et al, 2011). Consequently, the participants may be referring to the latter technology or they are communicating a lack of awareness of e-book features available in formats they actually use. One participant’s comments, “From the library, I seem to not do it right and end up [sic] with nothing” reveals frustration with the varying formats. Considering the title of this article, the student’s remark suggests that he or she is not keeping up with the multitudes of issues in the e-book revolution.

Two comments reflect unequivocal allegiance to print, “Prefer convenience of paper,” and “I like paper copies,” while a third illustrates gray-area distinctions: “Expensive equipment to be reading at the pool/beach. Harder to share with a friend. Putting a book on my shelf, loaning to a friend is harder.” The latter remark could easily be interpreted as personal preference or “not keeping up” since most of these activities are possible, to an extent, electronically. Related comments suggest basic technology issues getting in the way of reading with “Sometimes won’t boot,” and “Lack of power or dead battery just when you need it.” We might conclude that these last two respondents prefer print items that don’t require electronic connections, though the observations may simply reflect everyday annoyance with common technological failures.

Finally, the following comments reveal drawbacks voiced in other studies. These include, “Not all pages viewable (Google),” “Limited in textbook/schoolbook,” “Navigation. Ideally, I just wanna [sic] be able to download pdf chapters for my educational reading (pleasure is another matter entirely),” and finally, “Printing relevant pages.” These issues, printing, offline access, and relevant topics, will be discussed in-depth later in this paper.

Question 8, “If it was up to you, how do you prefer to use an e-book? (Check all that apply)” revealed that most participants, 56%, preferred the tablet or iPad format (see Table 3). As in prior studies, only a small minority, 5 respondents or 14%, were fond of the handheld, smart-phone technology for this purpose. A majority, 53%, again reflected in the literature, want to be able to print out portions of the text. A strong portion of participants felt that the topic or purpose of the book was significant in terms of usage; 47% selected the category “Depends on the type of material or the purpose for which I need the book (for example pleasure reading vs. academic or research).” Both librarians and publishers should find this point interesting for collection development and e-book topic publishing. We hasten to point out a caveat: this suggestion should be considered in view of puzzling responses we received to the next two questions. As a result, this is an area in which we recommend further research.
Table 3

E-book Preference

<table>
<thead>
<tr>
<th>If it was up to you, how would you prefer to use an e-book? (Check all that apply)</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>On my iPad or similar tablet device</td>
<td>20</td>
<td>56</td>
</tr>
<tr>
<td>On my smartphone</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Print out some pages or chapters of the book</td>
<td>19</td>
<td>53</td>
</tr>
<tr>
<td>On my laptop</td>
<td>19</td>
<td>53</td>
</tr>
<tr>
<td>On my Kindle reader (excluding Kindle Fire) or similar</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>I do not like to use e-books.</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Depends on the type of material or the purpose for which I need the book (for example pleasure reading vs. academic or research)</td>
<td>14</td>
<td>47</td>
</tr>
</tbody>
</table>

Questions 9 and 10 aimed to elicit information about what respective purposes print and online books served, respectively, for our participants. The options were the same for each category, as Tables 4 and 5 reflect. Curiously, however, participants rated the topic categories by and large the same for the two formats. Respondents indicated they used electronic books 85% for academic/research/school purposes. Likewise they chose print books 82% for the same category. Seventeen students used electronic books for pleasure reading at home; 16 used print publications for this activity. Electronic cookbooks were selected by six participants, while print cookbooks were chosen by seven. The greatest difference appeared for pleasure reading while traveling; e-books were preferred by 58% and print by 36%. Very few participants overall indicated usage of travel guides in either format. The general tally within each book format was also strikingly similar. An overwhelming majority selected academic/research/school materials, and the percentages became smaller in a notably similar pattern thereafter. Earlier participant comments suggested that the purpose or subject of books influenced the choice of format. These responses confuse this message, however. As mentioned earlier, further research is recommended to clarify these points. Finally, one write-in response in this section repeated a comment made earlier. Print books were preferred, the student remarked, “when reading multiple books at one time.”

Table 4

Use of E-book types

<table>
<thead>
<tr>
<th>What types of e-books do you use? (Check all that apply)</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic/research/school</td>
<td>28</td>
<td>85</td>
</tr>
<tr>
<td>Technical manuals</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Cookbooks</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Pleasure reading at home</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td>Pleasure reading while traveling</td>
<td>19</td>
<td>58</td>
</tr>
<tr>
<td>Travel guides</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Other, please explain</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>
Table 5

Reasons for using Print Books

<table>
<thead>
<tr>
<th>When do you prefer to use print books? (Check all that apply)</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic/research/school</td>
<td>27</td>
<td>82</td>
</tr>
<tr>
<td>Technical manuals</td>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>Cookbooks</td>
<td>7</td>
<td>21</td>
</tr>
<tr>
<td>Pleasure reading at home</td>
<td>16</td>
<td>48</td>
</tr>
<tr>
<td>Pleasure reading while traveling</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td>Travel guides</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Other, please explain</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Question 11, “How much time can you spend reading on a screen? (Please select only one)” reveals that the majority of respondents can read an electronic screen for at least an hour. Half of those participants are able to attentively eye a screen indefinitely or, “Forever,” as the answer selection describes. Given that a common complaint about e-readers concern screen glare, this finding is impressive. Elsewhere in this survey, in fact, concerns about screen discomfort are noted. A write-in response to Question 12, reflected a participant’s sensitivity to screens that “emit a glare.” In Question 6, an e-book drawback, specifically written in, clearly described that the student doesn’t “like to read on screen [sic] for a long period of time.” Furthermore, the question examining levels of screen comfort/discomfort was included expressly because we have anecdotally heard remarks among Pepperdine students complaining about screen fatigue. One may expect, perhaps, that a population of distance students, largely reliant on electronic tools to connect with colleagues, faculty, and the university (not the least of which is library resources) would be more tolerant of technology idiosyncrasies. As such, the finding deserves highlighting.

Equally notable, as mentioned earlier, is the fact that five participants consistently dismissed e-book technology. For this question, 15% of participants are willing and/or able to read only 15 minutes or less on the screen. Admittedly, three respondents did not complete this question, as well as some earlier questions. Regardless, the thread of approximately five participants considering the e-book format unpalatable remains remarkably stable throughout the survey responses.

Responses to Question 12, “On what type of screen do you prefer reading? (Please select only one)” reflected prior research. No participants preferred reading on a tiny, smartphone-sized screen. Though responses to prior Question 8, “If it was up to you, how would you prefer to use an e-book?” turned up five participants willing to read books on the smallest option of readers, this may not signal users’ favorite format. For Question 8, students were allowed to check “All that apply.” As a result, they may have communicated a willingness to use whatever technology may be available. Most responses selected to Question 12 reflected preferences consistent with the clear market popularity of the tablet sized reader (Emarketer, etc.). Choices, “A somewhat larger screen- like a Kindle,” and “An iPad screen” were selected by 40% of the participants. The laptop format (13 to 17 inches) was popular with slightly more than a fourth (26%) of students, suggesting the need for Kindle and Nook-type software for traditional computers. Likewise, slightly less than one fourth of respondents (24%) to Question 12 expressed preference for a large sized screen, suggesting that the tablet size is not for everyone. The latter finding further validates the call for flexibility in tablet–reader software.

Question 13, “In the last few years (Check all that apply),” most clearly revealed evidence to answer our two key questions as captured in the title of this article: “Are students keeping up with the e-book evolution?” and “Are e-books keeping up with students’ evolving needs?” Most students, 52%, felt that e-books have gotten easier to use, and many, 42% believe that e-book features have improved (see Table 6). These findings suggest that e-books are evolving to some degree in concert with student needs and preferences. However, 33% of participants indicated that they themselves had gotten better at using
the e-book medium. This response communicates that the students perhaps had not noticed changes in features, and instead assumed the onus was on them to wrestle with the tools and improve their skills. Apologists for the technology, this group of participants may not be critically assessing the resources and are thus not keeping up with the technology. There is a possibility that participants could have both indicated that improvements had taken place and believed that they, themselves, had become more adept at using the technology. Because there isn’t any clear evidence to support such an assumption, we chose to interpret the findings in the most obvious manner. Similarly, 27%, a bit more than one fourth of the students, have not noticed any changes in e-books, for all practical purposes admitting that they are “not keeping up” with the changing e-book media. Finally, three participants, staunch anti-e-book individuals, stated that they “would not use e-books regardless on changes or improvements.” This 9% of participants are not keeping up with technology changes because they have no intentions of, nor interest in doing so.

Table 6

E-book Technology

<table>
<thead>
<tr>
<th>In the last few years (Check all that apply)</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-books have gotten easier to use</td>
<td>17</td>
<td>52</td>
</tr>
<tr>
<td>E-book features have improved</td>
<td>14</td>
<td>42</td>
</tr>
<tr>
<td>I have gotten better at using E-books</td>
<td>11</td>
<td>33</td>
</tr>
<tr>
<td>I have not noticed any changes in E-books</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td>I would not use E-books regardless of changes or improvements</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

Responses to Question 14, “E-book features: I would use e-books if (check all that apply),” offer further data to answer our overarching questions. The first two choices, “I could highlight text onscreen,” and “I could make notes on the pages,” collected 71% and 66% of participants respectively (see Table 7). Because many of the e-book formats and platforms either now offer these features or have done so for some time, we viewed this as further evidence that students are not keeping up with e-book changes. Admittedly, some technologies, such as Google books and various PDF book collections do not offer these features. There is no indication that the responses distinguished between the various formats, however. Furthermore, the “Other, please specify” choice for this question allowed participants to write in additional comments, and no remarks clarifying these responses were made. Responses 4 through 6, all selected by the majority of respondents, reflect frustrations with e-books found in earlier studies. “I could print everything I wanted to read,” collected 51% of respondents, “I could email text to myself,” was chosen by 54%, and “I could read books offline,” was favored by 66% of the students. An impressive 71% wanted to see e-books offer “post-it like technology.” Publishers might want to make note of this! Many participants, 43%, wanted 24/7 availability for e-books. Though this is true for Kindles and Nooks, library collections are many times limited to a single user and books become unavailable when “checked out” to another patron. Additionally, some platforms automatically check books back in after a specific period of time, such as 24 hours, also limiting availability of the titles. This complaint has been reflected in previous studies as well. The one person who wrote in a comment for this question remarked, as we’ve seen earlier, that they wished e-books, “covered topics I was researching.” Finally, two participants chose “Nothing could make me want to use e-books.” Three participants did not answer this question. It is possible that those three were the other participants who earlier stated that they had not and did not want to use e-books.
Table 7

Preferred E-book Features

<table>
<thead>
<tr>
<th>Ebook features: I would use e-books if (Check all that apply)</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I could highlight text onscreen</td>
<td>25</td>
<td>71</td>
</tr>
<tr>
<td>I could make notes on the pages</td>
<td>23</td>
<td>66</td>
</tr>
<tr>
<td>I could tab pages with post-it like technology</td>
<td>25</td>
<td>71</td>
</tr>
<tr>
<td>I could print everything I wanted to read</td>
<td>18</td>
<td>51</td>
</tr>
<tr>
<td>I could email text to myself</td>
<td>19</td>
<td>54</td>
</tr>
<tr>
<td>I could read books offline</td>
<td>23</td>
<td>66</td>
</tr>
<tr>
<td>Available 24/7</td>
<td>15</td>
<td>43</td>
</tr>
<tr>
<td>Other, please explain</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Nothing could make me want to use e-books</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

Participants’ responses to Question 15, which examined what portion of an electronic book students typically read, were consistent with findings from prior studies. Most students, 65%, selected “I read one or more chapters,” or “I read parts of chapters that are relevant to my topic.

Conclusion

In terms of the overarching questions reflected in the title, “Are students keeping up with the e-book evolution; are e-books keeping up with students’ evolving needs?” answers are mixed. To some degree, students appear to be keeping abreast of the e-book revolution and demonstrate awareness of changing features. Many however, clearly are not aware of the transformations taking place with the electronic books medium. The findings are mixed because students are not aware of all the features, however, there are such an extensive number of e-book formats available via the library and beyond that "keeping up" is challenging, even for librarians. As such, we have observed that e-books are, likewise, only partially keeping up with student needs. Some features make users very happy, while the lack of other features, the dizzying array of platforms, technologies, software and constant changes create a type of resource that in practice is unknowable.
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Dear Pepperdine Student

My colleague (Lizette Gabriel, Information Services Librarian & Liaison Librarian to the Pepperdine’s Graziadio Graduate School of Business and to the Graduate School of Public Policy) and I (Maria Brahme, Information Services Librarian & Liaison Librarian to the Graduate School of Education and Psychology) want to thank you for your consideration in participating in this study. With this letter, we are providing information regarding your participation in this study. We are conducting research on Pepperdine Distance students’ familiarity with, usage of and preferences for electronic books. Specifically, we will be exploring the frequency of e-book usage, favored features of this technology, and likewise, e-book features distance students do not like.

Your name has been selected because you have been identified as a student who has made use of the library’s Interlibrary Loan services. This indicates to us that you have familiarity with library resources, and that you will be a helpful source of information related to our study.

Your participation in the data gathering process entails completing an online survey of less than 10 minutes’ duration. The survey consists of 15 multiple choice questions, with options to write in additional responses as well. A number of steps will be taken to protect your identity. The questionnaire will not ask about any information that could be used to identify you. Once the survey has been completed and submitted, any connection with your email or identity will disappear or be removed.

The potential risk of this study is minimal. There are no known risks at this time. Discomfort associated with this study is no more than that experienced during the normal course of a day. The potential benefits of your participation include providing relevant data to the field of research in higher education and information & library studies, to Pepperdine University Libraries and to library institutions of higher education in general.

Participation is voluntary and you are not compensated for your time. Additionally, since this is a completely voluntary process, you may elect not to participate or elect to participate and later withdraw with no consequences. Neither participation, lack of participation, or withdrawal from the study will affect your class standing, grades, or job status.

The investigators will take reasonable measures to protect the identity of the participants. The investigators will be responsible for safeguarding the records and all documents will be placed in a locked cabinet. The confidentiality of the records will be maintained in accordance with applicable state and federal laws. If you have any questions, please contact Dr. Maria Brahme at (310) 568-5686 or by email at maria.brahme@pepperdine.edu. You may also contact Lizette Gabriel, at 310 506-8564 or via email at lizette.gabriel@pepperdine.edu.
Your affirmative response to our emailed request for your participation is indication that you have read this letter and that you understand to your satisfaction the information stated above regarding your participation in this study. Your inquiries have been addressed and you have received a copy of this informed consent form which you have read and understand. You hereby consent to participate in the research described above. Once again, thank you for your willingness to participate in this study. Your time is greatly appreciated.

DISTANCE STUDENTS AND E-BOOKS SURVEY

1. What program are you in?
   - Education
   - Business
   - Psychology
   - Other (please name)

2. Are you a
   - Graduate student
   - Undergraduate student

3. Please indicate your gender:
   - Male
   - Female
   - Skip Question

4. Please tell us about your electronic book usage experience

5. Have you used any kind of electronic book? (Check all that apply)
   - Via eReader such as Kindle or Nook
   - On a hand-held device such as iPhone or Blackberry
   - Downloaded an e-book online via a library catalog (Pepperdine or other)
   - Google books
   - Other, please describe
   - Have not used electronic books
6. What drawbacks have you encountered with e-books? (Check all that apply)
   - I have not found e-books available on relevant topics
   - Lack of notetaking/highlighting ability
   - Problems with the screen
   - Other, please describe

7. When was the last time you used or tried to use an e-book
   - A week ago or less
   - A month ago or less
   - A year ago or less
   - Cannot remember
   - Never tried to use

8. If it was up to you, how would you prefer to use an e-book? (Check all that apply)
   - On my iPad or similar tablet device
   - On my smartphone
   - Print out some pages or chapters of the book
   - On my Laptop
   - On my Kindle reader (excluding Kindle Fire) or similar
   - I don’t like to use e-books
   - Depends on the type of material or the purpose for which I need the book (for example pleasure reading vs. academic or research

9. What types of e-books do you use? (Check all that apply)
   - Academic/research/school
   - Technical manuals
   - Cookbooks
   - Pleasure reading at home
   - Pleasure reading while traveling
10. When do you prefer to use print books? (Check all that apply)

- Academic/research/school
- Technical manuals
- Cookbooks
- Pleasure reading at home
- Pleasure reading while traveling
- Travel guides
- Other, please explain

11. How much time can you spend reading on a screen? (Please select only one)

- A few minutes or less; I don’t like to read on a screen
- 15 minutes or less
- 30 minutes or less
- An hour or less
- More than an hour
- I have no time limit; can read forever on a screen

12. On what type of screen do you prefer reading? (Please select only one)

- A small screen-like a smartphone
- A somewhat larger screen-like a Kindle
- An iPad screen
- A laptop (13-17 inches)
- A large desktop computer screen
- As large as possible
- As large as possible but lightweight and handheld
- Size is irrelevant; must be lightweight
• Size is irrelevant; weight is irrelevant
• I don’t like reading on a screen at all
• Other, please specify

13. In the last few years (Check all that apply)
• E-books have gotten easier to use
• E-book features have improved
• I have gotten better at using e-books
• I have not noticed any changes in e-books
• I would not use e-books regardless of changes or improvements

14. E-book features: I would use e-books if (Check all that apply)
• I could highlight text onscreen
• I could make notes on the pages
• I could tab pages with post-it like technology
• I could print everything I wanted to read
• I could email text to myself
• I could read books offline
• Available 24/7
• Other, please explain
• Nothing could make me want to use e-books

15. Most of the time, when I read an E-book…
• I read the whole book
• I read one or more chapters
• I read just one chapter or less
• I read parts of chapters that are relevant to my topic
• Other, please describe
• I don’t use e-books at all
16. How pleased are you with current E-book technology?

- Very pleased-I love e-books
- Overall pleased-there are a few glitches
- Neutral-could be better could be worse
- Somewhat displeased-the technology is more flawed than it should be
- Very displeased-I dislike using e-books
- Don’t know or don’t use e-books

17. What primarily frustrates you about E-books? (Check all that apply)

- No problems-I’m happy with the technology
- Cannot print out all the pages I want
- Not enough titles on my topic
- Sometimes a book I want is in used and I cannot login
- Cannot get all of them on my iPad or smartphone
- Want to be able to use them offline
- I want to be able to copy and paste text
- Other, please specify

18. Thank you for completing this survey!!
Collegial Librarians: The Faculty-Librarian-Student Partnership in Distance Education

Kent Carrico
Ariel Neff
Benedictine University

Distance librarians working with graduate programs often discover many of their students have specialized information needs and require additional instruction. However, it can be impossible to discover these students without first becoming deeply involved with the program. Librarians at Benedictine University have developed a method for becoming professional colleagues with graduate faculty, which begins with identifying opportunities to form relationships with them and becoming involved with new programs. The second step is orientation, involving social contact and personalizing the librarian-student relationship, allowing students to realize their librarians are part of the community of engaged experts that they can draw upon. Step three is to develop an individual counseling/coaching relationship with those students who need additional mentoring. Distance services librarians can become empowered to act as instructional partners with both faculty and students through this personalizing approach to the research process.

Introduction

Distance services librarians all share a common goal: finding the best possible methods to provide distance learners with high quality library resources and assistance. Blended or online, in-person or virtual, this goal remains the same for all librarians serving clientele off campus. Graduate students in distance programs provide an even greater challenge for the librarian; doctoral candidates have extremely specific research needs and very high expectations. These bright students come from very different backgrounds, and often a few students will need more specialized assistance than others. When pursuing their overarching goal, distance librarians have been able to find virtual and traditional methods to reach students in graduate courses and meet their information needs, to an extent. Without personalized reference services, many high need graduate students will not be able to complete their degrees. This paper will discuss how librarians can reach individual graduate students by becoming instructional partners with program directors and instructors. Without this partnership and collaboration, only more general library instruction will be available to distance cohorts, and many students will be underserved.

Background

Reaching out to faculty has been shown to be one of the most difficult tasks for the distance librarian. In a study by Yang (2005), many distance librarians expressed their “frustration with not knowing...who teaches distance education courses” (p. 94) at their institution. The decentralized nature of most distance education programs, as well as the frequent instructor turn-over within these programs, can make contacting faculty members and discovering new courses nearly impossible for librarians. There is minimal information in the literature regarding how distance librarians can most effectively reach faculty, but after examining what has been published, the most commonly cited method is a proactive approach on the part of the librarian. Case studies have been published (Frank, 2001; Donham, 2004) which specifically call for the librarian to proactively engage faculty rather waiting for their invitation or taking a more passive, traditional liaison approach. Often, faculty and program directors find that they spend less time answering student research questions and that students generate higher quality work when a librarian is embedded in the program (Hoffman, 2011).

With recognition from the teaching faculty and program directors, the librarian will have more access to the distance learners within those graduate programs and can focus on their needs. The literature
has shown that students, even in online courses, desire some form of personalized individual guidance when completing research (Morrison & Krishnamurthy, 2008). Graduate students, especially those writing dissertations and lacking the structure of assignments and courses, can often feel lost in the research process; many do not wish to speak with their advisers about these issues and risk showing signs of weakness or ignorance (Cohen, 2011). The librarian embedded in their program becomes a ‘safe’ avenue to ask for guidance, vent frustrations, and act as a sounding board for dissertation ideas. Librarians become counselors, asking students open questions and spending more time listening (Fine, 1997). By providing an open, non-judgmental environment for graduate student to receive additional research assistance, distance services librarians can greatly affect the retention rate in these graduate programs. Students with more personalized experience in their programs usually stick with their institution through graduation (West, Gokalp, Peña, Fischer, & Gupton, 2011).

**Benedictine University**

Within the last decade, Benedictine University has experienced some great changes in its student population. Originally formed 125 years ago as a residential all-male Catholic college, Benedictine University was recently ranked by the *Chronicle of Higher Education* as the seventh-fastest growing campus in the country among private master's universities based on total head count between 2004-2009 (Student Demographics, 2011). The growth rate during that period tops out at 81% in only five years, and this growth is due to the explosion of online and cohort programs launched at the University. Once a 5,000 student liberal arts undergraduate college, Benedictine University now boasts over 10,000 students in 53 undergraduate majors, 13 master’s programs, and four doctorate programs.

The rapid growth in student population and burgeoning graduate programs are providing real challenges to all resources across Benedictine University, and equally so for the Benedictine Library. As higher education adapts to changing economic conditions, the growth of the Benedictine University student population did not translate into growth of the library professional staff. Service challenges posed were significant due not only to population growth, but by service delivery methods and strategies needed to provide on-campus, blended, and online only programs the same level of accessibility and service. Nowhere were these challenges and possibilities more compelling than in the development of new graduate curricula. We sought a foothold within this growing and changing body of programs to gain access to building library services not just from the outside, but internal to the programs themselves. To do so we devised a strategy of library service that would allow us to become more than a 60 minute afterthought to the process, loosely called our ‘three-step-plan of attack’:

1. **Step one** was to find opportunities to form relationships with program directors and curriculum developers as a way to become involved with new programs at the early stage within the institution (not an easy step historically)
2. **Step two** was the “getting to know you” phase, the orientation time involving social contact and personalizing the librarian-student relationship. It is here where students in need are introduced to their librarians as part of the community of engaged experts that they can draw upon
3. **Step three** was to develop an individual coaching relationship with those students who needed additional mentoring

The three-step-plan is a commonsense guide that allows a great deal of personal flexibility from one scenario to the next, but it requires a great deal of determination and imagination from the librarians as well as collegial reciprocation by the instructors. Finding opportunities where the library can become an integral part of the academic process is often easier when new members of the academic community have been recently hired to create programs or to improve upon existing ones. Both these scenarios were the case when the Benedictine Library Instruction team set its sights on becoming a key player in the developing graduate programs.

**Opportunities and Orientation**

“A time, condition, or set of circumstances permitting or favorable to a particular action or purpose” (Oxford English Dictionary, 2011)
The first opportunity we had as a library to actually get involved at a fundamental level with a graduate program was garnered when Benedictine University conceived of a Master of Science in Nursing online program and brought in a national-level accreditation evaluator and program planner to guide the vision. The professional hired for its creation and implementation was not only a well respected curriculum designer, educator, and licensed RN, but a trained on-site evaluator with the Commission on Collegiate Nursing Education (CCNE). Her goal was to have the program launched and the accrediting visit by CCNE completed within one year.

This accelerated pace of events pulled everyone connected with the process into its draft and as an expert in nursing program accreditation, the Program Director let it be known that she wanted to work closely with the library to provide critical program support during the building of the curriculum (A librarian’s dream is it not? - a curriculum creator who wanted the library involved as part of her process of creation). Within the first hour of our first meeting we came away with two key concepts: #1) That as a curriculum designer she was establishing rigorous content parameters for the program, but with an understanding of many of the challenges facing the not only distance learning students but, equally importantly, practicing nurses coming back to academics and the trials and tribulations that many would face; and #2) that the library had more to offer students than simply program-level support and digital tools, that it could provide a dynamic supportive space for providing a direct contact point for library help and for pushing outside syllabic content of individual courses.

We demonstrated how the library could provide course-level support for this new program via recently subscribed LibGuides pages and she was totally impressed with the possibilities of multiple content embedding. We also discussed the possibility of having virtual office hours for the program’s first-contact librarian to help students acclimate to the digital library, provide real-time services, and also to play a major role in the MSN program’s virtual orientation. A plan was forwarded for the initial launch to have all enrolled students meet the Program Director and be introduced to each other and the librarian virtually through Dimdim, conferencing software. During subsequent meetings with the Director while she was creating course content, we would discuss what kind of supportive and additional resources and ideas might be added to the LibGuides course pages to enhance the academic experience. Through the course designing process, tutorials and content were created and added that would guide students in becoming more comfortable with research and discover avenues of affiliated content not provided through the traditional course readings.

What became clear to us through the development of relationships with the launch of the MSN program and encouraged our desire to get more involved with other developing graduate programs was the sense that many graduate students were anxious and in great need of direct contact through the very early stages of their classes, and that much of the early anxiety of nontraditional graduate students was simply in not understanding and subsequently not believing they could handle the processes that stood before them (Lovitts, 1996; Gardner, 2008; Young & Brooks, 2008).

Although the results of the MSN Dimdim orientation experiment were not altogether successful (for many technical reasons), the collaborative approach used by the MSN Program and the Library would fuel the development of the graduate program-library partnerships to come, and did within a year’s time assist the MSN program to receive accreditation with the Commission on Collegiate Nursing Education. How we in the library reacted to the silent “illusion” (Lovitts, 1996, p. 16) of students’ anxiety and extreme need fueled the approach we took with newly revamped doctoral program Ed.D. in Higher Education and Organizational Change (HEOC), and would ultimately bring to us to the concept of approaching orientation as more than simply an overview of digital and physical resources, but as part of a larger social structure that provides a personal avenue into the often isolating graduate student experience.

Historically, library orientation for graduate programs coincided with the launching of a new cohort and traditionally consisted of a very general look at library resources and services. The re-imagined HEOC doctoral program was now being offered in two distinct ways: as a totally online program taken in eight week blocks using Desire to Learn (D2L), and the blended program meeting every third weekend on the Lisle campus for 16 weeks for the first two years of coursework with D2L augmenting the rest of class
time. Typically the library was always involved with the Ed.D. program at orientation and during the course of the program at the discretion of teaching faculty. But in conjunction with the new launch, the library wanted to become an integral part of the new HEOC program and sought out the new program director and his program developer - a former dean of Benedictine’s online and blended adult programs - to offer our services and input into the developing program. We wanted to be direct, professional, and persistent in our approach to meeting him right from the onset, reasoning that we would know quickly if he was a natural advocate for us and if not, we would reassess our strategy and try another approach.

Taking a direct sales-like approach into library advocacy gave us the confidence of patience (a virtue often tested in academe) that we would eventually achieve our outcomes (make the sale), and supported our sense of passionate purpose that we were providing a necessary, dynamic function to the academic mission of the University. In the case of the HEOC program, our initial foray contacting the Program Director was met with exuberance and planned continuous communication between us. It doesn’t always work that way, but in the case of the HEOC program the direct approach served us well by introducing the library to the new Program Director as a proactive entity with personalities and mutual interests. Our proactive approach allowed us to get to know a new program, the vision and energy behind its creation, and equally importantly to get a sense of the social context in which we hoped to be operating. By becoming more deeply involved at program level as opposed to simply targeting individual teaching faculty we were guaranteed, as much as could be, to meet the majority of incoming students for the on-campus groups. This approach also carries over to the online only program albeit in a less ubiquitous manner.

The new director was the type of leader that encouraged collegial ideas, thinking outside the box, and saw the library as a player in the development of the HEOC program, encouraging us to assist him in the realization of the new HEOC dual-delivery vision. We met with him and the curriculum developer to discuss how we would be able to best assist with the development of curriculum support via our LibGuides pages. It was clear from our conversations in person and through email, that the library was considered a critical component to HEOC students in large part due to digital tools teaching and understanding of the research processes. However, another more unique function for librarian usefulness was simultaneously developing through our practical experience and understanding of what graduate students were going through as returning students.

Most Benedictine graduate students are working adults who have often been away from the academic process for years and who exhibit many different levels of sophistication in the use of digital technology and academic writing and research. For the HEOC program, orientation became a time to create a personal face and voice for the library, to breathe our passion into the process about to unfold for the students. In the orientation, blended students came to campus for a weekend devoted to introducing them to the program, establishing relationships through meeting and greeting with the program heads and the members of the faculty, and perhaps even more importantly, creating a community amongst their peers, meeting one another, often for the first time, to begin their discovery of the social context of graduate education.

Orientation of online HEOC students provided us with a less obvious solution and was handled via created LibGuides pages and a specially developed Orientation or Greetings video recorded in Camtasia. New online students are guided via the HEOC program’s ongoing student communications through email and from D2L courseware to view the introduction or library orientation video coupled with direct contact information for the librarian performing in the video. Each orientation greeting is made specifically for each new launch and students, and produced in a way that allows for a spontaneous representation of the contact librarian’s personality, giving the viewer the sense that he or she knows the librarian prior to actually contacting them. This attempt to put personality and human form to online student support is another form of the ancient and time-tested advertising strategy of brand identity. Mo Saha (2011) of British creative agency PD3 discusses the importance of brand identity or personality and the need for that brand to be seen as genuine by members of a “disruption-savvy population” (p. 13). This form of outreach isn’t, perhaps, as impactful as an in-person orientation, due to the fact that it is not interactive, but anything one can do to personalize services for dispersed student groups are sure to have beneficial results for libraries as well.
Library Orientation is the critical time and opportunity for us to flex our supportive muscles and become a major part of the meet and greet. Why wait for problems to manifest themselves for students? Part of our mission is to anticipate the problems graduate students might have early on in adjusting to the life of a graduate student, and be ready to respond to these eventualities. Presenting a voice, a passion, a sense of humor, a willingness to assist in the process about to unfold, librarians become approachable first responders to the burgeoning new academic community being established.

This is what orientation is really about for us at Benedictine, not being satisfied with merely being a spoke on the wheel, but striving to be part of the circle, interconnected with all aspects of the graduate student’s process. When students need us to be mentors, for whatever reasons intrinsic to the students themselves, we attempt to be that listening, nurturing, collegial connection.

Counseling

The social context for graduate students is extraordinarily more than simply meeting the department, fellow students, and faculty advisers. The graduate landscape is often unfamiliar to students, much like it might be for a foreign visitor entering a new land without knowing the geography, language and culture about to be encountered. As librarians we have an amazing opportunity to assist the newcomer through the difficult transition period, at points when an objective, interested voice of reason may do more to encourage the continuation of the academic journey than anyone might imagine.

Phone calls on a Saturday night from Wasilla, Alaska and from an airbase in Northern Italy. A frantic text on a Sunday morning saying “Please call me, going crazy!” A graduate student arriving for a research consultation offers a huge bag of treats as she enters the office. This is serious business. We suggest that we also accept gifts of chickens or eggs, drawing a laugh from the student.

Lovitts (1996), in her seminal essay on graduate student attrition, argues that graduate students tend to blame themselves for their academic shortcomings and subsequent attrition from graduate programs when the real culprit is inherent with the academic structure and process of graduate education. This is the level of anxiety that many graduate students bring to a library mentoring session. Graduate students describe to us their sense of not knowing if they can handle the academic process, the stress it places on their lives, and admit that they do not want to discuss these feelings of uncertainty with their program directors or dissertation advisors. In these situations, we act as academic bartenders, counselors providing an objective ear and mind as graduate students sort through conflicting emotions arising from their educational process.

A case in point: a dynamic graduate student, holding two advanced degrees, is simultaneously enrolled in two of Benedictine’s doctoral programs. She calls the librarian requesting a consultation to discuss her research strategy and, from the sense of humor and quick mind she displayed during the conversation, we were prepared to be schooled with her knowledge and enthusiasm. Our in-person conversation began with a quick question regarding the research wall she had recently hit but soon turned to a worrisome underlying problem. The student was angry with the perceived lack of structure and rigor in one of her programs and lamented that her situation had become more about her own ability to adjust to the roadblocks that were created by the college and less about the collegial experience she desired. On the other hand she emphatically believed that for her other program the opposite was true: that it was well structured, duly rigorous and highly practical for everyone involved. This, of course, is very sensitive information coming from a patron, yet we still feel responsible to help her. But how should a librarian handle such a situation when answering research questions becomes more of a discussion of broader problems?

Dr. Sara Fine (1997) describes the role of the “helping librarian” as being quite similar in nature to that of a counselor. She states that patrons will often ask a question while concealing the real problem and that it is up the librarian to determine for themselves whether to “answer the question or respond to the problem” (p. 78). With regard to the student bearing gifts, there was certainly a research question in the preliminary context but ultimately the real problem came forward. Because we were willing to allow our
level of professional library service to include her venting about the offending program, we were able to continue on with the research problem after her emotional purge. Fine argues that the level of service a librarian performs is based on the level of emotion that he or she can comfortably endure, meaning that there is no absolute standard of professional service one is expected to provide as a librarian. Whether one simply answers the question asked or digs deeper to uncover the real problem, that response is based on what the librarian feels capable of enduring (p. 78).

It is that way with helping librarians at Benedictine Library, constantly changing and reevaluating our library service responsibilities based on student and faculty need. What is amazing is how, despite the explosive transformation of the digital age over the past ten years or so concurrent with the expansion of online and blended programs, many institutions never really took into account in a real tacit way how service would be provided to the rapidly increasing number of students they were admitting (doubling the student population in five-years in our case) or, in the scheme of things, what those service points might actually consist of.

The next example amalgamates two student experiences to create a singular graduate student because their stories are very similar in scope and nature. The amalgamated HEOC student made an appointment to visit with the librarian in the office, wanting help with his thesis. He explained he was having difficulties with the direction his research was heading and was finding little in the way of useful resources on the problem. Someone from the department suggested that he discuss his situation with someone from the library, seemingly a routine situation at first. The research problem he was exploring focused on African American males and difficulties with their retention in higher education. There was no doubt that this was a worthy and important research problem, one that ironically is often echoed by many such graduate students in doctoral programs themselves (the current patron included), but early in our discussion intuition suggested that there was more going on here than the requested help with the thesis.

Young and Brooks (2008) make a very strong case for graduate students of color needing specialized support through five phases of their graduate program including recruitment, orientation and induction, faculty and peer mentoring, in-program experiences, and opportunities for career socialization and advancement. Their findings suggest faculty support could be conceptualized thematically in four distinct ways, two of which are pertinent to the current situation. “Creating and sustaining multi-tiered and multi-purpose support networks and establishing and sustaining formal and informal support groups” (p. 404) seemed to be exactly the role that we were engaged in, and what Benedictine librarians are providing students. Appropriately, these two themes are broadly defined, to allow creative thinking about what elements they might contain, but are definitely in line with what many of our graduate students are seeking us out for and are in need of. The fact that librarians are being sought by both students and programs people to fulfill this “support network” or role of structured support is an indication of a need apparently not being supported by the current structure of graduate programs, or at best is poorly communicated to needy students. Or, perhaps there is also another factor at play.

Borrowing from Fine’s (1997) concept of going beyond the question to unearth the real problem, the HEOC student informed us that his main consternation and primary reason he came for a consultation is because he did not want his adviser (faculty member) to know how lost he really felt at this juncture of his program. This is not the first time this idea of not wanting to display one’s fears and foibles to a critical program adviser, professor, or fellow student has been spoken of during a consultation. It seems illustrative of what Lovitts (1996) describes as “pluralistic ignorance” where graduate students may feel they don’t know how they are actually faring in the program and that “their discomfort or discontent is so linked to their identities and such an admission of inadequacy is highly self-threatening” (p. 14).

In this and other such situations, we encourage the student to speak his mind and listen to his predicament, and then confide to him that his feelings of doubt and anxiety about his own capability to complete the program are actually experienced by many graduate students who return to academe after so many years away, and that he is far from alone in this feeling. It seems clear that upon entering a doctoral program many students can become overwhelmed with the amount of work and the uncertainties inherent in the process being undertaken, as the 50% national doctoral graduation rate might attest (King, 2008). As we discussed his situation, we guided him back to his original research question about African American
male attrition from higher education and were able to suggest a number of possible ideas for him to consider within the area of his thesis. Additionally, this helped him to feel empowered and capable through our reaction to his real problem.

Many recent articles discuss the implications of process within graduate schools and lack of support that many graduate students feel. By not limiting ourselves to a narrow view of the kinds of services provided, academic institutions have begun to expand their institutional resources for graduate students, establishing specialized units like doctoral support centers (DSC) and related graduate student support structures which provide both technical and emotional support (West, et al., 2011). In actualizing the mantra of excellence in service, librarians at Benedictine are developing and providing an ad hoc but real graduate student support network. Due to the effects of “pluralistic ignorance” we are being called upon to assume the role of counselor where “sharing concerns, doubts, and uncertainties” becomes not a weakness to be avoided but a green flag of hope allowing students to work through their anxiety producing situation as we guide them back to clearly thinking through the research problem (Lovitts, 1996).

Counseling skills is just one of the ways that librarians at Benedictine have focused on developing a more proactive, personalized approach to the service they provide. As Fine (1997) articulates about the counselor role, “No we are not therapists; we are not social workers. We don’t have to cure anyone or change the environment. What we do is give people the information they need, and with it the ability to gain more control and direction in their lives” (p. 90). What is more endemic to librarians than to help contribute to the empowering of our patrons and with it the gift that we have helped make a difference, the greatest gift a graduate student has ever left in a librarian’s office.

**Conclusion**

On the face of it, the three identifying concepts for reaching graduate students we discussed - opportunity, orientation and counseling - are common sense ideas that, to be effective, require librarians to be willing to go beyond the scope of merely answering questions and waiting for opportunity to call, to actively opening the doors and windows of possibility. The approach we have discussed requires a bold confidence and sense of service to our patrons cloaked in the academic mission of our educational institutions. Using the academic mission of our respective institutions as our standard, librarians may be able to supplant the concept of mere relevancy with one of front-line facilitator, and influence how the form of that needed change should take place.

However, to feel empowered to move beyond the expected is a scary prospect for many who feel challenged going beyond the status quo (sometimes even in the library profession) and yet, as our discussion reveals, who better to facilitate the description of what library services are and how they should be implemented than the librarians themselves? We do this by listening and facilitating the process once we discover an opening where patron needs aren’t being filled by other structures in place. We do this by getting involved and moving forward to new program launchings and help revitalize old changing ones by providing the answer for many of the needs we can anticipate both students and faculty to have. We do this by understanding the dilemma many graduate students have in their attempt to secure an advanced degree and not being afraid to provide that nonjudgmental social support that is often a roadblock to be addressed until, allowing them to purge, the walls are breached and anxiety is lessened. From there, we help guide students back to their thesis or research problem and to feel that not only can they do the work but that their sense of excitement and possibilities is supported by the collegially impactful “helping librarian”.

What we’ve created in this fashion are approaches gleaned primarily from students themselves, who demonstrated needs based on our early attempts to provide better library service, but which also reflect ideas developed alongside engaged program directors and curriculum creators who understood only that students might need us but were unsure of how we might provide services across formats. Our collegial, personalized approach was engendered by necessity born of our expanding and growing online and blended graduate programs and in our unequivocal championing of the academic mission.
References


The Knowledge Base as an Extension of Distance Learning Reference Service

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Embry-Riddle Aeronautical University

This study explores knowledge bases as extension of reference services for distance learners. Through a survey and follow-up interviews with distance learning librarians, this paper discusses their interest in creating and maintaining a knowledge base as a resource for reference services to distance learners. It also investigates their perceptions about the feasibility and practicality of a reference knowledge base. Primary findings indicate that the majority of participants view a knowledge base as an extension of distance learning reference services positively but see issues related to workload and quality control, in particular, which might hinder the development and maintenance of this type of repository.

Introduction

A knowledge base is a long-term repository of individual facts that support the performance of individuals within an organization or those served by the organization (Boling, Cai, Brown, & Bolte, 2000). Although the term often tends to be used to refer to an online, searchable database maintained by corporations, such as Microsoft (http://support.microsoft.com/), it also encompasses any collection of facts in any format that individuals within an organization contribute to, maintain, and refer to for problem-solving. In the library world, a knowledge base can be as vast as the library itself and as narrow as a procedure manual or an FAQ related to a course assignment. Most commonly in an academic library, a knowledge base is a repository of information comprised of frequently-asked questions, such as how to print from a library workstation or locate information related to a specific course.

Reference librarians, in particular, develop knowledge bases to capture the answers to questions they receive more than once. With the advent of electronic methods of offering reference services, librarians have the ability to compile information from email or chat transcripts in an online, searchable format that they can use internally as a resource for answers to reference questions or make available to the institution’s students at any time from the library’s website to provide an extension of reference services.

Because distance learning students often encounter difficulty communicating synchronously with reference librarians due to geographic distances, different time zones, and outside obligations, reference interactions with them occur many times virtually through email or chat, which provides a record of the information. Since some questions and answers recur, librarians can capture them in a repository or knowledge base that students can research from the library’s website at any time. While there is some research in the literature of library and information science (LIS) on the development of knowledge bases from virtual reference interchanges, there is none that focuses specifically on the distance learning environment. This study explores that issue by posing the following questions. Is a knowledge base developed from institutional virtual reference practical, feasible, or desired among distance learning librarians? If so, are there successful examples?

Literature Review

The concept of a reference knowledge base long predates the technological age. In the nineteenth century, reference librarians’ need to facilitate knowledge exchange among themselves led them to create special cards or card files with the goal of storing information related to users’ questions and librarians’ answers (Bosancic, 2010). As emerging technologies allowed for different methods of capturing and maintaining this information, the card files turned into internal repositories for the librarians’ use, such as archives of email reference interactions. Reference librarians also began to systematize the information into static collections of frequently-asked questions (FAQs) on their websites or provide pathfinders to commonly-requested information for specific courses or programs, so that students had access to them 24/7.
As reference service began extending to email and chat, capturing interactions to populate a knowledge base became much easier. Digital reference, in which an expert provides human intermediation in direct response to a user’s request, generally contains the text of the answer as well as references to web pages, journal articles, and other information (Nicholson & Lankes, 2007). The assumption is that if the information is useful to one student, it may well be helpful to others doing research in the same area, and this is proving to be the case. Pomerantz (2011) studies the Internet Public Library’s archive of answered virtual reference questions and concluded that a portion of resources in a digital reference knowledge base is reusable and may have a half-life of approximately 11 years. Nicholson and Lankes (2007) add that if libraries are able to create a large database for digital reference transactions, researchers might be better able to study the process of user investigation and create tools for measurement and evaluation. They outline a process for developing such a database, which may extend the ability of libraries to formulate digital reference knowledge bases.

Examples in the LIS literature of libraries implementing a knowledge base are sparse. Probst (2005) describes a digital reference management system at Penn State that includes a knowledge base. At the time of publication, however, it was not accessible to external users due to concerns about privacy. Ralph and Ellis (2009) investigated the use of the QuestionPoint knowledge base by member libraries. Through a survey, follow-up interviews, and unobtrusive observation, the authors discovered that the culture of the majority of the participant libraries did not support the knowledge base. In many cases librarians did not contribute questions and answers or search the knowledge base for information. In addition, of those who did contribute, there was little evidence of quality control processes.

Bishop, Sachs-Silveira, and Avet (2011) describe the results of a series of focus group interviews among librarians participating in the Florida Ask a Librarian reference consortium. Many of the participants revealed that they tended to go directly to another member library website or refer a user to that library rather than search the consortium’s knowledge base for another library’s local information. As a result, the consortium restructured the knowledge base to make it more responsive to the types of local information needed. In addition, they increased training for participating librarians on the use and benefits of the knowledge base.

Research Design and Methodology

This study consisted of a mixed methods approach and employed both quantitative and qualitative techniques. The quantitative portion was a survey the investigator administered to distance learning librarians via an electronic list. Follow-up personal interviews comprised the qualitative portion of this research. Both the survey and the interview instruments were approved by the Embry-Riddle Aeronautical University Institutional Review Board for the Use of Human Subjects.

Subscribers to the Offcamp electronic list serve as the population for the survey and the interviews. Offcamp provides an electronic forum for issues related to the provision of services and resources to students in distance learning programs. In October 2011 the list had 732 subscribers, many of whom are members of the Distance Learning Section (DLS) of the Association of College and Research Libraries (ACRL).

The investigator developed an anonymous survey designed to explore the existence of knowledge bases in use by distance learning library services as well as to ascertain the interest among distance learning librarians towards implementing and maintaining them. She tested the survey repeatedly among colleague librarians until it accurately reflected the study’s research questions (see Appendix A).

The Northeast Florida Library Information Network (NEFLIN), of which the investigator’s library is a member, hosted the instrument using Zip Survey software. The survey was available for two weeks in late October 2011. The investigator publicized the survey by sending a message with a link to the instrument to the Offcamp list on the day it opened and again at the midpoint. At the conclusion of the survey period, NEFLIN staff provided a statistical analysis of the responses.

One of the survey questions asked respondents—who were willing to participate in a follow-up personal interview—to indicate this by supplying contact information. The investigator contacted everyone who had supplied contact information. She scheduled a personal interview by telephone with those who indicated availability during the second week of November 2011. The investigator began each
interview by asking prepared questions (see Appendix) and probed further with follow-up questions specific to each of the conversations. She took notes that captured the answers to each of the questions and any additional discussion.

**Findings**

**Survey**

Sixty-seven people answered the survey for a response rate of 9.15%. Of those, 67% work at university libraries and a further 30% work in other academic libraries, and one works in a military library. Sixty-two percent are public services librarians and 19% are administrators. The remainder identified as information technology librarian or indicated their primary role was not on the list supplied in the survey. Sixteen respondents or 24% indicated that their libraries use a knowledge base for distance learning reference assistance. The majority of them responded that someone at the institution had developed the knowledge base from local reference transactions (see Table 1).

Table 1

<table>
<thead>
<tr>
<th>How the Knowledge Base Was Developed</th>
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<tbody>
<tr>
<td>From local reference transactions</td>
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<tr>
<td>By a vendor based on virtual reference customer responses</td>
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<tr>
<td>By a virtual reference consortium</td>
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<tr>
<td>Other</td>
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</table>

Among the libraries that participants specified had a knowledge base, the majority say they are at least available to all of the reference librarians at the institution. In some cases, however, access is restricted to certain library staff, while other make their knowledge bases globally accessible (see Table 2 for a breakdown of the responses).

Table 2

<table>
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<tr>
<th>Access to the Knowledge Base</th>
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<tr>
<td>Only reference librarians at the institution</td>
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<tr>
<td>All students, faculty &amp; staff at the institution</td>
</tr>
<tr>
<td>Only distance learning students, faculty, and staff</td>
</tr>
<tr>
<td>Only certain reference staff</td>
</tr>
<tr>
<td>Anyone with an Internet connection</td>
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</tbody>
</table>

Of those respondents who have a knowledge base, 25% evaluate its effectiveness or user satisfaction. The most common method is to collect informal feedback either from users or reference librarians, although 16% report that they have conducted surveys among users and 11% say that they have interviewed faculty and students. Based on these evaluations, 75% of the respondents agree that the knowledge base is an effective extension of their reference services to distance learners. In addition, 58% say that they plan to maintain the knowledge base in the next year, while 42% plan to improve it. The primary improvements that respondents anticipate are adding more information, gathering better statistics, and moving the content to a vendor-developed product.

In response to open-ended questions asking for examples of successes or challenges with the knowledge base, some participants mentioned that they know many people are accessing the knowledge base but have no data on what is being used or the success or failure rates of users. One respondent added that the system they use prompts students to email a reference librarian if the knowledge base does not
contain the needed information. This, to some degree, points to instances where the knowledge base is not the most effective resource for all questions.

The majority of those who participated in the survey, 51 or 76%, reported that their libraries do not currently have a knowledge base. Of those, 59% state they are unsure they would implement a knowledge base if they had the resources. Ten percent of respondents say they would not implement a knowledge base and 32% express a desire to create one. In relation to all survey respondents, 42% are either unsure or unlikely to implement a knowledge base (see Table 3 for the main reasons they give for their uncertainty).

Table 3

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<th>Reasons Participants May Not or Will Not Implement a Knowledge Base</th>
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<td>Workload issues</td>
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<td>Quality control issues</td>
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<tr>
<td>Reference interactions do not produce standard answers</td>
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<tr>
<td>Privacy concerns</td>
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<tr>
<td>Intellectual property concerns</td>
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In addition, 12% of the participants gave other reasons for their lack of certainty about implementing a knowledge base. Two respondents stated that they are unclear about the potential usefulness of a knowledge base, while another replied that they had never thought about this issue before answering the survey. One person expressed the opinion that the value of having a live librarian answer reference questions is primary, while another volunteered that a U.S.-wide knowledge base makes more sense than everyone duplicating work locally.

Several additional comments from those who have a knowledge base echo the uncertainty about its effectiveness that came out in the answers of those who were unsure or unlikely to create one. One participant writes, “The KB seems to me to be underutilized in proportion to the work required for maintenance.” Another participant surmises that questions from distance learning students may not be reusable because the distance learning coordinator at their library does not appear to either contribute to or use the knowledge base.

Interviews

Ten of the survey respondents indicated that they would be willing to take part in a follow-up telephone interview. The investigator contacted all of them by email in November 2012 with an invitation to participate. Eight of the ten responded affirmatively and two did not answer the message for a response rate of 80%. Two or 25% of the interviewees do not currently have a knowledge base, while the other six, or 75%, were positive or reasonably sure that their library has one.

The two librarians, who reported that their institutions do not currently have a knowledge base, said that it was a service they considered valuable and planned to implement at some point in the future. One stated that her library was in the process of investigating vendors and expected to have a decision by the end of 2011 about how to proceed. The other mentioned that her library was exploring knowledge bases but not actively because the development of one had moved lower on the list of priorities for the organization.

Two of the six interview participants positively stated that they have a knowledge base. The other four were somewhat hesitant and asked for clarification of the definition of a knowledge base before acknowledging that they have one. In fact, one of them mentioned that before the interview she associated the term, knowledge base, more with a commercial website than a library.

The four participants, who had asked for clarification on the definition of a knowledge base, stated that electronic pathfinders and FAQs on their websites are the primary knowledge bases their libraries maintain. In two cases the librarians discussed particular electronic pathfinders developed from answers to
common reference questions recorded in a notebook over the years. They all discussed subject electronic pathfinders they created to provide information for particular courses or class assignments. One participant mentioned using an openly-accessible electronic pathfinder from other academic libraries as a knowledge base when she was developing her information literacy program.

The other common type of knowledge base the four participants, who were initially unsure, mentioned was archived email reference transactions. In one case reference librarians share their answers to email reference questions they think others may encounter. Once a semester they look through the archived responses and glean the purest form of questions and answers that appear to be recurring and add them to a knowledge base for internal use. At another institution, librarians developed their knowledge base organically as they note repetition in email reference interactions. In this case they create video tutorials based on frequently-asked questions for student use as well as an internal FAQ for librarians with suggested responses to questions and class assignments. In addition, the librarians at several different distance learning sites for this institution collaborate on the knowledge base development in order to ensure quality control and standardization.

Another participant discussed quality control issues as well. She stated her opinion that libraries can place more information in an internal knowledge base than in one that is accessible by students and faculty. She remarked that she would not always trust the answers other librarians give and believes that a reference librarian would understand better how to evaluate this type of information than the lay person could.

One of the participants—who answered definitely that his library has a knowledge base—reported that it is intended for an internal audience. Traditionally at this library, reference librarians shared common questions and answers through email and in conversation. In the last year, they formalized these interactions by creating a reference blog. Librarians share information on questions and class assignments in this blog. The interviewee stated that the formalization has been successful and noted that during the first six months of its existence, librarians had accessed the 26 posts in the blog a total of 109 times.

The other interview participant, who was positive about his library having a knowledge base, reported that they are using a commercial product that enables librarians to enter questions and answers as they complete a reference interaction or in anticipation of an assignment. He said that the knowledge base clearly extends reference service to distance learners. Statistics prove that many students are locating answers on their own and that it makes the job of the reference librarians easier. He did add, however, that the one challenge he sees is that not all of the reference librarians either use the knowledge base as a resource or add to it when appropriate. As the system administrator, he is addressing these challenges through training and highlighting successes.

Discussion

There is a major difference between the results of the survey and the interviews in terms of the existence of a knowledge base as an extension of reference services for distance learners. In the former, 76% replied that their library did not have a knowledge base, while in the interviews, 75% said they had one. Four of the six participants in the interviews admitted to giving a negative answer on the survey and reconsidering this answer after a discussion with the interviewer clarified the meaning of the term, knowledge base.

This discrepancy may stem from the fact that many people think of a knowledge base as a term that applies more to information technology than to libraries. It is possible that some librarians who answered negatively in the survey to the question about the existence of a knowledge base in their institutions did so because of their concept of the term, knowledge base. However, their libraries may maintain FAQs, electronic pathfinders, and internal archives of virtual reference questions as do those of the four interviewees who asked for clarification. But, they did not equate them with a knowledge base such as the ones maintained by companies like Microsoft and Apple. In addition, librarians may think of a knowledge base in the library world to be a commercial product such as QuestionPoint or one developed by a consortium like the Florida Ask a Librarian venture.

The majority of data from this study point to some desire among distance learning librarians for a virtual reference knowledge base developed either locally or in conjunction with others. Perhaps the
strongest trend that emerges, however, is one of uncertainty. Participants question whether the actual effectiveness of a knowledge base compensates for the additional work. They also have concern about the quality of answers other librarians may contribute.

In regard to the practicality or feasibility of implementing a knowledge base for the use of distance learning students, uncertainty again prevails due to workload or quality control issues and a perception that distance learning questions may not be reusable.

Those participants from libraries that maintain a knowledge base were generally positive about it as a resource for distance learning reference. But even the most enthusiastic mentioned the need to train colleagues and encourage them to participate to make the knowledge base most effective.

**Conclusion**

Most distance learning library services are likely to have some type of knowledge base for external use in the form of a pathfinder or FAQ and for internal use, such as an archive of virtual reference questions and answers. Many librarians do not think of these resources as a knowledge base because their perception of that term evokes a large technical database of information such as one finds on the Microsoft website rather than anything the library offers. Perhaps a reconsideration of the term to include the information repositories libraries generate from frequently-asked reference questions is due.

As more students engage in distance learning programs and conduct research at times the library is not open, it makes sense to develop a local knowledge base where they can find the information they need. Librarians seem to agree that this is a good idea; however, they may not know how to implement and maintain such a repository given current resource constraints in many libraries. One area for further research on this topic may be to explore the idea of distance learning librarians collaborating on the creation of a knowledge base. Another might be to investigate libraries that have successful knowledge bases and analyze them to develop a blueprint for others.

This study represents a beginning of an exploration of the use of a knowledge base as an extension of distance learning reference services. It began with a question the investigator had about the ways academic libraries might create and maintain a knowledge base and developed as she came to realize there was not much information on this topic in the literature. The study raises more questions than it answers, but it does reveal that a knowledge base sounds attractive to many of the distance learning librarians who participated in the study and may spur others to discuss the issues and collaborate on ways to implement, maintain and publicize library knowledge bases more widely.
References


Footnotes

1 QuestionPoint provides a reference management service that includes a knowledge base, which is developed by member libraries adding reference questions and answers. Libraries have the option of maintaining a local knowledge base or participating in the global version (OCLC, 2011).

2 The personal information was separated from the answers to other questions by the Zip Survey software, ensuring anonymity.

3 The low response rate may be due in part to difficulties some potential participants had in accessing the instrument.
Appendix A

Survey Questions

This survey investigates the experience with and views of distance learning librarians about the use of a knowledge base for reference services at their libraries. It should take approximately 10 minutes to complete. For the purposes of this study, a knowledge base is defined as follows:

A knowledge base is a repository of information partially developed from transcripts of reference transactions recorded by the host institution. The knowledge base may be accessible either to all users of the library or limited to librarians to enhance their access to information specific to their institutions.

1. Does your library use a knowledge base for distance learning reference assistance?
   a. Yes (Go to Q 2)
   b. No (Go to Q 11)

2. How was your knowledge base developed? (please check all that apply)
   a. At your institution from local reference transactions
   b. By a virtual reference consortium
   c. By a vendor based on virtual reference customer responses (e.g., QuestionPoint)
   d. Other (please specify)

3. Who has access to your library’s knowledge base?
   a. All students, faculty and staff at your institution
   b. Only distance learning students, faculty and staff at your institution
   c. Only reference librarians at your institution
   d. Other (please specify)

4. Do you evaluate the effectiveness of or satisfaction with your knowledge base?
   a. Yes
   b. No

5. How do you evaluate? (Select all that apply)
   a. Conduct surveys of students or faculty
   b. Conduct interviews with students or faculty
   c. Collect informal feedback received from students or faculty
   d. Collect informal feedback from reference librarians
   e. Do not evaluate currently
   f. Other (please specify)

6. Based on your evaluation, is the knowledge base an effective extension of your reference service to distance learners?
   a. Yes
   b. No
   c. Not applicable. We do not currently evaluate.

7. If you are you aware of any instances when a distance learning student or faculty member used the knowledge base successfully, please elaborate here.

8. If you are you aware of any instances when a distance learning student or faculty member attempted to use the knowledge base but was unable to acquire the information they needed, please elaborate here.
9. In the next year, do you plan to
   a. Maintain the knowledge base
   b. Improve the knowledge base
   c. Discontinue the knowledge base
   d. Other (please specify)

10. Please elaborate on your plans for the next year. (Go to Q 14)

11. Would you implement a knowledge base at your institution, if you had the resources?
   a. Yes
   b. No
   c. Unsure

12. If you are unsure or would not implement a knowledge base, why not? (please check all that apply)
   a. Our institution does not produce the type of standard reference interactions required for a knowledge base
   b. Privacy concerns
   c. Intellectual property concerns
   d. Workload issues in maintaining the knowledge base long-term
   e. Quality control issues
   f. Other (please specify)

13. If you have any additional comments, please list them here.

14. In what type of library do you work?
   a. University
   b. Four-year college
   c. Two-year college
   d. Public
   e. Government
   f. Special
   g. Other (please specify)

15. What is the broad category of your position?
   a. Public services librarian
   b. Technical services librarian
   c. Information technology librarian
   d. Library administrator
   e. Library staff member
   f. Other (please specify)

16. If you would be willing to participate in a brief follow-up telephone interview, please supply your contact information below:
   a. Name
   b. Email address
   c. Telephone number
Appendix B

Personal Interview Questions

1. How long has your library been using your knowledge base?

2. Do you think it is an effective extension of your reference service to distance learners? (Please elaborate.)

3. How did your library construct your knowledge base?

4. How does your library maintain and update your knowledge base?

5. Do you have any advice for librarians who are considering developing a knowledge base?

6. Do you have anything to add on this subject?

7. May I explore your knowledge base and include a reference to it in my presentation and article?
Virtual Reference at a Global University: An Analysis of Patron and Question Type

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This paper covers material presented at the Fifteenth Distance Library Services Conference (formerly known as the Off-Campus Library Services Conference) in Memphis, Tennessee. During the course of this presentation, participants will learn how both chat and instant messaging reference are being conducted and evaluated at a major online learning university. This information will enable participants to understand and take into consideration quality of service issues when implementing or refining their own virtual reference services in order to best target their own user community. This also has implications for proper training, staffing, and marketing of the services.

Quality of Service

Since August of 2003, we have had a partially outsourced reference service that provides 24 hour online chat and after hours e-mail service. The service is continually monitored for quality purposes. A librarian is dedicated to continually monitoring both the chat and e-mail responses and will follow up with the patron if the answer provided by the service is incorrect or incomplete. Follow up occurs for about four percent of the questions answered by the service. Overall, the approval rating from students for responses received is above 90%. Also, if the answer given to a patron is incorrect or incomplete, the librarian follows up with the service to make sure only correct information is given out in the future.

According to survey results, students, faculty and staff are pleased by the fact that they have 24/7 access to library services, including reference, interlibrary loan and database access. Since it is an outsourced serviced and those librarians do not have access to certain library patron accounts or technical information, they do have to refer certain questions to us. This again is about only four percent of all questions that they answer. This includes questions such as barcode login problems or e-reserves requests.

The biggest problem and complaint with outsourced chat is related to technical problems like disconnects. This is usually due to an unstable Internet connection, especially for our overseas students. However, we do note on the chat login page that alternate means of contacting us, such as e-mail, are available.

Types of Questions Asked

Transcripts of chat and IM sessions were coded using predetermined categories. All categories listed below, except “How do I cite?” were taken from Arnold and Kaske (2005). Because of our impression that the library receives a large number of questions about citations; we decided it would be useful to include the “How do I cite?” category to determine if this was indeed the case.

- **Directional:** These questions are directional in nature in that the user is looking for the location of a resource or library. For example, a student asks how they can find the Academic Search Complete database. They require no specifics about how to find resources in the database. They may also ask a question about how to get to a particular library.
• **Ready Reference:** Ready reference questions usually require a single, straightforward answer and are usually uncomplicated. An example would be, “What is the capital of China?” (Katz, 1997).

• **Specific Search:** The specific search question differs from the ready reference query in that the information is gathered in the form of “a list of citations, a book, or a report” (Katz, 1997). For example, a student will say that they need a certain number of scholarly articles on the effectiveness of police patrols.

• **Research:** “Research questions differ from other inquiries in that most involve trial-and-error searching or browsing” (Katz, 1997). They are usually from experts in the field or faculty and are more time intensive than specific search questions. Since our university is not considered a typical research institution, we get few of these questions.

• **Policy and Procedural:** Questions pertaining to policies or procedures within the library system, such as "How do I borrow books?", "How do I get access to my patron information?", and "How do I borrow books from another library?" Most of these questions begin with "How do I?" but they can also include questions such as “Where can I return books?”, “How long does it take to get DocumentExpress (ILL articles)?”, and “Why does it take so long to get ILL articles?”

• **Holdings/Do You Own?:** These are questions about specific holdings of a library. Normally the customer has the title of a source and would like to know if the library owns the material (Arnold & Kaske, 2005). For example, a student wants to know if we have the book *The Color Purple* by Alice Walker.

• **How Do I Cite?:** These are questions where students ask specifically how to cite a source.

A total of 1,308 chat transcripts from the outsourced chat service were coded from the months of July and October 2011. July and October were chosen because these months reflect “typical use” statistics. Of these 1,308 transcripts, 136 were directional questions, 84 were ready reference questions, 625 were specific search questions, 14 were research questions, 204 were policy and procedural questions, 173 were holdings/“Do you own?” questions, and 72 were “How do I cite?” questions. Most patrons are not aware that they are not actually talking to a librarian at our institution when asking questions using the chat service. This can lead to frustration among some when the outsourced service cannot answer certain technical or account related questions and have to refer them to us.

![Figure 1](image-url): Chat question types by percentage.
Fifty-three percent of respondents found the information extremely helpful, 16% very helpful, 10% helpful, 9% somewhat helpful, and 12% not helpful. Most of the comments from the patrons who found the information unhelpful were usually due to technical problems with chat, such as being disconnected from a call.

A total of 37 instant messaging (IM) transcripts from our internal instant messaging serviced were coded from the months of July and October 2011. July and October were chosen because these months reflect “typical use” statistics. IM is run on limited hours, unlike chat which is 24/7. Also, unlike the outsourced chat service where an optional user satisfaction survey automatically pops up after each chat session, in the IM service a link has to be sent to the patron and most do not click on the survey link. Some disappear before the survey link could be sent. Also, of the 88 that did click on the link, only 37 actually completed the survey. Of these 37 transcripts, eight were directional, zero were ready reference, 19 were specific search, zero were research, two were policy and procedural, two were holdings/“Do you own?” questions, and six were “How do I cite?” questions.

Figure 2: Chat questions by perceived helpfulness.
In general 92% of our IM patrons found the service helpful and 93% would recommend the service to a friend. Fifty-six of IM users prefer to use IM rather than contact the library by other means and 86% found their experience with IM good or excellent.

Conclusion

The results of our study do not indicate changes need to be made to the staffing of our chat or IM reference. However, a significant percentage of the questions asked fall into the policy/procedural category. This means reference staff must be familiar with the library’s circulation and interlibrary loan policies and procedures. This includes our outsourced chat service. To this effect we have developed an online reference manual for both us and them to refer to that can be easily updated regularly. As these policies may change, a mechanism like this should be in place to foster communication between reference and document management staff.
IM and chat survey results indicate a high level of satisfaction with the services. We would like to increase awareness of the services. The university holds open houses several times a year, and the library always staffs a table. We find that this is a good opportunity to make prospective students aware of the support. We also promote the service through our online visits to classrooms and through our required one credit information literacy and library skills class, LIBS150, and the required graduate information literacy course, UCSP 611.
References


Stop Saying No: Start Empowering Copyright Role Models

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The Excelsior College Library is turning fearful faculty members into empowered copyright role models. Geared towards institutions operating without a copyright policy or department, this article outlines a three-step process for fostering faculty collaboration surrounding copyright practices: (1) Give faculty and course developers the tools and confidence necessary for making responsible copyright decisions. In addition to providing quick guides about fair use and the TEACH Act, we also promote the use of library resources and other rights-cleared materials such as those with Creative Commons licenses, (2) Reinforce the library’s recommendations by hosting periodic professional development sessions that emphasize the faculty member’s responsibility in making balanced and fair copyright decisions, and (3) Share specific examples of how to model good copyright behaviors in online courses. The authors emphasize that by simply modeling copyright responsibly, faculty can help students learn how to avoid plagiarism.

Background

Throughout a partnership spanning ten years, the distance education librarians of the Johns Hopkins University’s Sheridan Libraries have developed and continue to manage the full-service online library of Excelsior College. Excelsior is an accredited, nonprofit, entirely online institution of higher education. The librarians serve a diverse community of faculty, staff and over 31,000 students, providing curriculum support to associate, bachelor’s and master’s degree programs in Liberal Arts, Nursing, Health Sciences, Business and Technology.

Excelsior’s teaching faculty are located throughout the world, with the majority based within the United States. In addition to their positions at Excelsior, many also teach at institutions local to them. Therefore, they come to Excelsior with very diverse experiences regarding copyright, fair use and online education. Currently, Excelsior does not have an institutional policy or office devoted to issues of copyright. Instead, faculty and staff in need of formal guidance can consult the College’s General Counsel. However, contacting General Counsel for routine questions concerning copyright and fair use is an unsustainable practice. Therefore, in lieu of a copyright office or institutional policy, the librarians are the resource many faculty and staff refer to with these types of questions. The librarians, in turn, strive to provide accurate advice about copyright and the four factors of fair use to the Excelsior College community. Over the years, the library team has implemented various outreach and instructional strategies to promote good copyright practices. Recently, we compiled the methods that have proven most successful and have begun taking steps to empower our faculty to make their own decisions regarding copyright and fair use.

The steps are outlined below, but before diving into details we would like to discuss how our approach, with its emphasis on faculty empowerment, came about. It stems from an endless stream of questions, each evidencing faculty uncertainty regarding their rights and responsibilities as information users. For a time, when confronted with questions like, “Can I use this graph in my course?” the Excelsior College Library, like many academic libraries, would point instructors to resources such as the doctrine of fair use (Section 107 of the U.S. Copyright Law) and the TEACH Act (the Technology, Education and Copyright Harmonization Act, which revised Sections 110(2) and 112 of the U.S. Copyright Law). Ultimately refraining from providing “yes” or “no” answers, the librarians encouraged faculty members to use these documents in order to make responsible copyright decisions. Despite being on opposite ends of
this exchange, rarely were either the instructors as receivers or the librarians as givers satisfied with this type of advisement. From the instructors, it usually inspired a cascade of new questions digging for a more definitive resolution. For the librarians, the ineffectualness of this approach was clear and exceedingly troubling. The library needed a method to better empower faculty, effectively preparing them to be informed, fair and confident copyright decision makers. Consequently, we were inspired to develop a new approach that not only emphasizes the instructors’ decision making responsibilities as the users of copyrighted materials, but also prepares and encourages them to apply their analytical abilities; ultimately enabling them to take advantage, when appropriate, of their rights under the doctrine of fair use.

With advances in technology, social media and online education, the Excelsior College librarians have pursued many professional development and learning opportunities to stay abreast of the changing landscape in copyright, fair use and distance education. In 2010, the library began exploring the scholarship of Renee Hobbs, Peter Jaszi and Patricia Aufderheide to help shape our new approach to addressing questions about copyright and fair use:

- Dr. Renee Hobbs is the Founding Director of the Harrington School of Communication and Media at the University of Rhode Island and is the founder of the Harrington School’s Media Education Lab;
- Dr. Peter Jaszi is a professor of law and is Faculty Director of the Glushko-Samuelson Intellectual Property Clinic at American University’s Washington College of Law;
- Dr. Patricia Aufderheide is a professor of film and media arts and is Director of the Center for Social Media at American University.

Since co-authoring *The Code of Best Practices in Fair Use for Media Literacy Education* in 2008, Hobbs, Jaszi and Aufderheide have redoubled their efforts to educate educators about their rights as creators and users of copyrighted works by offering online and in-person workshops.

While participating in one such online workshop, *Fair Use and Balance in Copyright: The Best Practices Model*, the Excelsior library team was introduced to the definition of copyright that Hobbs, Jaszi and Aufderheide teach: “The purpose of copyright in the U.S. is to promote the creation of culture—‘science and the useful arts.’ It is not primarily to protect copyright owners” (Aufderheide & Jaszi, 2010, sec. 1). Instead, they explain that the very nature of sharing resources, while still giving attribution to the creator, helps to enhance and elevate culture. The message was a positive one that resonated with the team immediately: copyright protects creators, but most creations build off of what has already been created. We recognize that instructors seeking permission to use copyrighted materials are not looking to rob the copyright holder of credit or profit. Instead, they are working to create and teach courses with materials, often copyrighted, which stimulate students and inspire learning.

This message was reinforced by Hobbs in the Association of College and Research Libraries (ACRL) workshop, *Copyright and Fair Use for Digital Learning: Teaching Strategies that Work*. She emphasized that “fair use provides the necessary balance between the rights of copyright holders and the rights of users, fulfilling copyright’s mission to promote knowledge, creativity and the spread of innovation” (Hobbs, 2011, sec. 1). This equilibrium is often challenged by the high levels of insecurity, anxiety and caution that surround copyright. Often unsure about what would or would not be considered fair use, many instructors become hypercautious, deciding not to use something or using it in secret behind the password-protected environment of online courses. In order to combat these tendencies, the Excelsior College librarians have embraced Hobbs, Jaszi and Aufderheide’s practice of educating educators, so that they may feel empowered to decide when and how to use copyrighted materials.

Our Approach

The doctrine of fair use is central to the enterprise of education….educational leaders and classroom teachers must join scholars, librarians, and others to understand their responsibilities and to advocate for their rights under copyright law (Hobbs, 2010, ix).
Provide Faculty with Resources and the Confidence Necessary for Making Responsible Copyright Decisions

Supporting preparedness and encouraging confidence are key components of the Excelsior College Library’s empowerment approach. The librarians recognize that the process of finding electronic resources (e.g., articles, books, images, films); analyzing the fairness of their use; and then knowing how best to link or embed and properly cite them within a course management system can seem overwhelming. Therefore, we develop faculty resources and offer services designed to remove the guesswork and prepare faculty for the process from start to finish:

- Our collection development policy considers the resource needs of course developers. For instance, with their needs in mind, we made multimedia a priority for FY2010, adding several new databases containing images, streaming videos and music.

- When working with database vendors, we investigate terms of use for online classes and negotiate licensing agreements to best serve the needs of Excelsior College.

- We participate in course development kick-off meetings which highlight subject guides, multimedia databases, and relevant resources (e.g., databases, journals, books, films) available through the library.

- We offer research assistance for finding and incorporating supplemental materials to enhance the teaching and learning process.

- We create and market faculty resources about copyright, fair use, creating persistent links, embedding multimedia and proper citation formatting.

- We place these materials in point-of-need locations, such as in course development shells, to help increase instructor confidence in making reasonable and sound decisions about resource inclusion.

The Excelsior College librarians also provide extensive support and encouragement as faculty work to bring their ideas for a course to fruition. As mentioned above, we develop collections that include both subscription-based and free resources, and help instructors find materials that support teaching and learning. When reaching out to course developers, the librarians:

- Emphasize how we can help ensure their success in designing robust, resource enhanced classes that fully support the course’s unique focus and its subject discipline as a whole.

- Encourage faculty to create dynamic courses that include both multimedia and full-text resources.

- Market the library as a place to receive copyright guidance, in addition to research assistance.

- Promote the use of library-created faculty resources as helpful tools for making copyright decisions.

- Always choosing a positive stance, we emphasize what can be done within the purview of fair use instead of focusing on copyright restrictions.

- Convey that while each determination must be made on a case-by-case basis, the task will become less challenging as the faculty member becomes more familiar with the thought process behind balanced copyright decisions and continues to put the four factors of fair use into practice.
Ultimately, we have found that this approach offers greater flexibility than an institutional copyright policy would allow and helps to establish and maintain a collaborative relationship between the librarians and faculty. By cultivating these relationships, we are able to increase the use of library materials in online courses and learn which of our resources faculty find most useful. Additionally, by boosting instructor confidence, we are able to empower faculty to make balanced decisions about copyright and fair use, thus shifting them into the role of decision maker.

**Promote the Use of Library Resources and Other Rights-Cleared Materials**

While the library’s teaching philosophy now stresses the user’s responsibility in making balanced decisions about which materials will both meet their needs and fall within fair use, we strive to provide instructors with all the tools necessary for making appropriate resource selections. For example, in some instances, we encourage faculty to close Google, YouTube, etc. and instead begin their search for resources in the library’s collections or within appropriate free alternatives. Simply providing faculty with ideas about where to find and how best to use subscription-based and rights-cleared resources frees them to select highly relevant materials without the fear of copyright infringement. For instance, using older resources from the public domain or newer materials licensed under the Creative Commons may be suitable options. Also, exploring library resources before turning to the open Web may retrieve relevant resources that the institution has procured access to through subscription or purchase. Persistent links to library resources can then be placed within the password protected environment of online courses, establishing quick access for students and essentially eliminating much of the confusion surrounding copyright decisions.

**Provide Quick Guides about Fair Use and the TEACH Act to Support the Use of Copyrighted Materials**

Excelsior College course developers and teaching faculty often work in traditional brick and mortar institutions before or while teaching in Excelsior’s entirely online environment. They may have taught similar courses in a physical classroom or chosen supplemental resources while using another, potentially larger, library collection. When faced with resources not available through the Excelsior College Library, we ask faculty to consider whether it is essential to use that particular resource or if we can assist them in finding appropriate alternatives from our collection. They often accept our offer of research assistance and appreciate this opportunity to revisit and refresh their course materials.

If a particular resource is deemed essential but is not available through our library or other rights-cleared collections, then the librarians return the faculty member’s attention to the four factors of fair use and the TEACH Act. We continue to reference these documents as they provide the basis from which balanced copyright decisions must stem. However, in an effort to provide more substantial guidance, the librarians have developed and market a set of recommendations for use of electronic resources in educational settings (see Appendix). Created in the fall of 2010, the two-page document outlines key points to consider and questions to ask oneself when working to determine if the educational use of an electronic resource falls within fair use. The document is available through the library’s website on the faculty resources and copyright pages, is shared in all course development meetings, and is discussed in periodic copyright webinars.

Since implementing this approach, we have witnessed more instructors beginning their search for course materials in the library’s collections. They may later widen their net in search of additional resources not available through the library. With this broadening of their search, they often return to us with new questions about how to proceed. Again, we refer the faculty member to our recommendations document and talk them through the key points and considerations for determining whether their proposed use falls within fair use. We take as much time as needed to help them ask the necessary questions and thoroughly think through the process in order to make a balanced decision. Each exchange strengthens the collaborative relationship between the course developer and the library.
Reinforce Library Recommendations with Professional Development Webinars that Emphasize Faculty Responsibility in Making Balanced and Fair Copyright Decisions

The library’s copyright webinars are designed to reinforce the recommendations document by providing more in-depth instruction about the four factors of fair use and other helpful resources such as the TEACH Act. Like Hobbs, Jaszi and Aufderheide, the Excelsior College librarians place particular emphasis on factor number one: the purpose and character of how a resource will be used, including whether the use will be transformative or merely a reproduction of the original. For example, we explain that by pairing quotations or images with commentary or criticism, one adds educational value and thus transforms the original into something new (Columbia, 2011). We ask faculty members to weigh their proposed use against the four factors of fair use and the TEACH Act, thus shifting them into the role of decision maker. This approach removes the frequently assumed decision making responsibility from the librarian and returns it to the faculty member (i.e., the actual user of the resource). Nonetheless, librarians should anticipate common misconceptions and educate educators about avoiding these pitfalls. For example, also relating to factor number one is the purpose of using a resource for teaching and learning. Within the environment of a college or university, it will often be determined that the use of a particular resource is for educational purposes and is therefore well suited for fair use consideration. However, the doctrine of fair use requires the balanced application of all four factors. Faculty must be warned that stopping their evaluative process at factor number one is woefully insufficient.

For factors two, three, and four, the Excelsior College Library emphasizes the following:

- **Factor two** focuses on the nature of the work being used. Unpublished and creative or nonfiction works tend to receive greater protection. Additionally, use of materials commercially available for educational purposes, such as textbooks and course packs, do not generally fall within fair use.

- **Factor three** looks at the amount and portion used in relation to the copyrighted work as a whole. The law does not set exact quantity limits and the “amount” of a work can also be measured in qualitative terms. For example, photographs and artwork can be tricky because usually the full image is needed. In these cases, using a thumbnail or low-resolution version of an image may be considered using a lesser amount. In general, the rule of thumb is that the more you use, the less likely it would be considered within fair use.

- **Factor four** considers the use’s effect upon the potential market or value of the copyrighted work. Fundamentally, this means that if a work is available for purchase or licensing, then making it freely available weighs against claims of fair use. Additionally, if the purpose of using the work is commercial or promotional in nature, then a negative effect on the market may be easier to prove (Columbia, 2011).

After providing these explanations, the librarians point out that fair use creates flexibility, and we stress that while this ambiguity may cause some initial frustration, it is important to recognize that a flexible approach allows the law to adapt to changes in technologies and to the information landscape as a whole.

The webinars are brief, lasting only 30 minutes, in order to fit within the busy schedules of course developers and teaching faculty. To supplement the webinars and reach those unable to attend, the librarians also:

- Share the recorded webinars through the library’s website and liaison emails.

- Maintain a copyright web page that includes links to resources and tip sheets.

- Market this page in course development meetings, faculty newsletters, blog posts, liaison emails, etc.
Nurture collaborative relationships with faculty by participating in course development meetings and sending periodic liaison emails.

Use phone or web conferencing calls as teaching opportunities to reinforce the importance of responsible copyright decision making.

Through these interactions and the webinar, we remind faculty that one must be reasoned when considering where to find resources; determining what and how much to use; and designing student interactions with copyrighted materials (e.g., Would the interaction be considered transformative? How will it enhance the learning experience?). The librarians continually stress that each situation is unique, thus requiring balanced consideration on a case-by-case basis. Ultimately, this model allows for the infinite number of use scenarios that an instructor could encounter. If the fair use decision were left up to others (e.g., copyright offices, general counsels, the library, or written policies), it would lose the flexibility that it was designed to include.

**Lead by Example, Modeling Good Copyright Behaviors in Online Courses**

The Excelsior College librarians recognize that responsible behavior can have a domino effect. Starting with the library, we model good copyright practices and encourage faculty to do the same; all of this in an effort to gently steer our students in the right direction. For example, we host copyright webinars for faculty entitled, Copyright Role Models: “I learned it by watching you!” This pop culture reference refers to an anti-drug PSA about, “Parents who use drugs, have children who use drugs” (1987). In the webinar, we teach faculty that by understanding and asserting their rights as information users, knowledge and innovation are spread through legal and ethical channels; and that by using information in legal and ethical ways, they are modeling appropriate behaviors to their students. Through the webinar, the librarians share specific examples of how to model good copyright behaviors.

First, the librarians ask faculty to encourage student use of library resources. We offer to collaborate on the design of assignments that include information literacy and research skills. Alternatively, we suggest pointing students towards rights-cleared resources, such as those licensed under the Creative Commons. These and other recommended web resources can be found on the library’s multimedia research guide. The librarians explain that both avenues provide students with responsible options for resource selection and generally remove fears of copyright controversy.

Second, the librarians strive to demonstrate copyright best practices in everything we do. For instance, we include citations for sources and images in all library-created materials (e.g., tip sheets, PowerPoint presentations, webinars). At the end of all of our PowerPoint presentations we include slides that list works cited and images used. Additionally, by using in-text citations in our writings and presentations we model responsible scholarship. The in-text citations point our audience to the complete citation at the end of the work where they can learn where to find additional information. Simply by putting citations to use and applying proper formatting, librarians and faculty encourage students to do the same.

Lastly, we describe how the library handles APA citations on our website. HTML is not conducive to double spacing or hanging indents, but beyond these two formatting issues, we do our best to model correct APA citations. We show course developers examples of how to cite commonly used materials such as journal articles and images. We explain that in correct 6th edition APA, if a doi is not available, then the URL to the journal’s homepage is placed at the end of the citation. The librarians acknowledge that including the journal URL has the potential to cause confusion. Students may think that they should use the URL to find the full text of the article. Nonetheless, we feel it is very important to demonstrate the correct citation formatting. Therefore, to minimize confusion, we recommend that the journal’s URL not be hyperlinked and that instead a link reading, “Click here to read the article” be placed directly below it. We encourage course developers to use a similar format in their online classes. This way, students are consistently shown correct citation formatting. Our ultimate goal is to teach faculty that by simply modeling copyright responsibly, we can help students learn how to avoid plagiarism.
Conclusion

By keeping the focus on empowerment, the Excelsior College Library is working to dissipate the shroud of fear that surrounds copyright in online learning environments. Starting with our own team, the librarians strive to stay abreast of copyright’s changing landscape by attending classes and workshops, reading professional literature, and participating in listservs and conferences where we can share and learn amongst other academic librarians. These efforts afford us more confidence as we educate educators about copyright and fair use. By enfolding these professional development activities into our daily routines we are continually building our knowledge and confidence regarding copyright and fair use. Our team approach to copyright has led to the successful creation of the library’s recommendations for use of electronic resources in educational settings (see Appendix) and the regular occurrence of librarian led faculty development sessions about modeling responsible copyright behaviors.

While fair use can sometimes feel like a moving target, changing as the U.S. Copyright Law is interpreted by the courts in new ways, the library team remains confident in the fact that we are making every effort to stay informed and apply reason while imparting up-to-date recommendations. The librarians work collaboratively with faculty and one another as we consider questions relating to copyright and fair use. In place of a copyright office or institutional policy, we bolster one another’s confidence via this team approach. Recognizing that faculty members often seek our advice about copyright and fair use, the Excelsior College librarians have developed an approach to educating educators that both promotes faculty-library collaboration and prepares instructors to make and model good copyright decisions. Our approach to fostering faculty collaboration surrounding copyright practices can be summarized in three steps:

1. Give faculty and course developers the tools and confidence necessary for making responsible copyright decisions.

2. Reinforce the library’s recommendations by hosting periodic professional development sessions that emphasize the faculty member’s responsibility in making balanced and fair copyright decisions.

3. Share specific examples of how to model good copyright behaviors in online courses.

Through this paper, the Excelsior College librarians have shared our experiences and suggestions about establishing a new approach to copyright that frees the library from the role of naysayer. Our approach both empowers faculty to make responsible copyright decisions when selecting materials for online courses and prepares them to be copyright role models for our students.
References


Appendix

Recommendations
For Use of E-Resources in Educational Settings

The Excelsior College librarians have compiled a list of resources to consult, as well as some recommendations to help clarify how to apply fair use when using electronic resources (such as journal articles, ebook chapters, and images/multimedia from subscription databases and the open-Web) in educational settings.

There are several key points to keep in mind, resources to refer to, and questions that each individual must ask themselves in order to decide how to proceed in determining the fair use of each resource.

Note: These are recommendations only. You may also wish to review the Excelsior College Copyright Law and TEACH Act (March 2005). Additional questions on copyright can be referred to General Counsel.

Key Points:

1. The Four Factors of Fair Use (U.S. Copyright Law - Section 107) should be reviewed and applied when considering to use a resource:
   a. Purpose and character
   b. Nature of copyrighted work
   c. Amount to be used
   d. Market effect
2. Review the Technology, Education and Copyright Harmonization Act for guidance, also referred to as the TEACH Act (revised Sections 110(2) and 112 of the U.S. Copyright Law).
3. Each use and each item/resource is examined on an individual, case-by-case basis.
4. First determine how you are using the resource, more importantly than what the resource is.
5. Think reasonably about the intent of use for educational purposes.

Recommendations:

1. Cite It. Always be sure to give credit by fully citing each resource (including images, multimedia, journal articles etc.) This shows where the item was obtained, gives the reader information to be able to find it again in case the hyperlink changes, and models responsible scholarship.
2. Link It. Include the direct link (permalink or persistent link) for database resources within Blackboard. Questions about how to create a persistent link? Check out our easy steps for creating permalinks.
3. Ask For It. When in doubt about using a resource ask permission from the owner/author/publisher.
4. Note It. Place a copyright notice in each course stating the materials used cannot be redistributed in any form and are for the intended audience only.
5. Check It. Check the Terms of Use for the item or database. For example, the Credo Reference database explicitly states that their images may be used in the online classroom.
6. Teach It. Think about how the use of this resource is enhancing the educational experience. Use resources wisely where it makes sense to illustrate a point, enhance student discussion, etc.
7. Open Source It. Use Creative Commons or public domain resources for use in educational settings. Where to find these types of resources and more can be found on our Library’s Multimedia page.
8. Still not sure? Consult with the Excelsior College General Counsel.
Special Considerations for Multimedia:

First, it is important to determine fair use.
As noted above, the librarians recommend linking to items from the Library’s subscription databases in online courses. However, if you would rather embed an image from a library database within an online course, you will still want to follow the factors of fair use and recommendations listed above.

Next, if you decide your use falls within fair use, here’s an example of how to cite an image in APA format:


For additional citation formatting examples in APA and other styles, please refer to the Citing Sources page.

If you decide to choose this route, we recommend putting the citation directly below or beside the image, or in a list of references (bibliography).

Need help? Please contact your librarians.

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This article offers a theoretical model of online, graduate student information seeking behavior. The qualitative methodology used to gather data for the development of the model included an electronic survey and semi-structured interviews conducted online using Adobe Connect Pro™. Participating in the study were 238 graduate students enrolled in at least one online course at a mid-western university. Data analysis included use of Zoomerang™ reports to interpret survey data, and content analysis of interview transcriptions. The resulting evolution of the Bates’ (2002) theoretical model includes new two modes of information seeking: scrutinizing (directed, dynamic), and being alert (undirected, dynamic). The researchers conclude that the essence of online, graduate student information seeking is the gathering and processing of information by humans using computer technologies and the resulting impact on the human brain. This study shows the necessity of linking online, graduate student information-seeking research to psychological theory to examine reasons why online graduate students engage in various information behaviors.

Background

Emporia State University (ESU), located in the heart of the scenic Flint Hills, is in close proximity to the three major metropolitan areas of Kansas, Wichita, Topeka and Kansas City. ESU serves 6,500 students in nationally recognized academic programs. Founded in 1862, ESU was the first public institution of higher learning in Kansas. The university enjoys a national reputation as a leader in teacher education and student retention and as an innovative marketer through its regional distance program in the School of Library and Information Management (SLIM). Founded in 1902, SLIM is the oldest school of library and information studies in the western half of the United States and offers courses in six program sites in Colorado, Kansas, Oregon, and Utah. The SLIM, Master of Library Science, accredited by the American Library Association, offers a two-year, 36-credit-hour degree program that prepares qualified students to become information professionals in all types of libraries and information agencies, as well as a Ph.D. program that prepares scholars to teach in higher education and conduct research in library and information studies. The PhD program offers concentrations in library and information management, instructional design technology, and information systems. This study was conducted by nine SLIM, PhD students who, along with their professor, formed a research team during the spring 2011 semester.

Introduction

Rapid growth in the amount and types of available online information elevates the issue of library usage to that of a new imperative for today’s society. Access to online college classes is a strong “pull” on today’s technologically modern college students while distance education becomes the fastest growing trend in higher education today. According to the 2010 Sloan Report on Online Education, online
education experienced a 25% growth rate from the previous year. The 2011 Survey of Online Learning reveals that the number of students taking at least one online course has now surpassed 6 million. Now nearly one-third of all students in higher education are taking at least one online course.

Unprecedented growth in online education, and college students’ related preference for online courses, presents new challenges and opportunities for college students, academic librarians, and their content area faculty partners in teaching and learning, as well as for today’s American society committed since the late 1800’s to creating an informed citizenry through an education system including schools and libraries. What do these contemporary trends mean for the future of college education in America, particularly for the place of academic libraries and roles of professional librarianship?

**Low- and Non-use of Libraries**

Academic libraries and librarians are ideally positioned to provide online students with access to paper and digital resources and to teach information literacy skills necessary to find and assess, and create and effectively use content specific information. However, a growing body of research indicates that low- and non-use of college and university libraries and the services of librarians exists. Studies indicate that some of the reasons for low- and non-use of university libraries are student’s lack of time, student’s distance from the library, and student’s lack of knowledge of resources (Brick, 1999; Flowers, 1995; Green, 1994; Harris, 2001; Hider, 2008; Tenopir, Hitchcock, & Pillow, 2003; Toner, 2008). Mirtz (2010) asserts that non-use may be associated with metaphors used by librarians such as extension, outreach, continuing, and distance, which are not well-understood by students at a distance, therefore, creating gaps between the student at a distance and the library and/or librarian. Ismail (2009) found that graduate social work students, who participated in courses through non-traditional delivery including weekend and satellite instruction and who did not visit the main campus, had difficulty effectively utilizing the resources of the library and needed more assistance and attention with regard to access to library resources and services.

A 2006 report by the Online Computer Library Center, Inc. (OCLC) membership states that “only 10% of college students indicated that their library’s collection fulfilled their information needs after accessing the library Web site from a search engine” (DeRosa, Cantrell, Hawk, & Wilson, 2005, p. 6-2). It was also reported that 54% of students “do not seek assistance when using library resources” (p. 6-2). In a study of distance students using teleconference course delivery, Tipton (2001) found a need for orientation to library services based on 43.14% of students in the study who reported “they often or very often felt the need for additional training in searching for materials for research papers” (p. 400).

Other recent studies have investigated student academic achievement and the problem of low- and non-library use. Goodall and Patten (2011), in a study of undergraduate students at Huddersfield University in West Yorkshire, England, link academic library low- and non-use to student achievement. This study acknowledges that library usage varies between academic schools within institutions and that there are often pedagogic reasons for low library usage. However, this study suggests that in some subjects, students who “read” more measured in terms of borrowing books and accessing electronic resources, achieve better grades. The Huddersfield University research corroborates the research findings at the University of Cape Town (DeJager, 2002), which indicates that humanities students who do well in exams tend to borrow more books from the library than those who did not. According to DeJager (2002), “the circulation of library materials indeed correlates significantly with academic achievement in certain subjects leading to the deduction that undergraduate students who use their libraries a lot, also do well in their exams” (pp. 295-6).

According to Kolowich (2011), the issue of library non-use was studied by two anthropologists and library staff at Illinois Wesleyan, DePaul University, Northeastern Illinois University, and University of Illinois’s Chicago and Springfield campuses to learn what students, librarians and professors think of the library and each other at these institutions. Through their research, librarians learned that students’ study habits are likely to be worse than they thought as students’ tend to overuse Google and misuse scholarly databases. Librarians and professors tend to overestimate the research skills of some of their students, leaving students feeling intimidated and alienated from the library. At times an idealistic view of the research process is projected on students who are often not willing or able to fulfill it.
Theoretical Framework

This study builds on the theoretical model by Marcia J. Bates (2002) wherein she attempts to achieve two goals: 1) “to provide a single model that incorporates both information seeking and searching within it, and 2) to integrate the social and cultural with the underlying biological and physical anthropological layers of human experience with the underlying biological and physical anthropological layers of human experience with respect to information seeking and searching” (p. 1). Bates’ model outlines four modes of information seeking behaviors, which were used as a framework for this study: “directed and undirected” (p. 4) information seeking behaviors; and, “active and passive” (p. 4) information seeking behaviors. Basic premises of Bates’ theory used to examine findings in this study include: 1) The natural propensity of humans is to acquire information passively through elaborative social networks; 2) Information seekers encounter difficulty in accessing online information resources due to lack of information literacy skills; 3) Lack of effective supports during online information seeking cuts down on the need for active information seeking in libraries; 4) Human beings adopt the principle of least effort in seeking and searching for information. Bates’ view that the natural propensities of human beings to collect information passively through absorption from the environment or actively through sampling and selection provide the point for derivation and the evolution of a new theoretical model of online, graduate students’ academic information seeking behaviors.

Methodology

A qualitative inquiry process (Creswell, 2007) was designed to investigate gaps in the research literature about low- and non-use of libraries and librarians’ services. The focus of this project is on ESU online graduate students. The study sought to determine online graduate students’: 1) general use of computer technology; 2) use or non-use of the library and/or services of the librarian; 3) patterns and practices in undertaking assignments; 4) strategies for finding sources of information and asking for help; 5) challenges and roadblocks in accessing academic information for assignments; and, 6) connection to the university library. The goal of the study is to improve librarians’ understandings of online college students’ information needs and to begin a dialog using a new theoretical model of online graduate students’ information behavior about how to teach (reach) students and improve online college students’ learning experiences.

Study Participants

Participants in the study were 238 online, graduate students at Emporia State University. Selection of this case was based on the researchers’ theoretical purpose and the relevance of this case to the purpose (Eisenhardt, 1989; Glaser & Strauss, 1967). Also, based on the view of Stake (2005), the case was selected by the research team because of its high potential for learning. Survey data (see Table 1) about participant demographics indicate that participants were 61 men (26%) and 173 (74%) women (4 unknown). Range of age of participants (2 non-responders) was: 98 individuals less than 29 (42%); 93 individuals less than 45 (39%); and, 45 (19%) individuals more than 45 years of age. The majority (183, 76%) of participants reside a minimum of 50 miles from the university. English is the first language of the majority of the participants (228, 96%). Participants (166, 70%) were enrolled primarily in four ESU programs of study (Business (9, 4%); Instructional Design and Technology (27, 11%); Health, Physical Education and Recreation (19, 8%); Education Leadership (21, 9%); and, School of Library and Information Management (90, 38%); and 66 (28%) participants enrolled in other programs in English, History, Physical, Science, Mathematics, Special Education, Early Childhood, Curriculum and Instruction, School Counseling, and Teaching English to Speakers of Other Languages. There were 5 (2%) non-degree seeking participants. Participants indicated that they chose distance education for convenience (178, 75%); fit of schedule (180, 76%); and, quality of program (102, 43%).
Table 1
Summary of Participant Reported Demographics (n=238)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Raw Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1: What is your program of study?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>9</td>
<td>4%</td>
</tr>
<tr>
<td>Instructional Design &amp; Technology</td>
<td>27</td>
<td>11%</td>
</tr>
<tr>
<td>Health, Physical Education &amp; Recreation</td>
<td>19</td>
<td>8%</td>
</tr>
<tr>
<td>Education Leadership</td>
<td>21</td>
<td>9%</td>
</tr>
<tr>
<td>School of Library and Information Management</td>
<td>90 (Excluded from Study)</td>
<td>38%</td>
</tr>
<tr>
<td>I am a non-degree seeking student</td>
<td>5</td>
<td>2%</td>
</tr>
<tr>
<td>Other, please list: English, History, Physical Science, Mathematics, Special Education, Early Childhood, Curriculum and Instruction, School Counseling, Mental Health Counseling, TESOL</td>
<td>66</td>
<td>28%</td>
</tr>
<tr>
<td>Total</td>
<td>237</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 2: At the end of this semester, how many courses (total) in your Major or Degree Program will you have completed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Course</td>
</tr>
<tr>
<td>2 Courses</td>
</tr>
<tr>
<td>3 Courses</td>
</tr>
<tr>
<td>More than 3</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 3: Of the courses that you have completed, how many are online courses?</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
</tr>
<tr>
<td>Some</td>
</tr>
<tr>
<td>One</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question 4: Why did you choose a Distance (online) Education Program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience of location(did not have to move; does not require long drives</td>
</tr>
<tr>
<td>Fits into my schedule</td>
</tr>
<tr>
<td>Quality of program</td>
</tr>
<tr>
<td>Prefer online to face-to-face educational experience</td>
</tr>
<tr>
<td>Other, please specify: cost, choice of faculty</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questions 5: Did you have any online learning experience prior to enrolling in your current online graduate degree?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
Question 6: Where do you live?

<table>
<thead>
<tr>
<th>Location</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the city of Emporia</td>
<td>46</td>
<td>19%</td>
</tr>
<tr>
<td>In Kansas, less than 10 miles from Emporia</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>In Kansas, 11-50 miles from Emporia</td>
<td>8</td>
<td>3%</td>
</tr>
<tr>
<td>In Kansas, more than 50 miles from Emporia</td>
<td>110</td>
<td>46%</td>
</tr>
<tr>
<td>In the U. S., but not in Kansas</td>
<td>72</td>
<td>30%</td>
</tr>
<tr>
<td>Outside of the United States</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>238</td>
<td>100%</td>
</tr>
</tbody>
</table>

Question 7: Is English your first language?

<table>
<thead>
<tr>
<th>Response</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>228</td>
<td>96%</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>238</td>
<td>100%</td>
</tr>
</tbody>
</table>

Question 8: Do you identify with male or female?

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>61</td>
<td>26%</td>
</tr>
<tr>
<td>Female</td>
<td>173</td>
<td>74%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>234</td>
<td>100%</td>
</tr>
</tbody>
</table>

Question 9: How old are you?

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 18</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>18-29</td>
<td>98</td>
<td>42%</td>
</tr>
<tr>
<td>30-45</td>
<td>93</td>
<td>39%</td>
</tr>
<tr>
<td>Over 45</td>
<td>45</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>236</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Data Collection, Analysis, and Writing**

The data collection process in two phases utilized multiple forms of data collection, electronic survey and semi-structured interviews, to incorporate detailed views of informants. During phase one, using the Zoomerang electronic survey tool, a 19 question survey was disseminated to the entire university population enrolled in at least one online course during the spring 2011 semester, a total of 1,477 graduate students. There were 238 (16%) responses to the survey. All respondents participated on a voluntary basis with no compensation. A total of 34 survey participants volunteered to participate in an online, follow-up interview. During time available in phase two, it was possible to schedule 13 interviews ranging in length from 10 to 22 minutes. Interviews consisted of three, open-ended question. Interviews were conducted and recorded using Adobe Connect Pro. Research team members transcribed the statements of the respondents into a structured, word document that was coded to eliminate names or any other identifiable information.

Research team members analyzed the interview documents using directed content analysis (Zhang & Wildemuth, 2009). Initial coding began with a theory of information behavior and relevant research findings of low- and non-use. During the data analysis, the researchers immersed themselves in the data and allowed themes to emerge from the data. Researchers followed a 12-step, integrated approach to analysis, which was adapted by the professor from the work of Krathwoht (1998). The purpose of this was to validate or extend Bates’ conceptual framework. This process is comparable to the constant comparative method (Glaser & Strauss, 1967; Lincoln & Guba, 1985), the most common method for analyzing qualitative data. The data corpus consisted of 35 pages of interview narrative and 218 separate responses to
questions. Coding scheme and categories that emerged from narrative data are organized within Research Sub-questions 1-3.

Findings

Survey data (see Table 2, Question 6) indicated that participants had used numerous technologies in the past two weeks including searching the Internet (232, 97%), Facebook (200, 84%), and e-mail (235, 99%), and were somewhat experienced as distance education students (Table 1, Question 2, 3, 5) with 80 (34%) participants indicating that by the end of the semester 3 courses would be completed in their degree. 148 (62%) indicated that all the courses in their degree are online and 118 (50%) indicated they had online learning experience prior to enrolling in their current online graduate degree. When asked about attending library orientation, 154 (65%) participants indicated that they had never attended a library orientation. More than half the participants (128, 54%) indicated that their library use (physical or virtual) was on average one time per month or less. When asked about asking for assistance, 129 (54%) participants indicated that they had never ask a librarian for assistance to locate information to use in a course assignment, and 200 (85%) indicated that they had never ask a librarian for assistance to evaluate information as to appropriateness for use in a course assignment.

Table 2
Summary of Survey Responses Related to Library Use and Assistance (n=238)

<table>
<thead>
<tr>
<th>Response</th>
<th>Raw Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question 1: On average, how often do you use a library (physical or virtual) for your course assignments?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>15</td>
<td>6%</td>
</tr>
<tr>
<td>1 or 2 times per year</td>
<td>37</td>
<td>16%</td>
</tr>
<tr>
<td>1 time per month</td>
<td>76</td>
<td>32%</td>
</tr>
<tr>
<td>1 time per week</td>
<td>53</td>
<td>22%</td>
</tr>
<tr>
<td>More than 1 time per week</td>
<td>57</td>
<td>24%</td>
</tr>
<tr>
<td>Total</td>
<td>238</td>
<td>100%</td>
</tr>
<tr>
<td>Question 2: Have you ever attended a library orientation session?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>83</td>
<td>35%</td>
</tr>
<tr>
<td>No</td>
<td>154</td>
<td>65%</td>
</tr>
<tr>
<td>Total</td>
<td>237</td>
<td>100%</td>
</tr>
<tr>
<td>Question 3: Indicate technologies you have used within the last two weeks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td>200</td>
<td>84%</td>
</tr>
<tr>
<td>Twitter</td>
<td>46</td>
<td>19%</td>
</tr>
<tr>
<td>YouTube</td>
<td>186</td>
<td>78%</td>
</tr>
<tr>
<td>Flickr</td>
<td>39</td>
<td>16%</td>
</tr>
<tr>
<td>Posted to blog</td>
<td>70</td>
<td>29%</td>
</tr>
<tr>
<td>Search the Internet</td>
<td>232</td>
<td>97%</td>
</tr>
<tr>
<td>Online library resources</td>
<td>173</td>
<td>73%</td>
</tr>
<tr>
<td>Online banking and/or bill pay</td>
<td>204</td>
<td>86%</td>
</tr>
<tr>
<td>Email</td>
<td>235</td>
<td>99%</td>
</tr>
<tr>
<td>Word processing and/or spreadsheet programs</td>
<td>230</td>
<td>97%</td>
</tr>
<tr>
<td>Smart phone (such as Android, iPhone)</td>
<td>97</td>
<td>41%</td>
</tr>
<tr>
<td>Maintained your own server</td>
<td>13</td>
<td>5%</td>
</tr>
<tr>
<td>Purchased an electronic book</td>
<td>38</td>
<td>16%</td>
</tr>
<tr>
<td>Online shopping</td>
<td>183</td>
<td>77%</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>18</td>
<td>8 &amp;</td>
</tr>
</tbody>
</table>

**Question 4:** In a typical semester, what is the average number of times you ask a librarian for assistance to locate information to use in a course assignment?

| 0 | 129 | 54% |
| 2 | 78  | 33% |
| 5 | 20  | 8%  |
| 10 | 7 | 3% |
| 15 | 1 | 0% |
| 16 | 2 | 1% |
| Total | 237 | 100% |

**Question 5:** In a typical semester, what is the average number of times you ask a librarian for assistance to evaluate information as to appropriateness for use in a course assignment?

| 0 | 200 | 85% |
| 2 | 31 | 13% |
| 5 | 2 | 1% |
| 10 | 1 | 0% |
| 15 | 1 | 0% |
| 16 | 0 | 0% |
| Total | 235 | 100% |

**Question 6:** Do you use any of the following online features of a library website?

| Library website | 187 | 88% |
| Library Resource Guides | 84 | 40% |
| Library Facebook | 30 | 14% |
| Library on Twitter | 7 | 3% |
| Library RSS Feeds | 10 | 5% |
| Library iPhone app | 5 | 2% |
| Library on YouTube | 5 | 2% |
| Library on Flickr | 0 | 0% |
| Library databases | 161 | 76% |
| Library citation guides (writing style guides) | 72 | 34% |
| Library FAQ | 33 | 16% |
| Library instant message | 28 | 13% |
| Library e-mail | 41 | 19% |
| Library call (telephone) | 24 | 11% |
| Other, please specify | 11 | 5% |

**Question 7:** When doing a research paper or project, who do you most often ask for assistance?

| Course professor | 94 | 39% |
| Classmate | 38 | 16% |
| Parent | 4 | 2% |
| Librarian | 14 | 6% |
| Practicing professional in my field | 38 | 16% |
| I do not ask for assistance | 50 | 21% |
| Total | 238 | 100% |
When asked as a survey question who was most often asked for assistance when doing a research paper or project, 94 (39%) participants indicated course professor, 38 (16%) classmate, 38 (16%) practicing professional in the field, 14 (16%) librarians, 4 (2%) parents, and 50 (21%) said they do not ask for assistance when doing a research paper or project. Asked about seeking information for a research assignment by using an online or electronic resource (Google, library database, library website, etc.), 92 (39%) participants indicated they find sources of information by accidently encountering pages of interest, 168 (71%) participants followed links to pages that pique their interest, 219 (92%) participants used their own search terms to find information, 157 (66%) participants used “official” search terms or tags that they find listed, 133 (56%) found records or pages matching general, natural language terms (common sense: everyday language), 79 (33%) participants indicated they found specific pages or records using controlled terms or attributers (terms established by the Library of Congress), and 2 (1%) participants indicated they had never browsed electronic resources when doing a research assignment.

Table 3 shows interview responses by categories and topics, total number and percentage of response, and description of response topic for each of the categories of responses. In category 1, sub-question 1, informants addressed the issues of where online students go for course-related research and why students make the choices they do. Responses (85) by category included these topics: active searching behavior including solo and assisted searching (31, 37%), passive searching behavior (47, 55%), and, no searching behavior (7, 8%). In category 2, sub-question 2, informants addressed issues of barriers online students face when accessing information for academic assignments. Responses (55) included these topics: internal barriers (25, 46%), external barriers (26, 47%), and, no barriers (4, 7%). In category 3, sub-question 3, informants addressed issues of student’s perceptions of their own connection to library services. Responses (78) by topic were: belonging (12, 15%), some connection to the university or the library through service and resources (39, 50%), awareness (18, 23%), and, preference for on-line resources (9, 12%).

<table>
<thead>
<tr>
<th>Source of Information Found</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidentally encountering pages of interest</td>
<td>92</td>
<td>39%</td>
</tr>
<tr>
<td>Following links to pages that pique your interest</td>
<td>168</td>
<td>71%</td>
</tr>
<tr>
<td>Using your own search terms to find information</td>
<td>219</td>
<td>92%</td>
</tr>
<tr>
<td>Using &quot;official&quot; search terms or tags that you found listed</td>
<td>157</td>
<td>66%</td>
</tr>
<tr>
<td>Finding records or pages matching general, natural language terms (common sense: everyday language)</td>
<td>133</td>
<td>56%</td>
</tr>
<tr>
<td>Finding specific pages or records using controlled terms or attributers (terms established by the Library of Congress)</td>
<td>79</td>
<td>33%</td>
</tr>
<tr>
<td>I never browse electronic resources when doing a research assignment</td>
<td>2</td>
<td>1%</td>
</tr>
</tbody>
</table>
### Table 3
Responses to Semi-structured Interviews

<table>
<thead>
<tr>
<th>Response Categories And Topics</th>
<th>Total Number and Percentage of Responses</th>
<th>Description of Response Topics (Statement Examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1 (where online students go for course-related research), Sub-question 1: How did you gather information? Where did you look? Who did you ask for help?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active searching behavior (solo and assisted search)</td>
<td>31 (37%)</td>
<td>Google scholar; library site; encyclopedia sites; university library; independent searching. I didn’t need any assistance. It was easier to get what I was looking for without assistance. It was easier to look on my own.</td>
</tr>
<tr>
<td>Passive searching behavior</td>
<td>47 (55%)</td>
<td>Access links provided by course instructor, librarian-provided instruction on searching. It was my first experience writing a research paper. I had some great guidance from course instructor who pointed me to the right direction for resources. What I usually do to get started, is I get information from my teacher you know, my instructor.</td>
</tr>
<tr>
<td>No behavior</td>
<td>7 (8%)</td>
<td>Did not need outside resources. Did not use outside assistance. I prefer to work independently. The librarians just either don’t want to help or they are too busy to help, or they are not quite sure what we are looking for.</td>
</tr>
<tr>
<td><strong>Total Responses</strong></td>
<td>85 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Category 2 (barriers online students face when accessing information for academic assignments), Sub-question 2: As an online student, when writing a paper or doing a research project, what is the biggest challenge in locating academic information?</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal barriers</td>
<td>25 (46%)</td>
<td>Lack of: time, content expertise, student’s lack of confidence; Lack of technical language and skills</td>
</tr>
<tr>
<td>External barriers</td>
<td>26 (47%)</td>
<td>Difficulty evaluating best information; search term confusion; bad links; did not feel links led to up-to-date information</td>
</tr>
<tr>
<td>No barriers encountered</td>
<td>5 (8%)</td>
<td>“I don’t see any roadblocks at all.” “It is not intimidating for me to look for information.”</td>
</tr>
<tr>
<td><strong>Total Responses</strong></td>
<td>56 (100%)</td>
<td></td>
</tr>
<tr>
<td><strong>Category 3 (student’s perceptions of their own connection to library services), Sub-question 3: Given that you are an online student, describe your connection to a university library.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belonging</td>
<td>12 (15%)</td>
<td>Belonging to university community in terms of previous connection such as undergraduate education or current connection including enrollment in concurrent on campus courses.</td>
</tr>
<tr>
<td>Services and resources</td>
<td>39 (50%)</td>
<td>Responses included stated preferences for either library services, including assistance or library resources that were utilized without assistance.</td>
</tr>
<tr>
<td>Awareness</td>
<td>18 (23%)</td>
<td>Non-users of the library are couched into one of two groups: they were not aware of resources or services, or were aware and opted not to use.</td>
</tr>
<tr>
<td>Preferences for Online access</td>
<td>9 (12%)</td>
<td>Users of library services and resources who stated a clear preference for electronic access, rather than paper access.</td>
</tr>
<tr>
<td><strong>Total Responses</strong></td>
<td>78 (100%)</td>
<td></td>
</tr>
</tbody>
</table>
Findings from survey and interview data can be summarized in five hypothetical explanations for low- or non-use of library resources or librarian assistance, and are illustrated in a model of online graduate students’ information seeking (see Figure 1):

1. Low- and non-use of library resources and/or librarians’ services is primarily the result of using only information provided by the instructor. When undertaking an academic assignment, online students engaged in four forms of academic information seeking behavior, which resulted in either use or non-use of library resources and/or librarians’ services. Forms of information seeking that results in use are 1) solo searching; 2) assisted searching (i.e., Bates’ “active seeking,” p. 4.); 3) accessing only provided information (i.e., Bates’ “passive seeking,” p. 4); or 4) no information seeking behavior. Active seeking behaviors included all purposeful, intentional attempts to acquire information beyond the provided course materials, with the assistance of a course instructor, librarian or other external influence. Passive seeking behaviors included accessing only the links provided by the course instructor in the course materials or a librarian. Those exhibiting no behavior either did not need assistance, or chose not to pursue information beyond that provided in the course by the professor. Accessing links or sources provided by the instructor was considered passive behavior. Never asking for assistance by either the course instructor or a librarian is considered no searching behavior.

2. Low- and non-use of library resources and/or librarians’ services is related to a combination of internal and external barriers that online students experience. When undertaking an academic assignment, online students decided to ask, or not to ask for help. Those who did not ask for help encountered barriers that can be categorized into two types: internal barriers and external barriers. Examples of internal barriers are: 1) lack of time to devote to an information need; 2) lack of content expertise; 3) lack of confidence in student’s self; and, 4) lack of technical language and skills. Examples of external barriers are: 1) difficulty in evaluating to determine best sources; 2) search term confusion; and, 3) lack of what the student perceived to be up-to-date information. Those who did not ask for help from either the course instructor or a librarian felt there were not barriers to searching.

3. When undertaking an academic assignment, online students are influenced by their feelings, or lack thereof, of connectedness to the university or to the university library. Students who had completed other degrees on campus or who were geographically close enough to come to the campus expressed feelings of belonging, while students who had not been there or who had not attended any library orientation expressed lack of connection.

4. Online students who successfully complete course assignments and projects, although undirected to do so, are independently watching and alert and dynamically scrutinizing Internet-based sources. Online graduate students in this study had a tendency to go about class directed assignments in the same passive, independent way they approached searching online for information about non-course directed topics or problems. Some online students were highly motivated and seemed to have a back-of-the-mind, undirected and dynamic alertness to things on the Internet that might be pertaining to the class assignment. It was not clear, however, that online students in this study had online social networks that contributed to their information seeking and searching, whether for course assignments or others non-course directed information need.

5. The natural propensity of humans recognized by Bates to collect information passively through absorption or actively through sampling and selection, a generic human behavior, from primarily the face-to-face environment has evolved into a different human propensity, a new brain-based activity making it mentally possible for human beings to assemble information while engaged in the online environment. If this tendency is passive or fraught with mental inactivity, the human is likely to be unable to effectively engage in sampling and selection as was once done when encountering a face-to-face environment. If this tendency is active and dynamic in scrutinizing online information, the human is likely to be able to effectively seek, search and to find meaning. The extent to which an individual must be trained and supported in this kind of intellectual scrutiny is something to be better understood through questions that can be asked and answered using cognitive and/or social psychological theories. This hypothesis should be examined by discovering the social and cultural, along with the underlying biological and physical, layers...
of human experience as Bates indicates is necessary for an integrated model of information seeking and searching.

Figure 1. Dow Research Team Online Graduate Student Information Seeking Model
Development of the Theoretical Model

Bates (2002) asserts that active efforts to acquire information, such as browsing and berrypicking, are applications of a generic human behavior known as sampling and selecting exaptation from original animal food foraging and mating behavior. Searching is one behavior within a general model of human information-related behaviors (searching, monitoring, browsing, and being aware). She suggests that “the human tendency to use the principle of least effort, and more generally to be quite passive in information seeking, may come about because so much needed information has come automatically from the social milieu of most people throughout the history of humanity” (p. 11). “People accustomed to mostly passive ways of learning new information not only have to search actively for the information, they have to master a fair amount of ancillary skills and knowledge just to be able to search for the information, with no guarantee that effort will actually lead to an answer” (p. 7). Bates points out that while much has been done to develop classification, alphabetical catalogs, subject headings and thesaurus terms, online database searching and the World Wide Web, people, even those who are educated, avoid or ignore these access points.

Findings in this study suggest a derivation of Bates’ modes of information seeking (see Figure 2), particularly in the active role of “monitoring” (p. 4), which acknowledges the back-of-the-mind alertness of things that interest a person, as well as alertness for answers to questions one may have. It appears that individuals, such as participants in this study, who have grown up browsing the Internet, for example, do not feel a pressing need to engage in an active effort to gather information, but are content to catch information as it goes by, so to speak, unless they are somehow directed to do so otherwise (e.g. in the case of an academic assignment about a specific topic or problem). Because the layers of understanding in Bates’ “integrated model” (p. 2) need to include psychological factors (spiritual; aesthetic; cognitive; social and historical; anthropological; biological; and chemical, physical, geological, astronomical) brought about in the last decade as a result of new technologies and the gadget-filled 21st century that is changing the ways human brains work, we emphasize them here in a new edition (Figure 1) to the Bates’ model of modes of information seeking.

The new model incorporates Bates’ four human information-related behaviors, and adds an additional dimension, dynamic, which refers to the behavior of the individual who not only does something actively to acquire information, but who does so with vibrant, self-motivation. We also add two more modes of information seeking: scrutinizing, and being alert. Scrutinizing is complementary to Bates’ ideas of monitoring and browsing. Bates points out that monitoring is directed and passive, while browsing is undirected and active. We believe based on the participants in this study that scrutinizing is different from monitoring and browsing. Scrutinizing is dynamic and directed because it happens when an individual using computer technology has a question arising out of a formalized topic or problem, such as an academic assignment, in mind and acts to methodically find an answer. Being alert is dynamic and
sometimes productive yet undirected (without formalized purpose), the result of the experience of using the Internet on a regular and frequent basis, often daily. This revised Bates’ mode model contributes a new layer of human endeavor that takes place online where the front of the classroom is not a chalkboard where the teacher writes and points but the computer screen, and, therefore, has new behavioral, cognitive and psychosocial implications leading to integrated model redux, restored to prominence as we try to better understand today’s online information seeking in relation to information searching.

**Limitations**

We acknowledge that this study is only one study with limitations in its size and duration. We also feel that the findings may be both positively and negatively impacted by the participation of School of Library and Information Studies, Master of Library Science (MLS), students (38%). The MLS students, due to their in-progress, academic and professional education have knowledge of the roles and responsibilities of academic libraries as well as skills in accessing, evaluating, and using both online and paper-based resources. For example, the MLS students in the study could explain why 33% of the participants indicated they found specific pages or records using controlled terms or attributers. While these factors may be strengths in some cases, it is possible, too, that the MLS students do not ask for assistance because they believe, either rightly or wrongly, that they do not need assistance to locate and use information.

**Conclusions**

This study was undertaken by a research team of professional librarians and other information professionals who recognized significant findings in the data that can be used to move toward a more complete understanding of information seeking behavior and can inform understanding of college education in America, particularly about the place of academic libraries and roles of professional librarians in serving online students. The new theoretical models in this study can likely be useful as a framework for further investigations into online information seeking behavior involving computer technologies. The findings in this study also have implications for library services and approaches to improving student’s academic achievement as we think of today’s college students’ online information needs and try to determine what services to offer in academic libraries. We see here how our view of online graduate students in terms of learning they must take in to develop as successful members of today’s society changes our perspective on what they need, and has implications for professional practice. Therefore, we must readjust, if we have not already, understandings of our role at the university and who our students are.

Basic premises in Bates’ theory examined in this study are indicated in the responses of individuals who participated. It appeared that 1) the natural propensity of humans in this study was for the most part to acquire information passively through social, online networks, 2) Online information seekers encountered difficulty in accessing online information resources because of what appeared to be low, or little information literacy skills (e.g., knowing when information beyond the course content is needed; knowing how to access, evaluation, and use information resources in a formal assignment), 3) Online graduate students experienced lack of effective supports during online information seeking and rarely came to the library, or asked librarians for assistance, and 4) Online graduate students appeared to adopt the principle of least effort in seeking and searching for information except in some cases when students reported using some scholarly resources such as Google Scholar, the library’s website and databases, and using technical skills such as control terms in searching.

Libraries must not expect, or wait for, students to ask for help. The saying that students will ask for help if they need it is an outdated and over-emphasized axiom. The idea of a librarian as an academic expert who is available to talk about assignments is not an ideal that students have necessarily accepted. Converting all students to this ideal, and other liberal ideals about higher education such as students should tediously and meticulously pour over texts, will require that we first connect to the sensibility of today’s students. This means that librarians must communicate through many venues with students and their professors or instructors. Course professors and instructors are positioned to assess student’s abilities, or inabilities, to know when information beyond the course materials is needed. There are many occasions in
the context of online and face-to-face courses for libraries to help students develop information literacy skills and to be of assistance in undertaking information inquiry activities.

Librarians can use this theoretical model of online information seeking to advocate for university resources, such as personnel, time, and budgets, to support information literacy instruction that especially targets student completion of class directed assignments. This model also makes clear some topics that must be included when communicating with course professors and instructors, and in designing and implementing library orientation and information literacy skills instructional sessions. Further, the model can be used by students to focus and better understand internal and external barriers to active efforts in sampling and selection of content to be used in class directed assignments. Students may even be reassured by this model that they are not alone in failing to effectively use libraries and the professional knowledge and skills of academic librarians.

We believe creating opportunities to reach (teach) distance students demands partnerships between course professors and instructors and academic librarians. Together, course professors and instructors, along with librarians, have opportunities within the context of online course content to teach students to find evidence to make supported claims, pose new questions, reshape theoretical perspectives, and to propose new solutions to today’s problems. We all must recognize that today’s students have a concept of time that is shaped by their swift experiences in “clicking” a computer mouse and getting immediate responses. Making time to look-around online or in paper documents, and to read multiple articles, is not automatically built into students’ scheduled plans. Today’s students may have grown up with the language of the information age, but they are not necessarily ready for the task of finding and evaluating scholarly sources. And, students’ learning from professors may determine students’ habits and practices in using academic librarians and libraries.
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Contemporary Instructor-Librarian Collaboration: A Case Study of an Online Embedded Librarian Implementation

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Erik Black
University of Florida

This paper reports the results of a case study evaluation of an embedded librarian project at a large, land-grant, research institution. The case is comprised of learners who are full-time academic health care professionals enrolled in an online graduate educational technology program. The mixed methods methodology focused on assessing the embedded librarian’s impact upon the information literacy competency of the participants. Results support the documented literature by indicating that embedded librarians are of value to online students. The course instructor’s experience with the design, development, implementation, and evaluation of the embedded librarian project are emphasized in the presentation, providing unique faculty insight into collaborating with librarians. Recommendations for the assessment of embedded librarian projects include the need for future studies to investigate various contexts and the use of other methodologies to provide stronger empirical evidence.

Introduction

Increasing student enrollments and the emergence of diverse degree programs facilitated through distance and online learning are a notable trend in contemporary higher education (Allen & Seaman, 2010; 2009; 2008). While enrollments are expanding, perception of the quality of online learning is also increasing. The most recent Sloan-C report on online learning indicates that sixty-six percent of chief academic officers perceive the learning outcomes for online learning as “as good or better” than traditional face-to-face instruction (Allen & Seaman, 2010). Increasing enrollments and positive perception illustrates that online learning is transitioning from the boundaries of educational legitimacy to its current status as a valid alternative or supplement to traditional instructional methodologies in higher education (Burder, 1989; Garrison & Shale, 1987; Means, Toyama, Murphy, Bakia, & Jones, 2009; Moore & Kearsley, 2004). Library services and access to library materials are recognized as critical components of the multiple factors contributing to a quality distance and online learning experience (Distance Education and Training Council, 2010). Libraries’ responsibility to service distance and online learners is codified in the Association of College and Research Libraries (ACRL)’ “Standards for Library Services to Distance Learners” (ACRL, 2007). A defining feature of the standards includes the declaration that distant and face-to-face students are entitled to equivalent library services (ACRL, 2007). Librarians have responded to the ACRL standards by planning for and delivering services and instruction for distant learners ((Baird & Wilson, 2002; Black, 2003; Burge, 2002; Burge & Judith, 2000; Burich, 2004a; Burich, 2004b; Cassner & Adams, 2005; Coffman, 2001; Gandhi, 2003; Haynes, 2002; Lorenzo, 2003; Pace, 2001; Perrone, 2000).

Library instruction for distance and online learning has evolved parallel to the transition in general educational practices and is reflective of traditional library instruction. Currently, librarians are providing both “stand-alone” instruction that is not adapted to support a specific course and “course-integrated” instruction that is integrated into a curriculum or a specific course. Examples of current instructional efforts include online tutorials, web pages, path finders, integration into a course management system, synchronous instruction, and more recently online embedded librarians.

Embedded librarianship is a growing practice in academic libraries and as such is documented in the literature and professional associations (Bozeman & Owens, 2008; Edwards, Kumar, & Ochoa, 2010; Dewey, 2004; Dugan, 2008; Freiburger & Kramer, 2009; Hall, 2008; Lillard, Norwood, Wise, Brooks, &
The phrase “embedded librarian” is flexible and can have various meanings depending upon the context. Defined generally, embedded librarians are thoroughly integrated into the college, department, and courses served and provide contextualized support and instruction (Dugan, 2008; Edwards, Kumar, & Ochoa, 2010; Kesselman & Watstein, 2009; Shumaker & Talley, 2009). Course-level embedded librarians can support both face-to-face and online courses using a variety of strategies. Many successful instances of course level embedded librarianship are described in the literature (Bozeman & Owens, 2008; Edwards, Kumar, & Ochoa, 2010; Dewey, 2004; Dugan, 2008; Freiburger & Kramer, 2009; Hall, 2008; Lillard, Norwood, Wise, Brooks & Kitts, 2009; Kesselman & Watstein, 2009; Matthew & Schroder, 2006; Rudin, 2008; Shumaker & Talley, 2009; York & Vance, 2009). One of the defining features of course level embedded librarians is the focus on integrated instruction, regardless of delivery format (face-to-face or online). Embedded librarianship requires close collaboration with teaching faculty and course instructors. Collaboration with a faculty member facilitates the close integration of library content to the needs of a course (Bozeman & Owens, 2008; Chesnut et al., 2009; Dugan, 2008; Hall, 2008; Matthew & Schroeder, 2006; Stewart, 2007; Tennant & Miyamoto, 2002; York & Vance, 2009). Though there have been ample descriptions of embedded librarianship programs, there is a need for methodologically sound evaluations to assess their effectiveness, define best practices and facilitate the progression of professional practice.

This paper describes the evaluation of library services embedded into an online graduate level educational technology course, “Issues in Educational Technology Research.” The particular audience for this embedded librarian project is a unique group of Master’s students who are full time health care professionals enrolled in a part time US Department of Education-funded Masters of Education pilot program known as the OnMed program. OnMed students vary from other types of Masters students because they hold professional doctorates (Medical Doctor, Doctor of Pharmacy, and Doctor of Dental Medicine) and are experienced health professionals. Furthermore, each member of the pilot cohort was employed full-time in an academic medical center and had demonstrated a commitment to education and teaching and learning through the participation in a informal educational certificate program.

Implementation

The librarian was embedded in the eight-week online course EDG 6931 Contemporary Issues in Educational Technology Research. Rather than focusing on specific research methodologies, the course is designed to provide an introduction to and overview of research in educational technology, focusing on critical evaluation of current literature and research. The final deliverable for the course is an annotated bibliography focusing on a research question of interest to the student. Students are heavily encouraged to use the library content, but it is not a course requirement.

In order to design the most relevant and effective instruction, the librarian used the Morrison, Ross, and Kemp (MRK) (2006) instructional design model to plan and develop the instructional content. As the MRK model suggests, the instructional components were heavily influenced by a needs analysis, which was based on a survey of technology comfort administered by the OnMed program coordinators and close collaboration with the course instructor. For this project, the librarian and instructor met face-to-face several times before the course began. In the first meeting the course syllabus and role of the library content was discussed in general terms, as the librarian had not yet planned or designed the instruction. The goal of the first meeting was to learn about the course, expected student needs, and the instructor’s expectations for the course and the library involvement. During the second meeting the librarian had designed the instructional plan, but the specific content was not fully developed. While the course was in session the librarian and instructor communicated electronically to discuss progress and issues as needed. After the course ended a follow-up face-to-face interview explored project outcomes.

From those initial consultations with the instructor, it was determined that library instructional support should include both procedural task-oriented support (e.g. a demonstration of the MeSH browser tool) and higher level cognitive tasks designed to reinforce instructor developed content (e.g. a resource on critical evaluation of research). Based upon the needs analysis, the embedded librarian content was designed to provide both general support for the course and content specific to the course modules for six
weeks of the eight week course. Table 1 includes details on the course modules and library content. All of the library content was delivered asynchronously and featured a variety of formats including LibGuides, videos, demonstrations, discussion forums, a recorded Elluminate/BB Connect session on RefWorks, and an integrated Meebo chat widget to allow for optional synchronous messaging.

Table 1
Course Modules and Embedded Librarian Content

<table>
<thead>
<tr>
<th>Week</th>
<th>Course Module</th>
<th>Embedded Library Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>1) Introduction Forum</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Pre-Assessment</td>
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<tr>
<td>2</td>
<td>Reading Research</td>
<td>1) RefWorks Elluminate Session</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) RefWorks Handout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) What is an annotated bibliography</td>
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<tr>
<td></td>
<td></td>
<td>4) Critical Analysis LibGuide</td>
</tr>
<tr>
<td>3</td>
<td>Research Questions</td>
<td>N/A</td>
</tr>
<tr>
<td>4</td>
<td>Mid-Point</td>
<td>1) Peer Review &amp; Ulrich’s</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) Searching Ulrich’s</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3) Journal Citation Reports Video</td>
</tr>
<tr>
<td>5</td>
<td>Building Your Annotated Bibliography</td>
<td>1) ERIC demonstration video</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2) MeSH demonstration video</td>
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<tr>
<td></td>
<td></td>
<td>3) Why Use MeSH video</td>
</tr>
<tr>
<td>6</td>
<td>Working on your Annotated Bibliography</td>
<td>1) Search Support (including presentation on finding medical education literature and general database search techniques)</td>
</tr>
<tr>
<td>7</td>
<td>Annotated Bibliography</td>
<td>1) Continued search support</td>
</tr>
<tr>
<td>8</td>
<td>Issues and Current Research</td>
<td>N/A</td>
</tr>
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</table>

Methods

The primary research question focused on describing the embedded librarian’s impact on learning and ascertaining how the students’ experienced the embedded librarian. Formally stated, the study asked the manner in which the presence of an online embedded librarian influenced graduate students’ experience in an online educational technology research class as defined by four specific characteristics:

- Self-efficacy related to information literacy and library skills (measured by changes in performance on a pre and post assessment)
- Library skill performance (measured by changes in performance on a pre and post assessment)
- Quality of graduate students’ research (measured by the quality of citations in an annotated bibliography)
- Reflections on the embedded librarian experience and processes of searching for and critically evaluating the literature (measured by….?)
In addition to collecting a variety of data related to the students, data from the course instruction (collected via a post-course semi-structured interview) and from the librarian’s field notes were used as triangulation points. Using a mixed methods case study design allowed the librarian to evaluate the program and answer questions about how and why the program works (or doesn’t work) (Yin, 2009). Quantitative assessment strategies included a pre/post survey designed to gauge both perceived self-efficacy with library resources and actual library skill performance. Additional quantitative assessments focused on measuring the quality of the student research as measured by citation analysis to provide indirect evidence of learning. Qualitative data sources included written student reflections, a post-course instructor interview, and the librarian’s observations during the course.

In order to measure students’ self-efficacy with library resource and information literacy concepts, a twelve-item instrument designed by Monoi, O’Hanlon and Diaz (2005) was adapted with permission. The instrument was aligned to learning outcomes described by the ACRL Information Literacy Standards and has been thoroughly validated. A full description of the design and development of the instrument is included under the methodology review heading. In addition to the self-efficacy scale, the pre/post-tests included four items designed to measure students’ performance on library related tasks.

The information literacy/library skills assessments were administered through an online survey (Zoomerang) during the first and last weeks of the course (weeks 1 and 8). Responses were paired by the course instructor and de-identified prior to sending to the embedded librarian. Descriptive and inferential statistical analysis methods allowed for a thorough understanding of the data and investigation of a change in performance after the embedded librarian program is complete. Unpaired data was disregarded and paired t-tests were conducted on the remaining data to measure individual change before and after the intervention.

Students’ written artifacts (in the form of an annotated bibliography) were evaluated by the librarian researcher with rubrics (used with permission from a similar study by Tunon and Brydges (2006)) to make comparisons between participants and non-participants. The two rubrics used in the citation analysis procedure provide both objective and subjective assessment of the references without evaluating how the citations were used within the body of the assignment.

In the embedded librarian evaluation project, citation analysis (used as a measure of quality of student learning) included general descriptive analysis of the citations in the annotated bibliography assignment that focused on citation patterns, such as the mean age and frequency of references. The objective rubric assessed a point value to each reference (according to criteria such as age, type of reference, etc.) and a total score for each reference list was calculated. The subjective rubric measured the quality of reference lists through expert review of the references on criteria including breadth, depth, and appropriateness for the topic.

Citations were processed and analyzed using a procedure similar to the one employed by Tunon and Brydges (2006), with some modifications allowing for the shift from dissertation reference list (used by Tunon and Brydges) to annotated bibliography assignment and the overall purpose of the analysis. Specifically, the purpose of the Tunon and Brydges analysis was comparative, while the purpose of this analysis is strictly descriptive.

The citations were gathered from anonymous participant generated annotated bibliographies. Each citation was assigned a unique alpha numeric identifier that included a single letter to identify the annotated bibliography document (A-F for six individual bibliographies) and a number referencing the order the citation appeared in the bibliography. Once the citations were categorized, each citation was scored according to both rubrics. In addition to scoring each citation separately, a compiled score was generated for each annotated bibliography by computing the mean scores of the citations included in the bibliography. SPSS version 19 was used to provide descriptive statistics on the citations and bibliographies, and the results are reported in next section.

Qualitative data sources focus on narrative reflections in the form of participant narrative responses to questions designed to elicit reflective feedback. The qualitative data was analyzed with a
grounded theory approach (Glaser & Strauss, 1967) to explore themes and develop core variables to describe students’ experiences with the embedded librarian, which includes instructional content and the prolonged presence of a librarian within the course. Analysis was facilitated by the use of the software, NVivo9. NVivo was useful for creating first level codes and querying the coded data to facilitate the development of patterns and themes. Participants were asked to respond in writing to the following questions:

- What role did the librarian (who offered instructional support and assistance) play in your process of completing the annotated bibliography assignment (describing research questions, refining your question, searching for literature, and finally evaluating and synthesizing the literature)?
- In what ways/How did your prior experiences in clinical research and literature searching influence your completion of the annotated bibliography assignment and use of the embedded librarian support?

Reflections were submitted to the course instructor in writing, de-identified, and forwarded to the researcher for analysis. One of the benefits of having the participants respond in writing is that the data did not require transcription and subsequent member checking to determine accurate representation.

While most of the data collection strategies focused on describing the learners’ experiences with the embedded librarian, it was important to consider the course instructor’s perspective to provide a holistic description of the embedded librarian project. A post-implementation, semi-structured interview was conducted to provide qualitative feedback. The interview was conducted face-to-face, recorded electronically, and transcribed. To follow quality qualitative research protocol, the interview transcript was sent to the course instructor for member checking. The transcript was coded using an open approach and analyzed thematically. Informal field notes were used in order to document the experiences of the librarian researcher. Notes were organized by week and recorded in a web-based document tool, Google Docs.

All data, quantitative and qualitative, were analyzed and triangulated to evaluate the success of the embedded librarian program and describe the experience. Analysis (including development of first and second level codes and thematic analysis) of the participant reflections was discussed and verified with an external qualitative researcher to increase validity.

Findings

Seven students were enrolled in the eight-week course, some of whom availed themselves of the embedded library resources and provided feedback. While direct interaction with the students was limited (one question was received, and it came during the last week of the course), analysis of the Moodle access log data shows that the instructional elements were viewed, in many cases multiple times by the same individuals. Table 2 displays the access information for the library content. The most heavily viewed resources included the ERIC demonstration (11 views), the peer review and Ulrich’s resource (9 views), the MeSH demonstration (7 views), and the OnMed Libguide (7 views).
Table 2

Instructional Material Access

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>Times Accessed</th>
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<tbody>
<tr>
<td>VPN Installation Video</td>
<td>2</td>
</tr>
<tr>
<td>Library Help</td>
<td>2</td>
</tr>
<tr>
<td>OnMed LibGuide</td>
<td>7</td>
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<tr>
<td>Refworks Handout</td>
<td>6</td>
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<tr>
<td>Refworks Eliminate</td>
<td>0</td>
</tr>
<tr>
<td>Searching Ulrich's</td>
<td>7</td>
</tr>
<tr>
<td>Peer Review &amp; Ulrich's</td>
<td>9</td>
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<tr>
<td>JCR Video</td>
<td>4</td>
</tr>
<tr>
<td>ERIC Demonstration</td>
<td>11</td>
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<tr>
<td>MeSH Demonstration</td>
<td>7</td>
</tr>
<tr>
<td>Search Support</td>
<td>6</td>
</tr>
</tbody>
</table>

The descriptive statistics for the pre-test scores shown in Table 3 indicate that the most frequently occurring confidence value is 2.0, demonstrating that, for all 14 Likert-scale questions, respondents fell between not confident and neutral, with a high level of variance in scores (.850). Post-test scores demonstrated a much lower amount of variance (.216) and a mode falling between confident and very confident. The null hypothesis for the paired t-test was that the pre-test and post-test means were equivalent, and the alternate hypothesis showed the pre- and post-test means were not equal. Results indicate that there was a significant difference in the scores for the pre-tests (M=3.06, SD=.92) and post-test scores (M=4.23, SD=.46); (t(13)=-7.17, p = .000)). Due to the p value, the null hypothesis is rejected, meaning the pre-test means did not equal the post-test means. Statistically significant results indicate an increase in information literacy self-efficacy as measured by the assessment.

Table 3

Pre-Post Assessment: Descriptive Statistics

<table>
<thead>
<tr>
<th>Participant</th>
<th>Test</th>
<th>n</th>
<th>Mean</th>
<th>Δ Mean</th>
<th>SEM</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
<th>Variance</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pre</td>
<td>7</td>
<td>2.214</td>
<td>.714</td>
<td>.3156</td>
<td>2.000</td>
<td>3.0</td>
<td>1.1883</td>
<td>1.412</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>7</td>
<td>2.928</td>
<td>.2864</td>
<td>.2616</td>
<td>2.500</td>
<td>3.0</td>
<td>1.0716</td>
<td>1.148</td>
<td>3.00</td>
</tr>
<tr>
<td>2</td>
<td>Pre</td>
<td>7</td>
<td>3.571</td>
<td>1.143</td>
<td>.216</td>
<td>3.500</td>
<td>3.0</td>
<td>1.0165</td>
<td>1.033</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>7</td>
<td>4.714</td>
<td>.1252</td>
<td>.166</td>
<td>5.000</td>
<td>5.0</td>
<td>.4681</td>
<td>.220</td>
<td>1.00</td>
</tr>
<tr>
<td>3</td>
<td>Pre</td>
<td>7</td>
<td>2.243</td>
<td>2.643</td>
<td>.3805</td>
<td>2.000</td>
<td>2.0</td>
<td>1.4238</td>
<td>2.027</td>
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<td></td>
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<td>.050</td>
<td>5.000</td>
<td>5.0</td>
<td>.3634</td>
<td>.132</td>
<td>1.00</td>
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<td>Pre</td>
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<td>.859</td>
<td>.3722</td>
<td>4.000</td>
<td>4.0</td>
<td>1.3926</td>
<td>1.940</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>Post</td>
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<td>4.428</td>
<td>.2020</td>
<td>.050</td>
<td>5.000</td>
<td>5.0</td>
<td>.75593</td>
<td>.571</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Key: 1= Not Confident, 2= Somewhat Confident, 3=Neutral, 5= Confident, 5=Very Confident, N=number of questions
In addition to performing statistical analysis for the mean scores of all participants for each Likert item, a mean score (for all the Likert items) was calculated for each participant. The descriptive statistics for pre- and post-tests for each participant are illustrated in Table 3, while Table 4 illustrates the paired t-test data. Data indicates that in all cases, there was a positive increase between the pre and post-test and the exact change in mean scores ranges from .714 to 2.65.

Table 4

Pre-Post Assessment: Pair T-Test

<table>
<thead>
<tr>
<th>Test</th>
<th>n</th>
<th>Mean</th>
<th>SEM</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
<th>Variance</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
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<td>3.058</td>
<td>.2464</td>
<td>2.875</td>
<td>2.0</td>
<td>.2231</td>
<td>.850</td>
<td>1.17</td>
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<tr>
<td>Post-test</td>
<td>7</td>
<td>4.252</td>
<td>.1242</td>
<td>4.375</td>
<td>4.5</td>
<td>.4647</td>
<td>.210</td>
<td>1.75</td>
</tr>
</tbody>
</table>

Key: 1=Not confident, 2=Somewhat Confident, 3=Neutral, 4=Confident, 5=Very Confident, N=number of questions

In an effort to evaluate self-efficacy, the assessment also contained items requiring participants to utilize library resources to complete various tasks. Participants were asked to locate electronic access to a specific journal title and specify the dates available, use a database of their choosing to find an article on blended learning in undergraduate medical education, and use the library catalog to find a book in electronic format. The performance results for the first question regarding electronic access to a journal indicate that there was a 33.4% increase in correct responses between the pre and post assessments.

Pre-test results from this question “Using the library catalog find an electronic book on the topic of blended learning” demonstrated reliance on general sources including Google Scholar with no mention of the use of subject headings. In the post-test, all respondents indicated that they used a library database, and two mentioned the use of subject headings (MeSH), demonstrating improved search performance. The final performance item required participants to use the library catalog to find an ebook on a specific topic (blended learning), and all participants were able to complete this task satisfactorily in both the pre- and post-implementation assessments.

The citation analysis used two validated rubrics to assign a numerical value to citations based on specified criteria. Analysis of the citations from the annotated bibliography indicated that students used high quality sources. Both objective and subjective scores for all bibliographies were relatively high. Objective scores ranged from 2.75 to 2.9 (3.0 was the maximum score) and subjective scores ranged from 17 to 20 (out of a total of 20 points available). See Tables 5 and 6 for a summary of citation scores and a breakdown of the descriptive statistics. Almost all citations used in the annotated bibliography assignment were from peer-reviewed publications, and the primary variance in the citation categories was in the currency of the articles. When the bibliographies were analyzed with the subjective rubric criteria, the primary areas of variance included the currency of articles and the relevancy to the research question.

All participants completed reflections, and the reflective data was analyzed for themes to develop a theory of how the presence of a librarian influenced participants. To increase validity, an external researcher verified that the data analysis procedure was appropriate and voiced no dissent with either the first and second level codes or themes that emerged from the data.

An analysis of participant reflections revealed several major themes, including: the nature of the annotated bibliography assignment and critical analysis required in the annotations, use of the library instructional materials, the literature search process in general and specifically the search terms and strategies used within the process, and the process of finding useful and relevant articles.
Annotated Bibliography and Critical Analysis

A number of the responses discussed the nature of the annotated bibliography assignment and strategies used to approach the assignment. While the concept of an annotated bibliography was foreign to many of the participants, the intent of analysis and synthesis of the research was familiar, and participants compared the process to familiar tasks such as writing a literature review for an article manuscript. In addition to strategies regarding the annotated bibliography assignment, participants commented on the critical analysis aspect of the assignment stating how the analysis of articles influenced their decisions and research.

Library Instructional Materials

One of the prevalent themes in the reflections was the customized library instructional content. Librarian-created instructional videos were mentioned in all participants’ reflections with generally positive remarks. A minor theme associated with the instructional content was the reduction of search anxiety as a result of viewing the materials. One comment in particular highlighted a reduction in search anxiety after viewing the library instructional content: “Overall, I definitely experienced much less anxiety about the

<table>
<thead>
<tr>
<th>Bibliography ID</th>
<th>Objective Rubric Score</th>
<th>Subjective Rubric Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.75</td>
<td>17</td>
</tr>
<tr>
<td>B</td>
<td>2.79</td>
<td>18</td>
</tr>
<tr>
<td>C</td>
<td>2.9</td>
<td>20</td>
</tr>
<tr>
<td>D</td>
<td>2.85</td>
<td>17</td>
</tr>
<tr>
<td>E</td>
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<td>19</td>
</tr>
<tr>
<td>F</td>
<td>2.85</td>
<td>17</td>
</tr>
<tr>
<td>Mean</td>
<td>2.835</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Objective Rubric (n=7)</th>
<th>Subjective Rubric (n=7)</th>
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<tbody>
<tr>
<td>Mean</td>
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<td>18.00</td>
</tr>
<tr>
<td>SEM</td>
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<td>0.5164</td>
</tr>
<tr>
<td>Median</td>
<td>2.850</td>
<td>17.50</td>
</tr>
<tr>
<td>Mode</td>
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<td>17.00</td>
</tr>
<tr>
<td>SD</td>
<td>0.0550</td>
<td>1.265</td>
</tr>
<tr>
<td>Variance</td>
<td>0.003</td>
<td>1.600</td>
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<tr>
<td>Range</td>
<td>0.15</td>
<td>3.0</td>
</tr>
<tr>
<td>Legend</td>
<td>Out of 3.0 points</td>
<td>Out of 20 points</td>
</tr>
</tbody>
</table>

Table 5
Citation Analysis: Summary

Table 6
Citation Analysis: Descriptive Statistics
literature search with a good research question in hand and with a few of the tips I picked up from the instructional tutorial on annotated bibliographies” (OnMed reflections, lines 122-126).

A significant theme within the reflections concerns the use of search terms and construction of search strategies. While some participants voiced experience and confidence with their literature searching ability (literature searching in general, not necessarily the use of search terms to construct search strategies), others expressed a lack of confidence and anxiety about the search process. To further complicate matters, some participants expressed both sentiments in the same reflection. One particularly enlightening comment related that while the participant was comfortable with searching for clinical literature, searching for educational literature was different and introduced a certain level of anxiety: “The experience as a clinician and literature searching tricks were helpful, however, when you branch into a new field of vocabulary and research I felt lost especially when it feels abstract in addition to new territory of design and methods” (OnMed reflections, lines 161-164).

Finding useful and relevant articles

The final major theme uncovered is related to the literature search process in general and is also a component of critical analysis. One of the final steps in the literature search is the ability to not only find results, but to find results that are both useful and related to the topic in question. Several participants commented on this topic, and the relevance of citations to the research topic was one of the subjective criteria in the citation analysis. One particularly interesting comment describes the difficulty of finding relevant articles as a function of the massive increase in scholarly publications in recent years: “literature on it [my research topic] has literally exploded so it is hard to sort through what is relevant and what is not” (OnMed reflections, lines 49-50).

Themes from the instructor interview include an emphasis on the quality of participant annotated bibliographies, the use of library instructional materials, limited interaction between the students and librarian, and finally the literature search capabilities of the participants.

Quality of participant annotated bibliography assignments

In discussion of the quality of student assignments, the instructor commented: “I was pleasantly surprised with the majority of the products that were produced” (instructor interview, lines 22-23), and “I felt that if I was to compare the product, the annotated bibliography products I think that they were more on par with what I would see from a first year doc student rather than what I see from masters students” (instructor interview, lines 23-25).

Library instructional materials

Comments regarding the instructional materials describe the quality of the learning objects: “I think the materials that you developed were not just instructionally sound from a librarianship perspective, but also from an instructional design perspective” (instructor interview, lines 14-16). When the interviewer/librarian researcher noted that the log data indicated usage of the instructional materials, the instructor supported that observation: “Students did use the resources” (instructor interview, line 353).

Limited interaction between students and librarian

Another theme to emerge from the post-course interview concerned interactions between the embedded librarian researcher and the course participants. Specific comments that support this theme include: “I was assuming that many of the students also had issues of interface [with librarians] and that students were not interfacing and that at a minimum they would begin to establish relationships [with the librarian] on their own” (instructor interview, lines 19-21) and “I’m not sure again because of the limited interaction of the course, because of how much they interacted with the embedded librarian and I don’t think that’s a proxy of the embedded librarian, I think that’s a consequence of the low enrollment” (instructor interview, lines 343-345). The theme of limited interaction is further analyzed in the discussion section.
**Literature search capabilities of the participants**

In a discussion of faculty literature search patterns, the course instructor commented: “I think like many other faculty members I struggle to try to figure out when I should be interfacing with the academic librarians myself and probably as guilty as the next person of underutilizing and being over confident in my abilities to appropriately search” (instructor interview, lines 7-10).

Many of the themes uncovered in analysis of the interview data are related to the influence of the embedded librarian on the course participants, but an important consideration in an embedded librarian project is the collaboration between the course instructor and librarian. The librarian researcher took the opportunity when interviewing the instructor to elicit feedback regarding not only the collaboration during this embedded librarian project, but also future collaborations between teaching faculty and academic librarians. Further discussion of this theme will be used to triangulate the case study data in the next section.

**Discussion**

In a mixed methods case study, the diversity of data (both sources and types) require that the data be triangulated to construct and support working theories concerning the librarian’s influence (Yin, 2009). Of the four types of triangulation discussed by Patton (2002), triangulation of data sources was conducted in this study because all the data is aimed at corroborating the impact of the embedded librarian. Primary data sources include Moodle access log data, pre and post-test scores, citation analysis data, and reflective data. Additionally, the instructor interview and librarian researcher’s informal observations (documented in a Google docs log) assisted with data triangulation and served as check points to inform the findings.

Moodle log data supports the reflective data concerning library instructional materials, and both sources indicate that learners accessed the materials. Participants’ commented specifically on their use of the library instructional videos: “I did use the brief educational segments by the librarian…about ERIC, etc” (OnMed reflections, lines 35-36), which is demonstrated by the number of times the materials were accessed. As an additional data point, the course instructor’s perspective regarding the instructional content is consistent with both the log data and the narrative reflections. Additionally, the instructor reflected upon not only the use of the instructional materials, but their quality and the idea that they were instructionally sound: “I think the materials that you developed were not just instructionally sound from a librarianship perspective, but also from an instructional design perspective” (instructor interview, lines 14-17). It is evident from analyzing both data sources (Moodle log data and participant reflections) that the instructional content was utilized, and this observation was supported by the course instructor.

By analyzing the pre- and post-test results, it was determined that prior to the embedded librarian experience, information literacy self-efficacy scores were comparatively low contrasted to the post-test scores (the pre-test scores ranged from 2.21 to 3.57 where post-test score ranges from 2.9 to 4.7), which reflects moderate confidence in information literacy skills. On average, the difference between pre-test and post-test scores was 1.17. This quantitative data outcome is supported by the participant reflections as several commented specifically on low searching confidence and/or anxiety with literature searching: “I find the literature search quite daunting” (OnMed reflections, lines 110-111). Post-test results that demonstrate increased confidence is supported by the findings from the citation analysis, which indicate that participants used high quality peer reviewed sources.

An additional theme from the data analysis concerns the literature search process, specifically, difficulties in locating relevant articles. Several participants commented that: “The biggest challenges I had with this assignment was finding literature on electronic medical records relevant to my research” (OnMed reflections, lines 49-50), and this was observed in the subjective citation analysis results, as some citation lists received 3 out of 4 points for article relevancy.

Scores for the citation analysis (both objective and subjective measures) were consistently high, demonstrating that the participants used high quality sources in their annotated bibliography; however, it is
not possible to correlate the high quality bibliographies with the embedded librarian or any other single factor. The course instructor also noted the high quality of student submissions and suggested that students’ status as experienced academic health care professionals is one possible explanation (instructor interview, lines 23-25; 353-358). One of the citation analysis criteria is related to the type of resource cited, with peer reviewed articles receiving the highest point value. The library instructional content directly addressed this, as one of the videos demonstrated how to use a tool to determine the peer review status of a publication. Student reflections commented on the usefulness of that specific video, which provided further empirical evidence to support the usefulness of the embedded librarian.

While the research question focused on the embedded librarian experience from the students’ perspectives, the variety of data (including the instructor interview and librarian researcher’s field notes) lent itself to additional findings related only tangentially to participant experience. One of the significant findings related to faculty collaboration for course integrated and embedded instruction. The course instructor supported collaborations and made recommendations for future collaborations:

but I don’t think it would be unreasonable to potentially assign folks to specific courses. Maybe not in the context we’re talking about a course of seven people, but what about for large courses, for pharmacy for dentistry, medicine and not just online courses, but face to face courses. If anything you could collaborate with the instructor and strengthen their materials (interview, lines 239-243).

Related to faculty library collaboration is the idea of creating customized library instructional content. Content in the OnMed embedded librarian case study was created specifically for academic health faculty researching clinical as well as educational topics. Without the collaboration between librarian and course instructor, access to the course syllabus and content may not have occurred as early in the design process, if at all.

Collaboration with the course instructor and a detailed review of the course content allowed the librarian to capitalize on knowledge of both the subject matter and the course content as well as information science centric domain knowledge. An example of the benefit of librarian/instructor collaboration is demonstrated in the post course interview. A discussion of levels of evidence and the hierarchical nature of publications turned into a discussion of primary versus secondary sources and lead to the instructor’s recognition of the necessity of reinforcing that concept for students.

Primary findings relate to the positive impact the embedded librarian had upon participant information literacy self-efficacy, the “presence” or lack thereof of the embedded librarian (specifically relating to interactions with the librarian), and faculty librarian collaborations. Presence in the context of an embedded librarian refers to the prolonged availability of the librarian within the course and interactions between the librarian and learners (Dugan, 2008; Hall, 2008; York & Vance, 2009). Interaction in the general sense of an online course refers to the various types of interactions in a distance or online course described by Michael Moore (1986). Each of these specific themes will be discussed in relation to the literature after a discussion of the broad theme of the online embedded librarianship literature and the findings of this case study.

Best practices described in York and Vance’s (2009) review of librarians embedded into online courses focused on linking the librarian with the CMS (course management system), careful selection of courses in which to embed the librarian, active librarian participation in the course, and marketing the service to other faculty members. Many of these recommendations were integrated into the design of the embedded librarian implementation developed for the OnMed course, thus providing additional supporting evidence for the usefulness of York and Vance’s literature analysis recommendations.

In order to investigate the efficacy of various levels of course level embedding, Bowler and Street (2008) designed several experimental face-to-face embedded librarian instances with differing levels of integration. The researchers found that a higher level of librarian integration with more student interaction with the librarian resulted in a significant improvement in student scores on a standardized information literacy rubric. The Bowler and Street findings indicate that a high level of integration and presence is
preferred; however, the research was conducted in a traditional face-to-face classroom, and the extendibility of these findings to online courses has yet to be investigated. Despite this difference in setting, these results do not support the findings in the OnMed case, which indicate that presence is not as influential as customized instruction.

The Lillard et al. (2009) embedded librarianship implementation served a dual purpose: to prepare library and information graduate students (nascent librarians) to serve as online embedded librarians and to investigate embedded librarianship in online graduate nursing courses. The authors found that the experience was generally positive for the student embedded librarians, graduate nursing students, and faculty. Key conclusions from this project reinforce York and Vance’s (2009) recommendations regarding course selection and collaboration.

Feedback from the nursing students enrolled in courses with embedded librarians indicates that the usefulness of the embedded librarian was related to the course topic and where in the curriculum the course occurred. Several students commented that the instruction and embedded librarian experience would have been more beneficial if it had occurred earlier in their program (Lillard et al. 2000). These findings could inform findings from the OnMed embedded librarian case. While the EDG 6931 course occurred relatively early in the OnMed curriculum (in the second semester) and the Lillard findings suggested that early placement is beneficial, students’ status as experienced health care professionals could have influenced their use of the embedded librarian. Their prior experience provided them with more opportunities for library instruction, and the practice of evidence-based medicine provided opportunities to apply information literacy skills emphasized by the embedded librarian. The “experience factor” involved with the OnMed students was also noted by the course instructor when he commented that the level of work they produced was similar to that of first semester doctoral students rather than beginning Masters students (instructor interview, 23-25; 353-358).

Data from the library student reflections in the York and Vance (2009) study indicated their experience as embedded librarians was directly related to the amount of communication between themselves and the faculty instructor and the freedom of communication allowed between the librarian and nursing students enrolled in the course. Clearly in the York and Vance instances of embedded librarianship, the experience of the “librarian” and the overall “presence of the librarian” in the courses were influenced by interactions with the students. The issue of librarian presence within the course and interaction with the students was a key finding for the OnMed study and warrants further investigation.

Implications

Results and implications in this study inform practice in several areas and are discussed in terms of Kirkpatrick’s Evaluation Model (Kirkpatrick & Kirkpatrick, 2006). The Kirkpatrick Model was developed in the 1950’s by Donald Kirkpatrick to evaluate training programs and includes four evaluation levels (Kirkpatrick, 1959a; 1959b; 1960a; 1960b). Level One is the most basic and assesses the learners’ reactions to the training; Level Two assesses learners’ knowledge gained as a result of the training; Level Three assesses the extent to which the training influenced learners’ subsequent behavior; and Level Four assesses outcomes and results based on the training. The four levels can be thought of in a hierarchical manner with Level One at the bottom and Level Four on top. Kirkpatrick’s Evaluation Model was selected for this project particularly because it is a commonly used model (Alliger & Janak, 1989; Cascio,1987) that may resonate with stakeholders interested in the results of this study. Implications are categorized broadly into three areas: implications for the practice of librarianship, administrative and policy implications, and educational and curricular implications. Of these three areas, implications for professional practice, is the most relevant to library science outside the specific context of the University of Florida Health Science Center and is discussed in detail. Administrative and policy implications relevant to academic librarianship are also described.

Implications for Academic Librarianship

Findings from this and other studies support the efficacy of embedding librarians into online courses (Bowler & Street, 2008; Edwards, Kumar, & Ochoa, 2010; Lillard et al., 2009; York & Vance,
However, the findings highlight the necessity of careful consideration of the course and audience prior to initiating an embedded librarian and during the designing of the embedded librarian content. Prior to planning and implementing an online embedded library program, librarians must carefully consider the curriculum to select appropriate courses, collaborate closely with instructional faculty, and employ an instructional design plan that includes a thorough needs assessment. It is imperative that the design of the embedded library content, including instructional materials and interactions, be tied to the needs of the learners and the course. For example, an entry level online undergraduate course that was designed to be highly interactive may require more “presence” from an embedded librarian than an online graduate course with highly experienced learners.

In order to maximize student impact while balancing the time investment necessary for embedded librarian projects, librarians should work closely with the course instructors to assess the needs of the course and learner characteristics prior to implementing an embedded librarian program that features interaction with the librarian. In addition to careful course selection and instructional design, librarians embedding themselves in online courses should familiarize themselves with strategies used to increase learner interactions and best practices for establishing an online teaching presence.

Implementing the recommendations above will help to make the embedded librarian design and development process more efficient and effective; however, there is still an intensive time commitment required. There is the potential for librarians to be overwhelmed with meeting the needs of students enrolled in the course with an embedded librarian and balancing other responsibilities. For example, in one instance of an embedded librarian in the HSC library, the librarian is integrated into the foundational course for the online professional program in the college to which she liaises. The librarian interacts with students in the foundational course but is also responsible for supporting the needs of the entire program (approximately 600-800 students) and the college at large, which includes several other large programs in addition to the faculty members. Given the large number of potential users this liaison librarian supports, a high level of involvement in the course in which she is embedded can be overwhelming and lead to increased stress and potentially decreased effectiveness. The conditions in which a librarian can successfully embed in a course and the degree of integration must be determined by the librarian, library administration, and the faculty and administration in the college and/or program in which the embedding will occur.

In addition to these recommendations for practicing librarians, the study has implications for the education of practicing and future librarians. Embedded librarianship as demonstrated in this study (librarians embedded into courses or the curriculum) requires a set of skills that the librarian researcher, but not necessarily all academic librarians, possesses including knowledge of instructional design models, learning theories, and educational technology. Steven Bell and John Shank (2004) describe librarians with these skills as “blended librarians.” A blended librarian is: “an academic librarian who combines the traditional skill set of librarianship with the information technologist’s hardware/software skills, and the instructional or educational designer’s ability to apply technology appropriately in the teaching-learning process.” Academic libraries are acknowledging this need by actively recruiting librarians with these skills. An analysis of position advertisements demonstrates that fewer than twenty-four library job announcements in 2003 used the phrase “instructional design/er” and of that total there were only 10 announcements that were not reposting earlier advertised positions (Shank, 2006). The Shank study analyzes the knowledge, skills, and abilities described in the position descriptions to define key characteristics for librarians whose primary responsibilities focus on educational technology and instructional design. In seeking to hire instructional technology librarians and reference and instructional librarians with some instructional design skill, academic libraries are responding to the shifting nature of academic librarianship. Clearly academic libraries recognize the importance of instructional skills, but when, how and where do librarians acquire these skills?

Options for providing these instructional skills fall into two broad categories; educating future librarians and educating practicing librarians. A broad, far-reaching solution involves changes to the graduate school curricula for library and information science programs. An examination of the course listings of the graduate school programs listed by US News and World Report in their “Best Graduate Schools” reveals that, with the exception of media specialist certification requirements, a minority of the
Master’s Degree programs do not include instructional design or educational methods courses. As academic librarians are increasingly engaged in designing and delivering instruction, formal preparation in learning theories, instructional design and pedagogy/andragogy would more fully prepare librarians for their instructional roles.

While this is an optimal strategy for library education, curricular changes require large scale institutional adjustments and take time to plan and implement. Therefore, it is important to continue to provide practicing librarians with opportunities to develop and cultivate instructional knowledge and skills. This continuing education can occur at various levels including within the library, on campus, and through regional, national, and international conferences and professional organizations. Libraries sponsor and facilitate professional development on a variety of topics, which should include quality offerings designed to provide both theoretical and practical knowledge and skills relevant to instruction.

Another source of professional development and support that should not be overlooked includes campus based resources, instructional centers and institutes, similar to the University of Florida’s Center for Instructional Teaching Technology (CITT). UF’s CITT provides faculty with training on a variety of instructional design and technology topics. In addition to offering training, CITT staff also provides instructional design and development support to produce instructional content. Academic librarians should make use of these local sources of continuing education and professional development, which are often provided at low or no cost to the individual, to enhance their instructional knowledge and skills.

Beyond these readily available, economically feasible continuing education options there are additional sources at the national and international level. Professional organizations, both library and non-library organizations, are an important source of training opportunities. An example of an established, high profile program is the Association of College and Research Libraries’ Information Literacy Immersion Program. According to their website, the goal of the immersion program is to provide librarians with a training experience designed to supplement their teaching, instructional program planning, reflective teaching and assessment skills – specifically relating to information literacy concepts:

ACRL’s Immersion Program provides instruction librarians with the opportunity to work intensively on all aspects of information literacy. Whether your institution is just beginning to think about implementing an information literacy component or whether you have a program well under way, the Immersion Program will provide your instruction librarian with the intellectual tools and practical techniques to help your institution build or enhance its instruction program (ACRL, 2011).

While anecdotal evidence from practicing librarians support the efficacy of these programs, registration fees range from $1,875-$1,975 depending upon membership status, and the high cost can be prohibitive. Therefore, it’s important for librarians to consider other avenues of continuing education including sessions offered at professional conferences. Conferences offer formal continuing education opportunities in the form of workshops and informal development from conference presentations. In many academic libraries attendance and participation in professional conferences is required or highly recommended and with varying amounts of financial support allotted. By coupling conference attendance with formal and informal continuing education in a conference setting, librarians maximize the time and financial investment required for those activities. Another option for academic librarians serious about gaining instructional design knowledge and skill involves taking credit bearing graduate level course work beyond that required for the library science degree. This can be done through a college of education for either a post-graduate certificate or for an additional graduate degree. Colleges of education, including the University Of Florida College Of Education, are offering increasing numbers of certificate and Master’s degree programs online targeting practitioners.

Findings from this case study indicate that high quality embedded librarian programs positively influence student outcomes, and in order to design and develop successful implementations, academic librarians need to be able to acquire and develop their instructional knowledge and skills, formally and informally.
This study evaluated a single use case of an embedded librarian instance. While results demonstrate benefit to both the students and the instructor, the benefit was limited to a very specific group of users, and the overall impact of the librarians’ time and intellectual investment is undetermined. In order to increase the institutional impact of course integrated embedded librarians, similar projects would need to be implemented in other colleges, departments, and programs. In fact, wide-scale campus implementation of course-level embedded librarians was a recommendation resulting from the interview with the course instructor (instructor interview, lines 236-237). While theoretically it may be beneficial to use this model to embed librarians in courses campus wide, the model may not support expansion of that level.

As mentioned previously in relation to this project, and in the embedded librarian literature (Bozeman & Owens 2008; Edwards, Kumar & Ochoa 2010; Dewey 2004; Dugan 2008; Freiburger & Kramer 2009; Hall 2008; Lillard et al. 2009; Kesselman & Watstein 2009; Matthew & Schroder 2006; Rudin 2008; York & Vance 2009; Shumaker & Talley, 2009; Tennant & Miyamoto, 2002), embedding a librarian in courses requires a significant time investment from the librarian. Each stage of the instructional design process, beginning with the needs assessment to collaboration with the faculty member and the development of instructional materials, is time and labor intensive, but crucial to the success of the project. In addition to investing time in developing customized integrated instructional materials, a truly embedded librarian will devote time to participating in the course in which they are embedded, including offering support and interacting with the learners and/or instructor.

While librarians may be willing to devote the intensive amount of time to embedding themselves into courses, unless the role of “embedded librarian” is their only function in the library, doing so may limit their ability to perform additional vital functions that support the library and their career, especially in institutions where librarians are tenure-track faculty. There are several potential solutions to this dilemma, designed to help the individual embedded librarian and the library achieve some return on their time and invest in resources necessary to produce a quality, successful embedded librarian product.

One potential solution to this problem is to create instructional materials that are reusable. In this case study, the instructional content developed by the librarian researcher was reused for a similar audience of medical educators and modified and repurposed for other audiences, thus extending the usability of instructional content and expanding the benefit beyond the OnMed embedded librarian project. However, the fact that the instructional materials were ostensibly developed for a specific group can possibly curtail the reusability of the materials so that they are only useful to reuse with a group similar to the one for which they were designed. It may also be feasible to design and develop templates with details and examples based upon a pre-determined framework, which librarians can use to facilitate and hasten the development of instructional materials.

Another solution to extend the benefit of the time investment is to turn the service focused instructional project into a research project by participating in the scholarship of teaching and learning (SoTL). In conducting SoTL research related to the embedded librarian duties, librarians and their institutions can achieve some return on their time investment by disseminating and publicizing library research and supporting retention through the tenure and promotion process.

If an institution or library decides to implement course level embedded librarian programs regardless of the time involved with the endeavor, there may be other less tangible ways to recoup some of the lost investment. Evaluating embedded librarian programs in these terms can be seen as a discussion of return on investment, is an example of a Kirkpatrick Level Four evaluation (evaluating results) (Kirkpatrick & Kirkpatrick, 2006) and has direct policy and administrative implications.

Findings from this study, particularly regarding the information literacy self-efficacy assessment, indicate that embedded librarians are beneficial to students and improve their information literacy self-efficacy and skills, primarily through learner-content interactions rather than learner-instructor (or learner-
librarian) interactions. The findings may lead to the assumption that individuals are more interested in interacting with library content rather than a librarian; however, these findings may be specific to the learners in this case. In cases similar to this featuring non-traditional learners who may have more prior experience with library research and information literacy concepts, it may be preferable to focus on collaboration with faculty and the creation of customized instructional materials rather than developing rich learner-librarian interactions. Further study is required to test the above assertion.

Additional studies further explore the presence of embedded librarians in online courses. These studies are based in other contexts, both in graduate and undergraduate settings, and were designed to determine whether the preference for learner-content rather than learner-librarian interactions is true of other types of students in other courses. These studies would hopefully make recommendations for strategies to increase learner-instructor interactions in future iterations.

Research concerning communities of inquiry, interaction and presence in online courses, influences librarians’ roles as online embedded librarians and is related to and potentially dependent upon what role(s) the embedded librarian plays within the course. For instance, librarians who have more freedom and flexibility with their interactions with students enrolled in the course have more potential for interactions of all types. Librarians who have an instructor-like role within the course will interact with students in a manner similar to the course instructor while a librarian with a less formal role may interact with students in a manner that more closely resembles student-to-student interactions. Future research could focus on investigating librarians’ roles in online courses and determining how students interact with librarians and the ways in which librarians affect cognitive presence.

In addition to researching librarian presence, future studies could use other methodologies to further investigate a librarian’s impact in online courses, including experimental or quasi-experimental designs with a control group to provide more rigorous empirical evidence of the efficacy of the embedded librarian.

As is demonstrated by the professional literature (Bozeman & Owens, 2008; Edwards, Kumar & Ochoa, 2010; Dewey, 2004; Dugan, 2008; Freiburger & Kramer, 2009; Hall, 2008; Lillard et al., 2009; Kesselman & Watstein, 2009; Matthew & Schroder, 2006; Rudin, 2008; Schumaker & Tally, 2009; York & Vance, 2009), librarians are being increasingly embedded or integrated into a variety of contexts including colleges, departments, research teams, and both online and face-to-face courses; it is clear that embedded librarianship is the future of academic librarianship. Embedded librarians are being used to provide contextualized instruction in the increasing number of online courses being offered by institutions of higher education (Allen & Seaman, 2011). Evaluation is essential because this is a new service area. The embedded librarian implementation described in this project built upon experiences with a similar pilot project and best practices from the literature including customized instructional content, multiple modes of optional interaction with the librarian, and extensive faculty support and collaboration. However, this project extends the literature by using a multifaceted case study methodology to measure impact and explore participants’ experience with the embedded librarian.

Both quantitative and qualitative methods were employed including a pre- and post-assessment of information literacy self-efficacy, citation analysis of student submissions, and participant reflections. A post course interview with the instructor and field notes from the librarian researcher further informed the findings. Results indicated an increase in self-efficacy and high quality annotated bibliography submissions, which are primarily attributed to viewing the instructional content rather than interacting with the librarian.

This project paved the way for future embedded librarian initiatives at the University of Florida and further collaborations between librarians and faculty as well as additional research regarding experiences with an online embedded librarian and librarian presence.
References


A number of free web-based tools are available for distance librarians to create presentations and online assignments. The relative merits of presentation tools like Dabbleboard, Jing, Prezi, Tildee, 280 Slides, and Glogster, and classroom tools like Make Beliefs Comix, Picviewer, Photopeach, and Wordle are assessed for ease of use by distance librarians. Because most of these applications are cloud based, little or no downloading is required to use these applications from any PC. As long as one has an Internet connection, distance librarians can use these free and easy tools to reach out and touch students!

**Introduction**

The tools for providing library instruction to distance students have been going through a dramatic transformation. Today’s web-based, digital presentation and classroom tools are changing the format of instruction methods and dissemination. These tools are also particularly good at creating and distributing visual materials (Matusiak, 2010, iv). With the impact of the Great Recession, libraries are looking for ways to work smart while cutting budget costs. Because the sheer number of free and fee-based applications available, this article focuses on instructional tools useful for distance librarians. More specifically, the relative merits of a number of free tools including Dabbleboard, Jing, Prezi, Tildee, 280 Slides, and Glogster as well as free classroom tools including Make Beliefs Comix, Picviewer, Photopeach, and Wordle are reviewed and assessed. As academic institutions in general and libraries in particular face significant budget constraints, librarians are interested in free applications that can be used to design screencasts and provide services remotely to students. The amount of detail included about each tool is not sufficient to actually get end users up and running, but information is provided about each tool’s relative merits. The goal is to help distance librarians see the possibilities and constraints offered by these applications.

**Literature Review**

Distance librarians have been exploring ways to deliver library instruction in new and effective ways to students for decades. The need for online instruction has increased by leaps and bounds, and librarians have been quick to adapt technology applications for synchronous and asynchronous instruction. For example, Rawlings discussed the use of technology for library instruction already in 1982 while more recently an article by Tempelman-Kluit and Ehrenberg (2003) was one of the first to describe the use of screen casting for library instruction. The end result has been that librarians continue to be actively interested in using instructional tools to integrate media for presentations and classroom applications.

The literature has a lot to say about the impact of presentation tools and to what degree the integration of these learning technology tools actually promotes student learning. Since Clarke (1983, 1994), Kozma (1991, 1994), and Kounl's (1994) debate on the impact of media on learning in the early 1990s, librarians have been aware that it is how applications are put to use and not just the intrinsic nature of specific media that produces effective instructional presentations. A number of people (Adams, 2006, 2007, 2008; Harris, 2011; Vallance & Tondrow, 2007), for example, studied the impact of one of the standard presentation applications used in both business and educational settings. Adams and Harris
argued that the linear design of PowerPoint presentations shape the knowledge presented in particular ways to students, whether in the classroom or online. Thus, digital media technologies have the problem of shaping presentations. Adams (2007) concluded that “the particular forms of knowing, relating, and presenting with PowerPoint are decided in part by… the software tool’s default patterns but also by the very nature of the presentation medium itself” (p. 231). Harris (2011) re-enforced Kozma (1991, 1994) and Kourmi’s (1994) point that “media will influence learning” (p. 7) by noting that the use of presentation software “is not just a technical matter but one that raises deeper issues of teaching style, and beneath those, views of teaching, learning, and pedagogy” (p. 72).

The use and impact of instructional technologies have been of interest to distance librarians since the advent of multimedia. In the infancy of online instruction, distance librarians were often concerned about demonstrating equivalence between online and traditional face-to-face instruction (Casey, 2001; Mandernach, Donneili, Dailey, & Schulte, 2005; Tunon, 1999). As a body of research has demonstrated the efficacy and equivalent learning outcomes between traditional and online instruction, it has been established that the principles that apply to education also apply to distance education (Simonson, Schlosser, & Orellano, 2011). As more has been learned about distance students and their needs, librarians have been able to move beyond the idea of needing to equate the two models of learning (Mandernach et al., 2005). The Internet provides quicker access to tools that increase classroom engagement more quickly and effectively (Schiller, 2011). As Kozma noted back in 1994, media offers more than just a vehicle for communicating.

## Presentation Tools

Creative multimedia tools offer new instructional solutions with the potential to create new and exciting applications. Several free presentation tools which provide librarians with numerous applications to choose from, but each needs to be assessed in terms of the potentials offered by specific features as well as any limitations. Table 1 lists the name of each presentation tool and whether or not sign up or download are required to use the tool and if the application provides a support community.

<table>
<thead>
<tr>
<th>Presentation Tools</th>
<th>Sign Up Required</th>
<th>Download Required</th>
<th>Support Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dabbleboard</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Jing</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Prezi</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Tildee</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>280 Slides</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

### Dabbleboard

Dabbleboard ([http://www.dabbleboard.com](http://www.dabbleboard.com)) is a free whiteboard cloud application that librarians can use to invite distance students to join them in the Dabbleboard as they illustrate their ideas visually and be able to hear what the students think. No sign up is required to use, but account sign up is required if the document is to be saved. Pro level accounts are available. Dabbleboard lists 19 different design features including image insertion, shape auto detection, freehand, click anywhere to enter text, and most everything can...
be moved, resized, deleted, and replicated. A key feature is the unlimited amount of “undo” and “redo”s available to the document with previous creations being able to be reused. There are seven different drawing toolkits with content and creations that can be saved to an online library. In addition, “Tokbox” voice and video chat is available for classroom usage creating a real time and participatory experience and relationship to their virtual classmates. The Dabbleboard website provides a user guide, tutorials, links to examples, and has a tour available of the service.

**Jing**

![Jing](http://www.techsmith.com/jing.html) is a free downloadable tool that can be used to create images and videos for on-the-fly instruction that can be easily shared with distance students in answer to reference questions or posted as quick and easy instructional videos (Price, 2010; Tagge, 2009). The application is used to capture an image of what is on the computer screen. Jing provides simple but intuitive tools for inserting a text box, arrows, highlighting, or rectangles, but easy access to the editing tools simplify the process of inserting instructional content. Jing can also be used to create screenshot videos on topics such as how to use library databases, for example. Narration is easy to insert, and Jing streamlines the process for sharing either the files or URLs easily via social media, email, or instant messaging. The free Jing account allows up to five minutes of screen recording and mark-up tools for images. The Jing Pro account is $14.95 a year and includes webcam recording, instant sharing to YouTube, and MPEG-4 videos. The Jing community includes newsletters and blogs in addition to the tutorials and tech support that are available.

**Prezi**

[Prezi](http://prezi.com/index) is a cloud based tool that provides a “zoomable” canvas or visual map of words, images, videos, and links using a Flash-based app. The visual and conceptual maps of presentations are laid out on one large canvas and make it possible for librarians to easily show interrelationships between concepts. (Hart, 2009; Schiller, 2011). The resulting non-linear presentations provide more excitement and movement than the very linear and more traditional PowerPoint presentations though users can incorporate existing PowerPoint content in this new format to create web-based presentations, downloaded to present offline, or used for live presentations. Librarians using Prezi presentations can follow a predefined path. However, because the visual map permits easy navigating by zooming in to look at details on the visual map and back out to get an overview on the topic, librarians can use this format to easily make specific points or answer questions that may come up during live presentations. Presenters have to be careful, however, about over using the zoom feature because it is easy for viewers to get dizzy or disoriented, and presenters can lose track of where they are. Resizing of pictures, frames, or the deletion of images downloaded can be a bit frustrating until users get accustomed to the dials. However, you could turn a Prezi presentation into a video using Camtasia or some other screen capturing tool. (Shepherd, 2009). Prezi offers a public free version that is limited to 100 Megs of storage space. Tutorials and cheat sheet with help information are available, and YouTube videos can be uploaded and inserted in the application. Other fee based options are available such as the “Enjoy” version which is $59 a year and allows 500 Megs of storage space and the “Pro” version is $159 a year with two Gigs of storage space. Educators can apply for an “Edu Enjoy” or “Edu Pro” versions which give same features as the regular “Enjoy” and “Pro” versions. However, both are branded “only for education use”.
Tildee

Tildee (http://www.tildee.com) is a free tool that creates tutorials which can be shared instantly. Librarians can create simple and fast “how-to” guides for distance students to quickly illustrate topics. Tildee is a very simple and fast way to create tutorials. Because Tildee is intended for educational purposes, it cannot include copyrighted materials or other offensive content, and videos can be made visible in the browse section of the site. Maps, images, and video can be embedded in a Tildee, and each tutorial made has its own unique short URL for sharing. Tildee provides sharing links to Facebook, Twitter, and Google and the tutorials can be rated by viewers. However, there is advertising on the site while viewing your free Tildee and there are no tutorials or links to examples for users to get ideas on creating content.

280 Slides

280 Slides (http://280slides.com/Editor) is a free service excellent for group project presentations. Librarians could have students work together creating their class presentation without having to email their document back and forth. Just coming out of its Beta version, 280 Slides is cloud-based and provides an alternative to the traditional PowerPoint presentation, and has the added advantage that the files can be accessed from work, home, or on the road, thus relieving worries about having your laptop or flash drive for a presentation or corrupted files. Because 280 Slides is compatible with PowerPoint, existing PowerPoint presentations, photos, and movies can be easily imported into this application and users can pick a theme for the slides for design templates. According to Goodwin (2009), one of this application’ most powerful features is its built-in media browser that allows the user to Google for images and YouTube clips without leaving the application and drop them into a slideshow as needed. There is auto-save and recovery feature and all content can be downloaded to PowerPoint and published to the web.

Creative Assignment Tools

Several free creative assignment tools provide librarians with quite a few applications to choose from, but each needs to be assessed in terms of features and limitations. Table 2 lists the name of each creative assignment tool and whether or not sign up or download are required, and if a support community is available for the application.

Table 2

<table>
<thead>
<tr>
<th>Assignment Tools</th>
<th>Sign Up Required</th>
<th>Download Required</th>
<th>Support Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glogster</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Make Beliefs Comix</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Picviewer</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Photopeach</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Wordle</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Glogster

Glogster (http://edu.glogster.com) is an online multimedia poster that offers a single free license with limited features. Librarians can use Glogster to engage distance students to express themselves and have a Glog poster as a way of getting to know the other students or as a creative way to present their assignments on their own student page. The “Teacher Light” version is $29.95, the “Teacher Premium” for $99.00 a year, and the “School Premium” for $2.00 per student per year. Glogster allows the user to create graphic galleries, draw, use animation, attach documents, and upload photos and video, and webcams. Glogster has 16 key features including a Glog creation interface, messaging, privacy controls, and an educator resource library, and it provides twelve different ways of sharing content. Glogster showcases fifteen ideas on ways the tool can be used for educational use. The Glogster Premium account offers 12 additional enhancements such as customer care, technological support, and full class management. The limitation of the free account is that Glogs are made private; you can, however, provide users with the Glog URL. The platform is designed to provide instructors with a private virtual classroom that is free, private, and safe for students (Glogster EDU, 2009), but it is not useful as a method for disseminating instructional content. A really fun competitive aspect is available for users who create the best Glogs on Glogster. Those selected can become an honorary member of an elite group of Gloggers called the “Glogster Commandos” which allows special rewards, privileges, and responsibilities to the group.

Make Beliefs Comix

Make Beliefs Comix (http://www.makebeliefscomix.com) is a free comic strip creator for print, web, and electronic comic strips. Librarians may want to ask distance students to create a strip about themselves as an icebreaker among their fellow students. Make Beliefs Comix suggests twenty one uses for educators in the classroom such as from foreign language practice to promoting team collaboration. The key features include language options, dialogue prompts, cast of characters, select objects and scenes, select background color, and panel choices and panel prompts. In addition, the Make Beliefs Comix site has print options or it can be emailed and there are over 100 free ready to use Make Belief Comix “printables.” The finished strip can be saved, though the user must have Paint, Photoshop, or Fireworks on their computer to do so. Make Beliefs Comix has advertisements and any images created on the site may not be sold or reproduced without permission as it is for educational use only.

Picviewer

Picviewer (http://www.picsviewr.com) is a free cloud-based service providing unique templates to showcase photos in a very interactive and exciting way. Librarians may want to use Picviewer as a visualization tools for presenting concepts or ideas for their subject. For example, a librarian may ask students to upload their favorite 10 pictures and display them in a Picviewer template as a showcase of their life as a way of getting to know each other. There are ten different design templates to choose from with demos and examples available. There is a fee based service that allows the customer to have custom design templates made. The designer does accept donations through PayPal for his free service. The application required Flash and JavaScript’s for templates to run and the site is advertisement free. However, the templates do not support HD and the photos must be uploaded through a Flickr account only.
**Photopeach**

Photopeach ([http://photopeach.com/education](http://photopeach.com/education)) is a free cloud-based tool that creates slideshows with photos and captions, and its privacy settings allowing creations to be public or unlisted. Librarians will love how a Photopeach slideshow can be easily adapted into interactive quizzes for distance students. The user must register for the free account and is limited to thirty photos and does not allow music upload. However, the premium version is available for as little as $9.00 a month and does include soundtrack options. Photopeach has easy editing control and the multiple choice quiz features are great for collaborative work. Tutorial and examples of projects are available and the site does include advertising. Users can explore the slideshow community and there are links to social media for sharing.

**Wordle**

Wordle ([http://www.wordle.net/create](http://www.wordle.net/create)) is a free “word cloud” generator tool. Users can select font, layouts, and color schemes and examples are available. Librarians can use this tool to have students create a Wordle to describe elements of their personality or their skills and talents. Each distance student could post one of these to get to know each other better. The application must have Java web-browser plugin and it must be enabled in browser. Wordle freely allows the user to use its creations for profit and may be used for your t-shirt design, business cards, and brochures. The finished Wordle can be printed or saved to the gallery, or enabled for share in the gallery. However, the finished Wordle image is small and one must “screenshot it” to make it a larger Wordle, and one cannot edit an existing Wordle but can re-paste your text and start over. Also, the Wordle cannot be saved as a jpeg, gif, png but one can take a screenshot of it, though a PDF can be generated. Other limitations include that it does not support Chinese or Japanese languages.

**Other Recommendations**

There are many additional tools that have great applications for presentation and classroom usage. Other tools such as Go Meet Now, Go Animate, ipresent Presio 1.6, Raptivity, Screener, Sliderocket, WiziQ, and Xtranormal provide such applications but only with free trial periods. However, they are worth mentioning as additional tools that can be used to engage distance learning students. Each tool’s function and free trial limitations are listed in the Appendix.

**Conclusion**

Free and easy tools provide distance librarians with an array of excellent presentation and assignment applications to reach out and touch students via the web! It is important to note that as specific products gain acceptance they are likely to start charging a fee or restricting the features that can be accessed at no cost. As a result, readers may find the article still of use in helping to see which products might be worth purchasing in order to add particular products to distance librarians' instructional arsenals. Because e-learning has become so prominent in higher education with the proliferation of user-friendly instructional tools, distance librarians with widely varying levels of technological and pedagogical skills and experience will appreciate how the free and easy tools identified here can enhance library instruction.
References


Casey, A. M. (2001, October 4). *Distance library services*. Presented at the annual colloquium at the University of Illinois at Urbana-Champaign. Retrieved from [http://www.library.illinois.edu/committee/colloqm/speakers/casey.html](http://www.library.illinois.edu/committee/colloqm/speakers/casey.html)


## Appendix

### Presentation and Classroom Tools with Free Trials

<table>
<thead>
<tr>
<th>Free Trial Tools</th>
<th>Function</th>
<th>Trial Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go Meet Now</td>
<td>Web conferencing</td>
<td>Unlimited hosting of 20-minute sessions</td>
</tr>
<tr>
<td>(<a href="http://www.gomeetnow.com/">http://www.gomeetnow.com/</a>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Go Animate</td>
<td>Animated movies</td>
<td>2-minute videos and 10 lines of dialogue</td>
</tr>
<tr>
<td>(<a href="http://goanimate.com/">http://goanimate.com/</a>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ipresent Presio1.6</td>
<td>Web presentations</td>
<td>Up to 5 presentations for free</td>
</tr>
<tr>
<td><a href="http://ipresent.net/">http://ipresent.net/</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raptivity</td>
<td>Interactive, game based quizzes, presentations</td>
<td>14 days</td>
</tr>
<tr>
<td>(<a href="http://www.raptivity.com/free-trial">http://www.raptivity.com/free-trial</a>)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screenr</td>
<td>Web-based screen recorder</td>
<td>15 days, no credit card required</td>
</tr>
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<td>(<a href="http://business.screenr.com/">http://business.screenr.com/</a>)</td>
<td></td>
<td></td>
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<tr>
<td>Sliderocket</td>
<td>Web-based presentations and resumes</td>
<td>14 days for full version, free “lite” version</td>
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<td>WizIQ</td>
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Off the Shelf and Out of the Box: Saving Time, Meeting Outcomes and Reaching Students with Information Literacy Modules

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As institutions of higher learning rapidly expand their offerings of online, hybrid and other distance learning opportunities for their students, librarians must adapt, adopt and improve information literacy instruction methods to accommodate instructors they may never meet and classes they may never see. Many responses to these challenges, such as embedded librarians and tutorial development, however, can be time consuming, expensive and resource-draining. This article discusses the process of creating a low-maintenance, wide-reaching solution to providing generic information literacy instruction to students in online, hybrid, distance and face-to-face courses.

Background

The College of DuPage (COD), located in Glen Ellyn, Illinois, is a single campus comprehensive community college with a FY 2009 total annual unduplicated headcount of 59,444. In addition to classes offered on the main campus, the college offers classes online and off-campus at 90 off-site locations and six regional centers. As a course management system (CMS), the college uses the Blackboard Learning System, providing all class sections—regardless of mode of delivery—a course shell in which instructors can share course materials, issue assignments and assessments and record grades.

Distance learning, whether online or off-campus, represents a rapidly growing mode of delivery at the College of DuPage. In the 2009-2010 academic year, the college offered 186 unique online courses, with 725 individual classes or sections available to students. Seat count for online classes during the year totaled 18,989, an exponential increase over the 307 online sections and 5,972 enrolled students in 2005-2006. In that same year, the college’s nine instruction librarians provided instruction in 1,009 classes, reaching 17,679 students. All of these 1,009 classes were traditional, face-to-face classes. There were no information literacy (IL) instruction sessions for online courses.

As another distance learning option, the College of DuPage offers between 300 and 400 Flexible Learning (Flex) classes each semester in 16 disciplines and in a range of delivery formats, including appointment-based courses, telecourses, and group instruction. These self-directed classes offer an alternative to face-to-face and online instruction for students who may be limited by time or place. While support for Flex classes—including instructor appointments and group meetings—is available on campus, a significant proportion of students select Flex classes which are supported by one of the college’s four learning commons locations in the regional centers. As with online classes, Flex classes do not receive formal, integrated or systematic information literacy instruction from the library.

Rationale

Despite librarians’ efforts, online classes are not taking full advantage of library instruction opportunities. Librarians from divisions with a significant number of online course offerings have developed and promoted a range of information literacy instruction options, including synchronous webinar-style sessions using Adobe Connect; pre-recorded and embeddable lectures; as well as on-campus and off-campus face-to-face sessions for online students. While some instructors have indicated interest in working with librarians to provide instruction in their online classes, very few have followed through and taken up offerings.

Until recently, the avenues for reaching online students were quite limited. In 2007, the library was able to garner real estate in Blackboard classes by requesting the placement of a Library Resources
button in the course menu of all Blackboard course shells. The button, which provides a link to a page developed specifically for online students and faculty, gives the library some visibility in online classes, but does not provide immediate access to resources and can be removed from a class’ course menu by the instructor.

In order to provide online classes with more customized access to library resources, librarians agreed to develop and implement an in-house program called The Embedded Librarian: Levels of Involvement (see Appendix A). The program, developed in 2008, outlined three options for a librarian to “embed” him or herself in a Blackboard class. Level one, Liaison Link, recommended contacting teaching faculty and encouraging them to redirect the Library Resources link in their course menus to a librarian’s personal homepage or to a research guide designed for the course. Level two, Export & Copy, suggested that the librarian create embeddable content that could be made available to online teaching faculty. This content could include assessments, tutorials, or information literacy assignments. Level three, The Embedded Librarian, advocated the inclusion of the librarian in a course builder role in the online class, allowing the librarian to create content, send announcements, and access student assignments and additional course content.

Following the creation of this program, many librarians adopted level one and level two strategies for involving themselves in online classes, but true embedding was rare. Librarians cited time commitment and non-responsive online faculty as reasons why they did not embed in online classes. Given the challenges of involving instructors and the sheer numbers of online classes offered every semester, making an impact with embedded librarians was simply not possible.

Although the librarians acknowledged the many missed opportunities for library instruction for online and distance students, an opportunity arose to address this omission with the college-wide adoption of revised General Education (Gen Ed) Outcomes in 2009. The first of eight outcomes addressed by the college was information literacy. The five skills associated with the Information Literacy Outcome (see Appendix B) aligned with the library’s own Student Learning Outcomes for the Information Literacy Instruction Program (see Appendix C) and provided much needed institutional support to address the lack of information literacy instruction provided to an ever growing population of online and distance students. With the attention of each academic division turned to information literacy, the library took advantage of this opportunity by developing a tool by which the library could provide basic information literacy instruction to the online, hybrid, off-campus and even face-to-face classes that were currently not receiving IL instruction.

**Literature Review**

Librarians have long-used online tutorials as a method of enhancing, supplementing and even replacing face-to-face IL instruction, making them a “standard component of academic library systems across the country” (Befus & Byrne, 2011, para. 5). Recent literature illustrates two trends in providing enhanced IL instruction via tutorials: The adaptation of open-license or Creative Commons licensed tutorials and the integration of tutorials into course management systems such as Blackboard, WebCT, D2L and others.

In the early and mid-2000s, a number of libraries adopted and adapted two popular tutorials: the Texas Information Literacy Tutorial (TILT) and Searchpath, a Western Michigan University adaptation of TILT, both of which were published under open publication licenses (Flatley & Jefferson, 2006). Both tutorials have been described as “clearly appeal[ing] to a college-level audience” with their “JavaScript, Flash animations and popular culture references” (Roberts, 2003, p. 11). Despite the time, effort and skill needed to customize, brand and otherwise edit these tutorials, many libraries invest resources in the adaptation process (Roberts, 2003). Another popular, adaptable tutorial, University of Washington’s Research 101, is available via a Creative Commons license and has been downloaded by over 100 institutions (Waltz, 2007). Like TILT and Searchpath, Research 101 includes interactive Flash and Shockwave elements and is easily downloaded.
One challenge presented by using online web-based tutorials is gathering data on usage and assessing student success. Faced with “the daunting task of evaluating established online information literacy tutorials for the first time” (Befus & Byrne, 2011, para. 7) many libraries are realizing that continuous assessment is required in order to maintain the quality and relevance of materials. In response, a number of libraries are moving their customized TILT, Searchpath, and Research 101 tutorials into course management systems. As Roberts (2003) points out, “most nontechnical librarians are aware of the complexity and the skill level required to implement and maintain a Web-based registration and testing system” (p. 11). Incorporating tutorials into a CMS alleviates this challenge.

In addition to score-able assessments available from within the CMS, integration into a system universally used by the institution provides access to large populations and “a seamless program of literacy instruction may be developed…. [offering] a structured, user-friendly point of entry for students who want to access the library resources any time they have Internet access” (Karplus, 2006, p. 7). At its most basic level, the CMS functions “as electronic ‘containers’ to store, link and retrieve documents as well as provide telecommunication tools” (Karplus, 2006, p. 5) such as email, chat and blogs.

An early adopter of the tutorial-CMS pairing, Alfred University’s Gary Roberts identified the clear advantages of marrying a customized tutorial, in this case TILT, with an institution’s course management system. Roberts (2003) summarizes these advantages as:

1. The content of TILT is leveraged against the registration and testing features of course management systems.
2. Information literacy can be incorporated into course-specific work without reducing classroom time.
3. Student information literacy can be measured and documented with CMS-based evaluations.
4. Small institutions can leverage their investment in available course management systems without having to implement technology-intensive and expense testing and registration systems (p. 12).

Adebonojo (2011) describes the experience of librarians at East Tennessee State University who adapted a successful LibGuides program for use in the institution’s course management system, Desire2Learn (D2L). Integration of content into D2L represented “a better [way to] market library resources while teaching students search techniques” while allowing the library to “decrease the teaching burden on all librarians” (Adebonojo, 2011, p. 106). Tutorial units included library-specific topics (e.g., navigating the university’s library, finding course reserves) as well as basic information literacy skills and concepts (e.g., scholarly vs. popular articles, Website evaluation, internet searching).

Henderson Community College (HCC) librarians were able to take advantage Blackboard’s eCommunity Blackboard feature, a component which had been adopted by the Kentucky Community and Technical Colleges System to which HCC belongs. Alongside the assessment and communication tools already present in Blackboard, the eCommunity component provides additional flexibility and “is more permanent than a regular eCourse because it is not removed from the Blackboard home page…. each semester” (Knecht & Reid, 2009, p. 2) with individual eCommunities existing independently of the credit-bearing courses which might use them. While each student is “required to enroll individually, the Information Literacy eCommunity was made available to any students enrolled at HCC,” allowing librarians to reach targeted populations with tutorials that had been “modularized into units that would be easier for at-risk students to understand and use effectively” (Knecht & Reid, 2009, p. 4).

Development

The COD Library’s Instruction Committee had made efforts to provide online information literacy instruction before. Early attempts included the development of a Web-based, self-directed, comprehensive information literacy course which was later developed into a credit-bearing information literacy course. In 2009, the Instruction Committee began working in earnest to create information literacy “pods,” a series of
learning objects designed to introduce students to library services as well as information literacy skills, concepts and tools.

Creating the content for the information literacy tutorials presented the largest challenge. In order to provide COD Library-specific tutorials, the Committee could not rely on existing tutorials, such as those available through the tutorial databases PRIMO (Peer-Reviewed Instructional Materials Online) and MERLOT (Multimedia Educational Resource for Learning and Online Teaching). Librarians debated (1) the merits of using various content-builder tools such as ViewletBuilder or Camtasia; (2) the drawbacks of producing videos using images from subscription resources with interfaces that would likely change in the future; (3) whether the scope of the learning objects should be comprehensive or introductory; and (4) whether the information literacy pods should be designed as a supplement to information literacy instruction or a stand-in for the same.

Ultimately, the comprehensive scope, effort, time and skill needed to create the pods and delivery challenges persuaded the Committee to abandon the concept-pod idea for a more modest, Blackboard-based series of basic information literacy skills modules using content from an existing online tutorial. In addition to the models provided in the literature, we also looked at IL module examples from Old Dominion University Libraries, Northwest Vista College Libraries, and Delaware Technical and Community College.

Content

The Library’s Information Literacy Modules—initially developed during the fall semester of 2010—had the goal of providing basic information literacy instruction and meeting General Education information literacy outcomes via Blackboard. The content of the modules would introduce students to information literacy concepts, reinforce information literacy skills, and stand as an orientation to basic competencies; creating a platform on which more advanced instruction could be built.

Rather than design a series of modules from the ground up, the Committee agreed to use the University of Washington’s Research 101 tutorial as a primary content source and outline for organizing the modules. The winner of a PRIMO award in 2006, Research 101 has been recommended by several publications and reviewers as well as being adopted and adapted by a number of college and university libraries. The COD Library had downloaded and customized Research 101 in 2009 and had been using it sporadically. Several librarians used elements of the tutorial in face-to-face instruction; others recommended it to teaching faculty who used the tutorial in both face-to-face and online classes.

Research 101 is comprised of six units: Basics, Information Cycles, Topics, Searching, Finding and Evaluating. Each unit has its own set of objectives, information, and exercises, and is organized into chapters. Students move at their own pace through text, interactive elements, worksheets, and review quizzes. Additionally, units outline learning outcomes which correspond to the College’s Gen Ed outcomes and the library’s own IL instruction standards. A student who has completed each of the six Research 101 tutorials has been introduced to sixteen of the library’s twenty-nine outcomes and had reinforcement of three.

While Research 101 provided short, multiple-choice review quizzes, the Committee believed that in order to adequately meet the college’s General Education Outcomes for Information Literacy, the modules would require a more robust assessment component. Initially, we looked at using SoftChalk Lesson Builder course content-building software, for which the college had licenses available. SoftChalk provides templates for interactive assessments, learning objects and other tools which seemed a good match for a Blackboard module. However, the SCORM (Sharable Content Object Reference Model) format in which SoftChalk exported its content posed problems when uploaded into Blackboard. Ultimately, Blackboard’s own test-making tools proved the best match for our assessment needs.

Brief multiple choice quizzes assess a student’s understanding of the concepts covered in the Research 101 tutorial as well as the student’s ability to apply those concepts to new situations. Quizzes are
tied directly to the Blackboard Grade Center and results automatically included in Grade Center score calculations.

In addition to providing assessment tools, the Committee created and made available supplementary materials to instructors who wished to create assignments, establish scaffolding for learning information literacy concepts or provide students with additional learning tools. Three of the six Research 101 units have accompanying worksheets, designed to help students through the appropriate steps of their research. Although the worksheets are available directly from within the Web-based Research 101 tutorial, we have included PDF versions with editable forms in the modules, making it easier for students to submit completed worksheets via Blackboard’s assignment tool or by email.

Finally, each set of modules contains an additional student feedback element, directing students to an online evaluation form soliciting their opinions about the modules. The Committee uses student feedback to further develop and refine Research 101 content and the organization and delivery of the modules.

**Program Assessment**

In the middle of the spring 2011 semester, the Library Instruction Committee launched the pilot program wherein volunteers from the teaching faculty would add the information literacy modules to their summer Blackboard courses and provide us with feedback.

The Committee was given center stage to present the IL modules during the All-College Spring In-Service Day. As part of a panel presentation detailing individual and divisional efforts to address the recently adopted General Education Outcomes, the library introduced full-time faculty to the newly-created Information Literacy Modules and encouraged instructors to volunteer for the summer pilot program. With no additional information other than a brief presentation and an invitation to contact any of the three librarians on the Instruction Committee, no fewer than five instructors emailed that same day, expressing their interest in participating in the pilot program.

In mid-March, we sent an email to all full-time and part-time faculty members, asking three questions: “Are you using Blackboard in an online, hybrid or face-to-face class this summer?”, “Would you like to incorporate or promote information literacy in your curriculum?”, and “Are you willing to provide feedback to a librarian at the end of the semester?” The email went on to describe the purpose of the modules, who created them, and how instructors could benefit from adding them to their Blackboard courses. One week later, we offered a one-hour informational webinar wherein we demonstrated the live modules inside a Blackboard shell and answered questions from faculty members.

Interest in the IL modules was immediate, garnering dozens of emails in response. In just eleven days after our initial email, we received fifteen messages of intent or interest. By mid-April, we had met our goal of twenty-five volunteers willing to pilot the IL modules over the summer and directed them to a Getting Started Web page which would provide them with instructions for downloading the modules and importing them into their Blackboard courses; suggestions for customizing the Modules; information on providing feedback; and contact information for troubleshooting or any other questions.

Within days of the summer semester beginning, we began receiving feedback from faculty. While initial comments concerned simple troubleshooting issues, other emails concerned more substantive issues. Between the critical eyes that the instructors had turned to the module content and their students’ hands-on use, we were able to identify and remedy a number of glitches, typographical errors and other issues that had gone unnoticed by the Instruction Committee in our months of creating and reviewing.

While many instructors offered on-going feedback during the summer pilot, we waited until the end of the semester to send faculty a thorough evaluation form seeking their impressions on the following areas:
1. Technical Aspects

2. Organization of the Modules

3. Module Content

4. Research 101 Tutorials

5. Quizzes

6. Supplementary Material

7. Outcomes

Feedback from faculty was overwhelmingly positive. Faculty reported having very few issues downloading the IL modules zip file or importing the file into their Blackboard courses. While few instructors added their own materials to the modules, most indicated that in the future they would certainly consider customizing the content by adding their own discipline-specific test questions, activities and supplementary materials. Most responding faculty found the content of the tutorials and modules more or less at the appropriate level for their students and relevant to their coursework.

Given the beta-nature of the modules, we were not surprised to find that all responding instructors either found errors in the content themselves or had errors reported to them by their students. As we were able to address and remedy many of the errors within the Web-based Research 101 tutorial immediately or provide steps wherein faculty could remedy errors uploaded into individual Blackboard courses with the modules, instructors did not seem to see the errors as an impediment to student use of the modules.

Comments shared via the evaluation form and in conversations with faculty using the modules indicated a primarily positive reception to the modules with some reservations. For several instructors, the interactive elements built-into the Research 101 tutorial did little to alleviate the otherwise text-heavy content in each unit. As one instructor wrote, the “formatting [of the modules] was a sleeper. Jazz it up a bit!” Others indicated that customization of the modules seemed key to making the content relevant to student coursework.

Student feedback following the pilot program was largely positive. Thank yous and comments such as “Great tutorials, very helpful when researching topics or looking up basic information” and “I think the tutorials did a good job covering a lot of useful information” were certainly encouraging. Students’ critical comments generally echoed those of their instructors, with requests for more “fleshed-out” content in some areas. With over 70% of responding students indicating that they were only moderately familiar, somewhat familiar or not familiar at all with the concepts covered in the tutorials, we had fair indication that the IL modules are indeed providing students with information that they don’t already have and can use in their coursework.

Lessons Learned

Since the initial summer pilot program, the information literacy modules have been made widely available to the college, and as they reach more students in more classes, we are beginning to recognize the areas in which we have succeeded and the areas which will require additional attention. Areas for revision have been categorized into three stages based on the complexity level of the revision required and to better help the Committee triage areas that need work.

Awareness and adoption of the information literacy modules has benefitted greatly from partnerships forged between the library and academic administration, as well as the library’s placement in the college’s Learning Resources division, an area which includes both COD Online and Flexible Learning. Access to supervisors in both the online instruction and Flex programs allowed us to tailor the content to the needs of the students taking those classes. Additionally, we were able to reach out to the academic
deans of divisions, such as Liberal Arts, which make up the majority of online and Flex classes. With academic deans on board, and the Learning Resources dean also responsible for college in-service day programming, we had unique opportunities to promote the IL modules to both target-groups of faculty and faculty at-large.

Although we had access to a broad spectrum of faculty and fielded queries and heard interest from an impressive number of instructors, we never had a clear picture of exactly how many instructors were using the IL modules in their classes, how many times the modules had been downloaded or how many students were seeing the modules. During the summer pilot program, only four faculty members responded to the end-of-semester questionnaire, though we had heard of anecdotal use from more than that number. It was not until after the fall semester had already started that we began to track visits to the IL modules’ Getting Started page and downloads of the Blackboard files using Google Analytics.

Feedback we received from faculty during the summer pilot program revealed a number of problems with both the Blackboard content and the Research 101 tutorials. While we were able to quickly fix many of the mistakes, typographical errors and other oversights, several issues remain and reveal the limitations of using Research 101 as the primary instructional content of the IL modules. One significant challenge to continued use of Research 101 is the amount of Flash content in the tutorials. Although many of the tutorials available on library websites, and incorporated in CMS, use Flash content to provide the interactive features that appeal to college students, Flash content presents problems in that it cannot easily be edited and has significant accessibility issues for users viewing the tutorials on iPads or other Apple devices which do not support Flash. Libraries adapting tutorials such as TILT and Searchpath have cited the challenge of editing Flash elements as the one significant stumbling block encountered in an otherwise smooth adoption and adaptation process (Roberts, 2003; Flatley & Jefferson, 2006). Ultimately, we plan to investigate AJAX (asynchronous JavaScript and XML) solutions for creating interactive elements on the site.

Additionally, while Research 101 introduces students to the basic concepts of information literacy, the scope is nevertheless limited and does not fully address topics that both instructors and students have identified as important parts of information literacy instruction. In feedback surveys collected during the summer pilot and during the following fall semester, students were asked, “What topics, if any, would you like to see covered in an information literacy tutorial?” Of those who responded with a recommendation, half indicated that they would like to see a unit dedicated to citing sources. Other suggestions included: expanding the Finding unit, making the units more relevant to their course work, and providing more information on searching library databases. While the Instruction Committee does plan to add examples and activities to existing modules and to create a citing sources module, the practical challenges of creating original content brings us back to our initial hurdles of time commitment, availability of resources and skills.

Finally, as we see more faculty members adopting the information literacy modules in their online, Flex, and face-to-face classes—as well as more students responding to the feedback surveys indicating their familiarity with the concepts covered in the modules—we face the problem of saturation. During the fall 2011 semester, the first semester in which the modules were available for download into any course, 25% of students responded “yes” to the question: “Have you used these tutorials in classes other than this one?” With the modules available in a wide variety of classes across the disciplines, we can expect that percentage to grow and students to become all-too-familiar with the basic concepts in the tutorials. While we hope that instructors will customize the module assessments and provide course-relevant assignments, student comments indicate that this is not happening and that students will encounter the exact same modules in each class that incorporates them.

**Conclusion**

One solution to this problem of saturation would be to focus our attention on marketing the IL modules to a very specific audience: Flexible Learning classes. In Fall 2011, 1,415 students enrolled in 92 Flex classes. Instructors of English Flex classes—which are offered as self-paced, appointment based courses wherein students work independently and meet with instructors in short, regularly scheduled
meetings—were early adopters of the IL modules. Currently, the English Flex course curriculum does not provide for any formal information literacy instruction. Students do not receive assignment-related library instruction, nor do they meet with the library liaison to English. The single concession to information literacy instruction is a requirement that each student attend one of the library’s free research workshops. While the workshops do provide basic introductions to information literacy concepts such as evaluating resources, searching skills and citation formats, the attendance requirement runs counter to the promise of truly flexible learning, especially considering the number of students who take these courses through the college’s off-campus centers. Additionally, attendance in a single 90 minute or two-hour research skills workshop does not result in exposure to the broad information literacy skills outlined in the college’s General Education Outcomes.

By marketing the information literacy modules to Flex Learning classes, specifically English 1101 and English 1102, we would greatly reduce the possibility of campus-wide over-exposure, while providing basic, comprehensive information literacy instruction in classes which would not otherwise include it in the curriculum. Librarians will continue to revise the content of the modules, seeking feedback and usage data from instructors and students in order to improve the effectiveness of these instructional tools.
References


Appendix A

College of DuPage Library

The Embedded Librarian: Levels of Involvement

- **Level 1 Liaison Link**: Ask your online teaching faculty to change the link for the Library button on their course menus. They can redirect the link to your personal homepage or to a research guide applicable to the course.

- **Level 2 Export & Copy**: Create embeddable content in your own Blackboard shell, export that content and make it available to your online teaching faculty to copy into their course.

- **Level 3 The Embedded Librarian**: Get added to your online teaching faculty's course as an instructor, allowing you to create content and send announcements and giving you access to student assignments and additional course content.
Appendix B

College of DuPage General Education Outcomes for Information Literacy

a. Explain the need for information
b. Develop a plan for finding the needed information
c. Locate information effectively and efficiently
d. Evaluate information and its sources critically
e. Use information effectively, ethically, and legally to accomplish a specific purpose
Appendix C

College of DuPage Library Student Learning Outcomes for the Information Literacy Instruction Program

Information literacy comprises the abilities to find, select, and use information sources to satisfy an information need. Below is a list of learning outcomes for the College of DuPage Library Information Literacy Instruction Program. An information literate student is a master of these research skills. These are skills that a community college student should possess upon graduation.

1. Develop a Research Plan
An information literate student is able to:
   a. Determine a focused, clear, and manageable topic.
   b. Develop a realistic overall plan and timeline to complete the research project.
   c. Identify key concepts and terms that describe the topic.
   d. Explore general information resources to become familiar with the topic.
   e. Narrow or broaden the scope of the topic based on preliminary research.

2. Find Resources
An information literate student is able to:
   a. Determine available resources and services at the College of DuPage Library
   b. Understand the characteristics and value of different types of resources (books, periodicals, Web sites) and their different formats (print, electronic).
   c. Understand the characteristics and value of primary, secondary, and tertiary sources.
   d. Select information resources (catalog, databases, search engines) appropriate for the research topic.
   e. Use various search techniques such as keywords, controlled vocabulary, limiters, Boolean operators, and truncation to find relevant items.

3. Analyze the Search Results
An information literate student is able to:
   a. Understand that search results may be presented according to various ordering principles (e.g. relevance ranking, author, title, or date).
   b. Identify the components of a citation and differentiate between types of sources, such as book or periodical.
   c. Use the components of a citation to choose those sources most suitable for the research project.
   d. Analyze the search results and determine whether the search should be refined.

4. Retrieve Sources
An information literate student is able to:
   a. Determine whether sources are in the Library, online, or available by alternate means.
   b. Understand the different ways that resources are organized.
   c. Retrieve locally owned resources in a variety of formats such as books, articles, microform, and full-text.
   d. Understand the various methods for locating and obtaining resources not held locally such as Interlibrary Loan.

5. Evaluate Sources
An information literate student is able to:
   a. Use the components of a citation to choose those sources most suitable for the research project.
b. Evaluate among various information sources using established evaluation criteria to determine reliability, validity, authority, currency, and accuracy.

c. Evaluate information sources with an understanding of context, intention, and audience (bias, opinion, satire, inflammatory, balanced).

6. Organize and Use the Retrieved Sources
An information literate student is able to:

   a. Extract the details and concepts from the retrieved sources.
   b. Organize the gathered information in a logical and useful manner.
   c. Synthesize the ideas and concepts from the information sources collected.
   d. Integrate the new information with previous information or knowledge.
   e. Communicate the new knowledge to others by using various formats such as writing, speaking, or multimedia presentations.

7. Understand the Ethics of Information Use
An information literate student is able to:

   a. Understand what constitutes plagiarism and does not represent work attributable to others as his or her own.
   b. Understand the concepts of intellectual property and fair use of copyrighted material.
   c. Select a documentation style and use it consistently to cite sources.
Teacher as Student: Lessons Learned in an Online Teaching Fellows Program

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This article explores various models of online faculty development programs as described in the literature, and finds that they fall into a wide range of models from those that are highly structured to more organically grown examples. The Online Teaching Fellows program at the University of Rhode Island is shown to be an example of an internally-created course that follows best practices of both the structured and organic models. The author’s experience as a participant in the course is described illustrating how the lessons learned informed his strategies for effective teaching in an online credit course in information literacy.

Introduction

In their report on online education in the United States for the Sloan Consortium, Allen & Seaman (2011) found that there is no one way that institutions train faculty to teach online. Most institutions use some combination of training and mentoring. Only six percent of institutions that offer online courses do not have some kind of training; that is down from the 19% reported in their 2009 survey. Seventy-two percent offer internally-created training courses and 58% offer informal mentoring with fewer institutions using formal mentoring in training online instructors. In fact, all forms of training had increased in the two year period between reports with the highest increase among internally-run programs.

This has been the case at the University of Rhode Island (URI) where the Provost’s office recognized the need for pedagogical support for online instructors and authorized the Online Teaching Fellows program during the spring semester of 2011. This article shows how URI fits into this mix of programs, and tells the personal story of my participation in this online professional development course for distance learning instructors as well as the lessons I learned and applied to my asynchronous credit course on information literacy.

Online Faculty Development

The findings in the literature on training online instructors are as varied as the approaches that institutions take but there are common threads. What may seem obvious to online instructors, faculty training should emphasize the pedagogical aspects of teaching online rather than the technical; in other words, faculty should learn why they use the technology rather than how they use it (MacDonald & Poniatowska, 2011). This theme resonates throughout the literature. Fish & Wickersham (2009) find what others have found: that faculty must restructure how their course content is delivered and must learn to communicate differently than they do in traditional classrooms. Their literature review shows that online faculty must restructure how course content is delivered, learn to use new technology, and engage in ongoing faculty development. In a survey of participants in MarylandOnline’s Certificate for Online Adjunct Teaching (COAT) program, Shattuck, Dubins & Zilberman (2011) found that the most important role of the online instructor was to set the tone for communicating online and to serve as a guide. Graham & Thomas (2011) also pointed to the influence of a community of like-minded learners and that modeling a training course made a difference in faculty thinking.

Models of online faculty development range from highly structured ones to those that are more organically created. Many institutions use the Quality Matters Program (QM), a formal peer review process of certifying the quality of online courses, which was established in 2003 by MarylandOnline (2010), a consortium of independently-governed higher education institutions. With a structured peer review process and a rubric based on best practices, it formed the basis for a successful inter-institutional project in Maryland, the COAT program, to offer online teaching training for adjuncts at member
institutions (Shattuck et al. 2011). The pilot program was taught online with a primary objective to provide instructors with the experience of online learning from the student’s perspective.

In other large-scale programs at Ashford University and University of the Rockies, instructional design professionals team up with faculty using instructional design principles, QM standards, and e-book publishing to implement an online faculty development program with internal quality assurance reviews and external peer review (Pascal & Riemer, 2010). Even with different missions, the two universities use templates to guide teams and provide guidance while program directors select their own course development teams.

Fang (2007) suggests a new faculty development model that takes a systematic approach to performance analysis that requires administrative support to maintain the learning management system (LMS) and enable effective communication channels to share and form effective social networks for coaching. He offers five categories of development: formal training, communities of practice, performance support, formative evaluation, and knowledge sharing. Fish & Wickersham (2009) also say administrations must share the responsibility of supporting faculty through offering professional development opportunities, keeping the LMS up to date, providing release time, and facilitating ongoing assessment. There are some models where the administration plays a pivotal role like the Distance Education Mentoring Program (DEMP) at Purdue University where the Vice Chancellor for Academic Affairs mandates all faculty who teach online be certified—one way is through completing DEMP; faculty receive release time and a stipend (Barczyk, 2011). DEMP is based on Quality Management principles of customer satisfaction and continuous improvement.

Others take a more organic approach like those at the University of Missouri and Graceland University described by Graham and Thomas (2011) who recommended a mind shift from a centralized distance learning unit toward one that is built on an understanding of the university culture and the needs of the online faculty. There the approach is to include instructional design as a way of thinking and being, and to add a sense of wonder and confidence for faculty so that they are able to design or improve upon online courses in an ongoing manner; using a structure that supports faculty exploration and innovation in best practices without requiring them.

Some models combine both highly-structured and organic approaches. In a case study of participants in the Tutors Moderators course—a three-week introduction on facilitating online groups at Open University in the United Kingdom—MacDonald & Campbell (2010) describe how tutors learn by doing and sharing with their peers by replacing course content with a series of learning activities. Tutors choose three out of five activities and report back each week, for three weeks, on a near-synchronous schedule.

A needs analysis survey at Sacred Heart University showed that organization, planning, and patience are most important in online faculty training (Ginzburg, Chepya, & Demers, 2010). The authors found the most commonly requested topics for training are instructional design, digital communications and managing online discussions; technology training was low on the list. Objectives of the training, among others, were to become familiar with “presence learning” and “e-personality”; employ time management skills; and learning how to build an online learning community in order to maintain a sense of connection. Participants’ comments in a post survey said that experiencing the training as a student was useful for designing online activities and changing face-to-face strategies to reflect the unique situations in online courses. Wilson & Stacey (2004) embrace a flexible model for online learning using local and/or discipline-specific ideas and practices with an emphasis on innovation rather than on technology. They point to an emphasis on group collaborative learning in a professional development setting where faculty can establish teacher presence online and help establish an online learning community. Task areas include welcoming students, establishing ground rules, managing communication, modeling social behavior, and establishing their own identity.
Distance Learning at URI

For at least the past 10 years, the University of Rhode Island has attempted to address the burgeoning distance learning needs of the university. The focus has mainly been on the technological aspects of subscribing to and maintaining an LMS. WebCT was introduced in the late 1990s when faculty began to use the system as a supplement to face-to-face classes; and, after some attention from the Curriculum Affairs Committee, as a delivery method for asynchronous instruction. Information Technology Services (ITS) ran plenty of workshops on how to use WebCT tools for courses but these focused primarily on the mechanics of designing organizing pages, creating and giving quizzes, posting on the discussion board, etc.

With the growing interest in offering asynchronous courses, the URI administration made efforts to address the pedagogical aspects of distance learning. In the mid-2000s, I served on a distance learning committee that began to investigate online faculty training options like subscribing to the Quality Matters program or creating an internal course by exploring and applying best practices in the field. However, the Vice Provost chairing the committee left the university followed by the retirement of the Provost and the President the following two years; any online faculty development discussion was put on hold.

Circumstances brought the various issues surrounding distance learning to a head when the university faced a decision about how to replace the soon-to-be obsolete WebCT as its LMS. With input from faculty and staff, ITS chose to purchase the Sakai Collaborative and Learning Environment rather than subscribing to Blackboard. URI’s Chief Information Officer formed the Sakai Advisory Committee made up of faculty, administrators, and staff to set priorities and address growing pains during the implementation of Sakai on campus. When the technical issues surrounding the implementation were mostly resolved, the committee pressured the new administration to finally address the issue of training faculty in the pedagogy of online learning. The Provost responded by working to create the Office of Online and Distance Learning (OODL) which joins the existing Instructional Development Program; Office of Student Learning Outcomes, Assessment, and Accreditation; and the Instructional Technology Center to support faculty in the advancement of teaching and learning (Joint Committee on Academic Planning, 2010).

Online Teaching Fellows

The Provost appointed Associate Professor of Communications Kathleen Torrens to serve as the Interim Director of OODL, and she promptly implemented URI’s first Online Teaching Fellows (OLTF) program, a training course for faculty who had some experience teaching online. Its goal was to reinforce faculty’s online teaching practices, to provide a forum to communicate with like-minded faculty, and in the future, to form a basis for a sustainable faculty mentoring program.

I fit the criteria for inclusion. Since 2001, I have been teaching LIB120: Introduction to Information Literacy—a 3-credit, general education course offered by University Libraries—during regular semesters in a traditional classroom, and asynchronously during the summer sessions. Learning objectives for the course parallel the Association of College & Research Libraries’ Information Literacy Competency Standards for Higher Education (2006). Students in the course learn to identify an information need, find, evaluate, and use information effectively and ethically. They pick a topic to research over the semester and use finding tools and search strategies to compile a road map of their research called the Paper Trail which consists of annotated bibliographies with useful and non-useful sources, reflective journals, and other evidence of learning the research process. I converted the face-to-face version of LIB120 to the WebCT environment in 2001 and later into Sakai. I kept up with the technological training the University offered, but learned the pedagogical skills as I went along.

Professor Torrens based her design of OLTTF on her experience with UMass Dartmouth’s myCourses Training, an online workshop where faculty can experience navigating an online course as a student would in order to better understand what issues can arise when designing an online course (Board of Trustees, 2011). The OLTTF program, like a majority of training courses at institutions of higher learning, is an internally-created course growing organically out of the faculty’s insistence on pedagogical
training for the growing distance learning community. It has received administrative support first in the creation of the OODL, and in the form of stipends for OLTF participants.

Although I had online teaching experience, I still had some issues with facilitating discussions effectively and creating sense of community in the course. Since I had no formal online teaching training—I had learned by doing—I felt the OLTF would give me a strong foundation for future sections of LIB120 online, especially after reading the objectives of the course. At the end of the six week program, participants would (1) demonstrate their successful navigation of an online course, and (2) obtain, explain, and justify at least three strategies to use in an online or blended course of their own design.

Like many models of online faculty training courses, the OLTF program modeled best practices by including activities for active learning organized into the four units as well as reflection and discussion among peers in the course. Unlike many models, there were two face-to-face meetings: one before the course started and a second meeting where participants shared what we learned in an electronic poster session. Each unit began with a *Start Here* section which not only laid out what students could expect from the unit and what tools we would be using, but also served as a way to build in redundancy so that major points would be reinforced throughout the course.

The four units, organized into Sakai modules, were titled: *Fully Online, Blended/Hybrid, Assessing your Course,* and *Assessing Your Students*. Each module contained what might be called content in a credit course: articles to read, videos by experts, some assessment tool like a short quiz or poll, and most importantly, a discussion area. The initial discussions set up a couple of the important themes found in the literature: building a sense of community and infusing an instructor’s presence in the course. The introductory prompts asked us to introduce ourselves, identify our greatest challenge in teaching online, and share something we have done that no one else has. This was a fascinating look at the eclectic backgrounds of participating faculty, and in sharing, made me feel almost conspiratorial about working with such a group. The challenges everyone identified were just as varied depending on a person’s experience with online teaching and his or her area of study, but several expressed concern with their technical capabilities and time management skills, especially participating as a student.

Since my LIB120 online section is taught asynchronously, the fully online module was most helpful to me. It reinforced strategies I had been using in structuring my course, but also gave me a different way to look at them from a student’s point of view. For instance, I had already been “chunking” content information to make it more easily accessible, but the OLTF course helped me formalize the design of each chunk to include learning objectives, activities and/or discussions, and some way to assess performance.

With Professor Torrens modeling best practices, I saw the instructor’s role as more of a guide or mentor to students rather than just a content provider. With clear expectations and directions from her, we engaged with the material through threaded discussions, posting and reacting to others, and creating a conversation online that modeled the list of best practices. In a related *Take a Moment* break in the middle of the module, we were asked to post our thoughts on online teaching. This was one of a few important breaks that gave us time for reflection and peer review, reinforcing the community aspect of the asynchronous course and mentoring each other. We posed questions and provided advice to each other giving us the wisdom of others’ expertise. In one of the threads we explored the chunking concept applied to podcasts and self-produced videos, much like the short videos embedded into each OLTF module to reinforce each topic. In another we discussed how to enhance our presence in the course. The official wrap-up discussion at the end of the module was more formally structured with several questions posed about the content of the unit as a sort of self-assessment exercise. Again, discussion and peer comments made for a valuable learning experience and one to model in our own courses.

A separate discussion forum on instructor presence in an online course highlighted how important an instructor’s involvement can be. The concept of presence produced a lively discussion. On its face, presence would seem to only have positive effects: students feel as though the instructor is really there for them and shares in the communal aspects of the course. However, the topic brought out ideas from faculty that questioned that premise. If the instructor is too present, will students think he or she is being too
judgmental or critical? Does a student’s class rank or major play a role in how comfortable he or she is with online interactions with instructors? Should teacher-created videos be used to literally substitute for face-to-face instruction? When or how often should an instructor interrupt students’ discussion on a topic? There were no ready answers to these questions, but there were plenty of opinions, experiences and speculations to share.

Strategies for creating blended courses—where there is a mix of face-to-face and online components—were explored in the second unit. Although I focused on the asynchronous aspects of OLTF, I paid close attention to the blended course content and discussions. In 2010 a colleague and I created LIB220: Issues of the Information Age—a “spin off,” if you will, of LIB120—using a problem-based learning model. Designed as a blended course, LIB220 lasted only one semester as such and reverted to a face-to-face format the next year partly because of the pitfalls discussed in this module. Half of the 40 students met in a classroom on Monday, the other half on Wednesday, with readings and activities to be completed online. The online participation met with very limited success. Had I been immersed in an OLTF program at the time, I would have learned about finding the right strategies for mixing online and classroom activities and could have discussed my problems with a supportive group of like-minded professionals. As I read through the OLTF content and engaged in the discussions, I filed away some strategies to pursue if or when the course returns to a blended format: enhancing communication techniques in order to give clear and redundant directions; being more aware of how students interact with each other, the instructor and the content; and assigning grade points to the completion of online activities. This last strategy seemed a good solution to the problem of motivating students to complete the work required in the online portion of the course. The OLTF discussion also explored the use of varied multimedia content to accommodate the perceived interest in entertainment as education by the so-called millennial generation.

One of my main incentives for participating in the OLTF was to learn to effectively assess my students’ activities on the discussion board, and this was thoroughly covered in the unit on assessing student learning. When I converted the face-to-face LIB120 content to an online environment, many of the assessment strategies fit conveniently into the LMS: exercises, assignments, presentations, and quizzes were easy to post, grade, and return to students. However, in fitting the 14-weeks of regular semester content into the 10-week online summer session, I decided to spread the “issues of the information age” portion of the course across the semester using the discussion board, hoping to raise consciousness about how information can be used and misused in this information age. I would pose what I thought were provocative topics at the time (e.g., government surveillance, the USA PATRIOT ACT, e-books, illegal downloading, Wikileaks) but the discussions never took off to my satisfaction. The content of this unit made it plain that I should be clear about the goal of each discussion, communicate my expectations to students, and provide definite criteria for successful postings; things I had only touched on. Most useful to me were the many examples of rubrics and guidelines for setting up and grading discussions linked in the module which provided me with material I could use to adapt and create my own assessment criteria.

The discussion posts for this unit exploded with everyone’s experiences with rubrics and with a more philosophical thread about the effectiveness of online learning in general, giving skeptics of online learning a forum. We returned to the themes of presence and losing control in discussions so that students take a more active role in the direction a topic takes just as the threads in this forum took on a life of their own.

The last unit covered assessing our course sites by using principles of best practices, rubrics and checklists. Self-assessment actually begins during the initial design, making sure the activities and content support the learning objectives, the site is easy to navigate, and the instructor’s presence strikes the right balance of facilitation and intervention. For our last discussion, we were asked to post three discussion prompts that would check for understanding of the content of our course, invite interaction, and lead students into some discussion. This gave us all a chance to practice our skills designing questions that would not only give us an indication of student learning but also how well the students are engaging with the course. The peer reviews of our postings brought out more collective wisdom of the group.
Lessons Learned

One of the objectives of the OLTF program was to obtain at least three strategies to use in an online course of our design. I certainly met that objective and applied my new skills to the subsequent online summer section of LIB120. The three most useful strategies I came away with were: (1) instilling presence, (2) enhancing discussions, and (3) establishing strong communication lines.

With all of the discussion of presence in an online course, I concentrated on building more of myself into the course. For the last few years I had been recording audio podcasts to help orient students to the weekly modules, but this summer I turned to video; presenting myself as a talking head in the first week so students could connect my face to my voice. This first video podcast supplemented my introduction on the discussion board which set the tone for the rest of the class as they posted information about themselves. I tried to inject some humor into the rest of the podcasts and to use examples from my own experience using the resources they would be working with. In the first graded discussion that tied information organization theories to real life, I described my family’s totally unorganized piles of music sheets of all kinds—actual sheet music, pages of typed and handwritten lyrics, chord charts, song lists, music books in all genres, tablatures—and asked students to help me organize them in several ways using strategies they learned in the course content. I tried not to be overbearing in my announcements to the class, generally resorting to “gentle reminders” about due dates or changes in course information, but also making sure the information was replicated elsewhere in the course.

I finally had a chance to adapt guidelines and a rubric for the online discussions of information issues from the many examples identified in the OLTF course. The guidelines first ask students to answer my prompt with an original post and then reply to at least one other student. Other recommendations suggest setting the length and timing of posts, citing outside resources or their own experiences, and using proper netiquette. The grading rubric had three simple elements: (1) the quality of the original post, (2) the reply, and (3) the understanding of the related readings and other relevant sources. This new regimen gave my discussions much more depth than my past sections, but it didn’t quite meet my expectations. Most students made sure they met the minimum requirements and often a discussion would end there. I realized that timing my intervention with the right kind of follow-up questions or comments is a skill that needs cultivation. It will take some more practice on my part to work with the balance that my fellow OLTF colleagues and I discussed between too much intervention in a discussion and not enough. Too much, and students feel you have taken over and closed the discussion; too little, and students stop and wait for guidance.

Communication is really essential to running a successful asynchronous course. I had always sent out an email message before the course started outlining how the course worked and how best to navigate the LMS, but somehow it never seemed enough for some students. I learned to add redundancy to make sure students could not avoid this important message. I added the message to Sakai’s announcements and pointed to it from discussion postings; my first video podcast used the message as a guide to add another layer of redundancy. Adding the video component to my podcasts helped out the visual learners in the course and those who need some entertainment value in their education; a theme in one of the OLTF discussions. I had thought that an audio podcast alone would force students to follow along with their browsers, actively engaging with the resources; but I believe the screencasts using Camtasia clarified many of the course elements that were hard to describe verbally, like finding links on a busy screen or identifying the important parts of an assignment. Of course I made sure that I responded as quickly as I could to students’ questions even though I gave clear expectations in my initial orientation message that it may take me up to 24 to 36 hours to respond.

As for being a student in an online course, I gained quite a bit of empathy for my online students. I was conscientious about completing the readings and contributing to the discussions but I realized the importance of developing good time management skills. I had to fit OLTF coursework into a semester of teaching, attending conferences, and performing my normal library duties while still reflecting on the materials by the deadlines to be able to make the most of the course. Most of my summer students work full time or take several other courses, or both, so I came to understand how the lessons I learned about communication, redundancy, and course design can make it easier for them to succeed. There is still a lot
of work for LIB120 students to complete, but the less time they spend trying to figure out how to engage with the material, the more they will spend on completing the work and engaging with other students.

Also, I was somewhat intimidated at first about jumping into a discussion like many students who are reticent about commenting in class, whether it is online or face-to-face; but after some thoughtful responses to my posts, I became more confident in my participation. Of course, the “students” in OLT are all professionals and so there was little need for the moderator to intervene because the conversations never really stalled; the discussions developed organically. I hope to be able to create the same sense of community in my course by setting up discussions to encourage the kind of interaction I experienced. One big difference between OLT and our students: there were no grades in the OLT program. We learned for the sake of learning and to enhance our online students’ learning experience.

I believe the OLT program succeeding in achieving many of the important goals of online faculty development expressed in the literature: designing a course following best practices of online pedagogy, creating a sense of community among students and instructors, and clearly communicating expectations. The lessons learned in the course have certainly informed my teaching skills and I’m sure that is the case for my OLT colleagues. There will be a permanent Director of OODL in the coming months and hopefully this model online professional development program will continue to grow.
References


Moving from Introverted to Extraverted Embedded Librarian Services: An Example of a Proactive Model

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Librarians at Wayne State College have developed an extraverted online embedded librarian model whereby librarians proactively push out content to students at time-appropriate moments. This article outlines why extraverted approaches are more effective than introverted approaches. It also details how to develop an extraverted program. First, librarians must lay the groundwork for their program. Then, after matching librarians to courses, each librarian should utilize course syllabi to create content that is both course and assignment specific before delivering tips to students at just the right moments. Included is discussion on how to develop both text-based and video-based tips. Finally, this article discusses how to maintain your tips for future use. The intent of the model is to reverse the trend of students using only convenient and previously established resources that may not be best suited for their research goals while also emphasizing the value of librarians as resources.

Introduction

The term embedded librarian has a variety of meanings that depend on the context in which it is placed. Guillot, Stahr, and Meeker (2010) define an embedded librarian program as “a variety of services in a variety of organizational settings including librarians who physically relocate from a library to serve on teams and work more closely within their patron groups” (p. 54). On the other hand, Owens (2008) indicates that an embedded librarian is “one that is added to an online class as an assistant instructor or the equivalent with the cooperation of the primary course instructor” (p. 8). However, the simplest definition may be from Covone and Lann (2010) who indicate that embedded librarianship originated in librarians who were “incorporated on a regular basis into a classroom, whether physical or online” (p. 198-199). The key here is that the librarian is integrated into the classroom and collaborates with the instructors of that course.

Online Embedded Programs

Physically embedding librarians into classrooms and departments is still commonplace. However, now the focus is moving more and more to a virtual or online embedded program. This is occurring for two major reasons: (1) the prevalence of online classes and (2) the continuing drop in reference transactions.

Online classes continue to grow in both distance and on-campus programs. Allen and Seaman (2010) report that in the fall of 2008, online enrollment was 25.3% of the total enrollment in U.S. institutions of higher learning: a 16.9% growth rate from the previous year. This is up from only a 9.6% share of enrollment in the fall of 2002. As a matter of fact, “more than one in four higher education students now take at least one course online” (p. 1). Of the 4.6 million online students, 82% were undergraduates, while graduates accounted for only 14%. This picture of online learning is further complicated by the varying types of online learning available. Courses designated as online typically have no face-to-face meetings and deliver the majority of the content, more than 80%, online through a course management system (CMS). Not included in the count are students in blended or hybrid courses, courses where 30-79% of the content is provided online in conjunction with a minimal amount of face-to-face class sessions, and students in web facilitated courses where anywhere between 1-29% of the content is provided online. The latter are primarily traditional face-to-face courses that use a CMS to post related content such
as syllabi, assignments and tests. The remaining traditional on-campus courses with no online content are slowly becoming the minority.

Reference transactions from Fall 2000 to Fall 2008, including computer searches during a typical week in an academic library, dropped from 1,582,386 to 1,100,863: a drop of 30.4% in only eight years (Carey, Justh & Williams, 2003; Phan, Hardesty, Shekells, & Davis, 2009). As reference transactions decline, librarians are seeking to reach students where they are instead of waiting for patrons to seek them out in at the physical library. Librarians know that the mission of academic libraries is to meet the information and research needs of students, regardless of location. Therefore, in any institution that has a distance program, the library must find a way to connect with those students who do not come to the campus library (Guillot, et al., 2010). This need also extends to the general on-campus student population. York and Vance (2009) indicate that “students are 45 times more likely to start information searches on Web search engines than on the library Web site” (p. 197-198) regardless of the fact that universities and colleges have multiple points of access to online resources. They conclude that libraries must “take their services to [on-campus] students rather than waiting for students to come to them” (p. 198). So, we as librarians should make every effort to meet distance and on-campus students in a web environment. Online embedded librarian programs are an effective effort in accomplishing this goal.

Why Not Be Introverted?

Even within the online embedded arena, there are varying ways to address the needs of students. One way is through an introverted approach whereby librarians either drop a library widget into a course shell or just introduce themselves to the class and wait for students to approach them with questions and concerns that need addressing. It is similar to setting up a virtual version of the reference desk. However, there are drawbacks to approaching embedded services in such a reserved fashion.

The primary concern is reaching students. Use of an introverted approach implies that students know the subtle differences between various resources and can determine what a quality resource is. But as Head and Eisenberg (2009) report, students are unprepared to determine these concepts on their own. “Nearly all of the students in [their research] sample reported always using Google, both for course-related research and everyday life research.” In addition, “when it came to course-related research….almost all of the respondents turned to course readings first”: materials that were “sanctioned by the instructor” (p. 15). Students will not search out library provided resources or the librarian without directed guidance:

Overall, the findings suggest that respondents appear to be driven by familiarity and habit. The use of convenient and nearby information resources—no matter what contextual questions they were trying to answer and no matter whether it was for a course assignment or for their personal use (p. 15).

Therefore, librarians embedded in an online class cannot expect students to seek them out. Instead, they need to turn the tables and seek out the students.

A secondary concern is how instructors and librarians themselves view the usefulness of librarians in embedded courses. With an introverted approach, librarians have no real role in the course and are essentially undervalued. They are relegated to teaching assistant roles where they are often “not added at a level that would allow them to email students or post to discussion boards” (York & Vance, 2009, p. 203). In such circumstances, “faculty rarely acknowledge [the librarian’s] presence” (p. 206) which in return makes the students value the librarian even less. Faculty don’t see the librarian working behind the scenes, frequently checking the class site for questions and concerns, eager to assist students if the students would only ask. Librarians in turn become frustrated with the amount of time they spend checking for questions that are not there especially when the librarians could be better utilized elsewhere.

What is an Extraverted Approach?

In contrast to the introverted model, the extraverted approach has librarians proactively push out content to students at time-appropriate moments. This methodology also utilizes course syllabi to create
content that is both course and assignment specific. The intent of this is to reverse the trend of students using only convenient and previously established resources that may not be best suited for their research goals. It also emphasizes the value of librarians as resources. The library staff at Wayne State College has developed an online embedded librarian model that approaches services in such a way.

**Background**

Wayne State College (WSC) is one of three colleges in the Nebraska State College System. In the fall of 2011, WSC had a full-time enrollment of 2,978. Of that count, 89% (2,690) were undergraduate students and 11% (288) were graduate students. The bulk of our on-campus student population comes from rural communities in northeastern Nebraska and northwestern Iowa. In addition to serving students at our on-campus location in Wayne, WSC also partners with Northeast Community College to serve a small satellite building in South Sioux City, Nebraska. Students seeking the Master of Science in Education are also served through learning communities in selected communities across the state, while the Education Specialist and the Master of Business Administration degrees are offered completely online. Plus, we recently added a Master of Science in Organizational Management (MSOM) degree that is available entirely online in conjunction with the other Nebraska State Colleges, Chadron and Peru State Colleges.

In early 2007, the library director at WSC read several professional articles about online embedded librarian programs. With the goal of better serving our distance students, the staff decided to begin a trial program that summer. This introduction into embedded services was rather hap-hazard with no formal approach to providing services. Basically, we took a reserved and introverted stance in these online classes by introducing ourselves and waiting for students to come to us. We soon discovered that this approach was an ineffective use of our time and our skills. Retrospectively, this discovery was consistent with findings from other researchers and working librarians (Head & Eisenberg, 2009; York & Vance, 2009). Fortunately, the library was able to address this issue when a librarian dedicated to instruction and distance education was hired that same fall. After spending a semester getting to know the initial stages of the program, she suggested that they attempt more pro-active approaches and formalize the methodology used. What resulted was the development of the Wayne State College Extraverted Embedded Librarian Model.

**The Wayne State College Extraverted Embedded Librarian Model**

The Wayne State College Extraverted Embedded Librarian Model follows a series of steps in order to provide time-appropriate content that is directly delivered to students. It is an all-encompassing model that details necessary prep work, typical activities, and end of semester housekeeping. The first steps include how to market the program and match librarians to the appropriate courses in the program. Then it describes how to utilize a course syllabus to create tailored tips and recommendations that assist students with specific course and assignment goals. It also outlines the work of a librarian in the program and how to most effectively use the course management system. Finally, it addresses housekeeping issues that allow librarians to maintain content for future classes and semesters.

**Laying the Groundwork**

Before you get started in an extraverted online embedded librarian program, it is important to understand your boundaries. How many librarians will be participating in the program? How many courses will you expect each librarian to handle? Do you want to focus on a particular department or a particular group of faculty at first? Are you ready to move toward an extraverted model? What level of involvement will be expected of the embedded librarians? Depending on whether you are first starting up your embedded librarian program, expanding your program, or moving from an introverted to an extraverted model, each of these questions may have different answers. Therefore, know where you want to go and how much you can handle now.

Once you know what you want and where you want to go, it is time to advertise your program. Shumaker and Talley (2010) stress that “[successful] programs [are] engaged in … marketing and promotional activities much more frequently then less successful programs” (p. 34). They also indicate that
three types of marketing are best used: (1) word-of-mouth, (2) the use of print materials and (3) face-to-face
presentations. At Wayne State College, we use multiple methods to reach faculty members regardless
of their comfort level with technology. Email messages are the most appropriate for timely reminders
about the existence of your program and may include links to additional information or even attachments. Depending on your institution, you may also find that advertising through social media such as your institutional library blog, Twitter, and/or Facebook can be useful and appropriate. As a smaller institution, we do not use those methods but understand their usefulness in other institutions. Regardless of what electronic advertising you do, be sure to address the major features of your program in the advertisement.

When advertising, it is also important to make an effort to advertise through print media such as
library newsletters and flyers. Shumaker and Talley (2010) indicate that despite the “popularity of
electronic media such as blogs and Websites,” the use of “traditional and low-tech media still have their
place in promoting information services” (p. 34). Indeed, one benefit of advertising in this manner is that it
backs-up any electronic communication sent to faculty that may be lost in the email quagmire of their
inboxes. This approach reaches faculty that are new to using course management systems; individuals who
may also be new to other forms of electronic media. Reinforcing your advertising through print not only
reaches those faculty who are overwhelmed with learning new systems, but also stresses to them that you
are willing to meet them where they are and that you are willing to work with them as they enter the online
classroom environment.

Word-of-mouth is also an important advertising tool. In a small institution such as WSC, it
doesn’t take long to become familiar with the majority of the faculty members. When visiting with faculty
in informal settings, it is nice to be able to present the online embedded program to them at that time. Good
customer service also leads to faculty talking to other faculty. All of this builds your program and can be
extended to larger institutions. Get to know one department at a time. Or, start a chain of goodwill by
promoting your program with one faculty member who would be eager to share their experiences with
fellow colleagues.

**Match Making**

After you have promoted your program, you need to match the appropriate librarian to the right
faculty member and/or class. This can be done in several different ways. For instance, the embedded
librarian coordinator may assign courses based on subject areas. This may be best appropriate when the
institution in question has librarians dedicated to specific subjects. However, this method is also useful for
smaller institutions where librarians have specialty backgrounds in particular subject areas or where
librarians have interests in those areas. Another successful approach is to match librarians with courses in
which they have personal interests. For example, if you have a librarian who is an avid artist, perhaps it
would be best to match them with the art history class. Finally, successful matching may occur when there
is an existing professional relationship or friendship between a librarian and a faculty member. Build upon
that relationship. When there is an existing relationship, the communication and collaboration will work
much better in the online atmosphere.

**Getting Prepared**

Once a librarian has been assigned to a particular course, he or she should get prepared for his or
her involvement in the course. Sometimes, when librarians do not have an opportunity to work with an
instructor beforehand, they find that they need to “interpret [that] faculty member’s intent in an assignment
through the eyes of a student” (Tumbleson & Burke, 2010, p. 983). To prevent some of this frustration,
librarians should contact the instructor first to learn about the course with which they will be working. Ask
about the assignments, what level of research the students are expected to do, and what level of
involvement is expected out of the librarian. It is best if all instructors include information about the
embedded librarian in the syllabus to reinforce to students that the librarian is available as a resource.
However, different classes require varying degrees of participation from students and librarians. For
instance, one instructor may find web resources and Wikipedia articles perfectly acceptable for student use
while another may find it appalling. By the same token, one instructor many want a librarian to actively
participate in the class on a regular basis while another would rather the librarian restrict the posting of
library information to a specific location within the course system that does not interfere with the course content. Therefore, it is imperative that you know the instructor’s comfort-level for your involvement and what the instructor actually wants from you. “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” (Tumbleson & Burke, 2010, p. 983).

Next, you should review the syllabus on your own. Even though you have discussed the course with the instructor, sometimes faculty are not aware of resources that will match their assignments or that may help them and their students with other aspects of a course. Ask for clarification on any assignments listed in the syllabus while keeping an eye out for appropriate moments to mention “niche” library-related concepts to the class. Perhaps the class is studying Beowulf and you can point them to free electronic copies on Project Gutenberg. Or, as in the case at WSC, perhaps the class will be interviewing individuals and could benefit from audio recorders or video cameras available for check-out at the library. The key here is to start matching assignments and other course aspects to the library resources available to faculty and students either in the online environment or physically at the library.

Create a list of the content you want to cover and their corresponding assignment. Decide on the date that you believe the information should be most useful to the student. Should it be a month before the assignment, a week, or the day before? Timing is everything. If you give the information too early, students may forget about what you told them. If you give it too late, it defeats the purpose of providing them with timely information. Either way, you might as well be conducting a one-time bibliographic session.

The timeliness of information is probably the most effective component to an extraverted online embedded program. Bennett and Simning (2010) contrast it with reference services that are rendered at the reference desk:

Certainly, direct access to a librarian in the classroom benefits students at their point of need…. 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….. 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 traditional reference interaction (p. 444).

Part of identifying the point of need involves understanding not only the course content, but the students themselves. Undergraduates often need information literacy basics and overviews of basic resources. On the other hand, graduate students, who are more likely to be non-traditional students with full-time jobs and full-time lives, typically need help in closing the technology gap, especially if they have been away from higher education for a period of time. Arming undergraduates with a keyword list to help them identify the “big picture” is most often a good starting point for their research needs. However, graduate students are typically looking at more detailed information. Therefore, more controlled vocabulary skills and information about subject specific resources is most valuable to them.

For example, an undergraduate may be writing a three page paper on the legalization of marijuana while a graduate student may be preparing a 20 page research paper on the effects of the legalization of marijuana on college-aged students in California. The first group needs a librarian to give them basic, simplified, and fast information to write their paper because it is due very soon. They don’t have the time or the desire for you to teach the in-depth nuances of databases. Librarians need to keep it simple for them while regularly encouraging them to come back to the librarian for further assistance on future assignments. Graduate students, on the other hand, will be working on their topic all semester long. They want to develop a personal relationship with a librarian because their time is limited and valuable. By going to the same librarian, they avoid wasting time re-explaining their research topic to another librarian. Each session
builds upon the previous sessions. The librarian is able to assist them in finding information on a more micro level. All of this should be kept in mind as you develop material to present to students in an online class.

The final part of preparation is to make sure that your access to the course website has been set up successfully. Without this, you will soon find that you are creating more work for the instructor instead of helping the students. Without proper access rights, you may need to ask the instructor to post materials for you, correct your grammar mistakes, or even answer student reference questions. Remember, your goal to be a help, not a hindrance.

**Delivering Content**

Now that you are fully prepared, you are ready to participate in the online class. First things first, let the students know that you are there and who you are. In your introduction, include the following basic information: your general work hours, including weekend access or lack thereof; your contact information in as many forms as possible (e.g., phone, email, text-messaging, office location); how often you will check the class messages and/or discussion board; and examples of the types of things with which you can help them. York and Vance (2009) also highly recommend that the instructor introduce you to the class as well: “Students are far more likely to utilize the embedded librarian if the instructor seems to place value on the service. At a minimum, an embedded librarian should ask the instructor to introduce him or her in the course and encourage students to ask questions” (p. 206).

The introduction is normally where an introverted embedded model would stop. A librarian would just sit and wait for questions to come. However, with an extraverted model, you want to be more proactive in your involvement. Your prep work will guide you in developing tips to timely deliver information to students and faculty.

There are two main types of tips: those that you create ahead of time based on your scheduled list of resources and those that are made “on the fly” in response to student questions. The tips that you planned on creating do not all have to be made at the beginning of the semester. Rather, create them throughout the course at the most appropriate time based on the assignment and the timeline you sketched out during the planning phase. On the fly tips should be created immediately after a question is received from a student or when you realize a tip is needed to cover information that you had not anticipated. Many of these will be individualized and privately prepared for a specific student. Sometimes students ask great questions that could benefit all students in the course. In this case, your on the fly tip should be posted for all to see.

Tips can be posted in various locations within the course management system. Sending messages via the internal messaging feature is the most direct approach to delivering content. The biggest advantage of using this feature is its ability to reach the student directly in his or her own in-box. This is especially true if the messaging software allows you to push the content to students’ personal email accounts. In addition, it is useful to send messages to remind students of the librarian’s presence during a less interactive course. Be aware of the disadvantages to using messaging systems. First, students can feel overwhelmed with all the information if it comes too quickly to them, especially during an intensified summer course. Second, messages may be lost in an in-box. Unless students need it the exact moment the tip is sent, they may gloss over it, losing track of the information. Then when they return to their messages, the tip may be hard to relocate.

A more effective location for content is in a discussion board or forum. One of the biggest advantages is that the tips stay together. They are much easier to find when students need the information provided. Also, when students ask questions in the forum, all students and the instructor benefit from the question and its response. Librarians can also redirect students to specific tips in the forum when necessary rather than recreating the information or trying to recall when an email was sent. Still, there are some disadvantages to this approach. Students actually have to go to the discussion board which not all students will do, regardless of how many times you remind them or the instructor encourages them.
Work with the instructor ahead of time to determine the location that works best for the class. If you need to have the instructor set up a discussion topic, plan it ahead of time when it is most convenient for the instructor so that it doesn’t interrupt the flow of the course. No matter where you decide where to post your tips, you need to be consistent.

There are several ways to approach tip creation. Some tips may be entirely text-based. For instance, you may want to provide a paragraph or two explaining technical information. We use this method to enlighten students that they cannot directly copy and paste a Word document into our course management system, Sakai. Other tips could be a combination of text with an added resource accessed as either an attachment or a hyperlink. Citation style sheets can be provided to students in such a fashion. In the tip you would provide a paragraph explaining the importance of proper citation while providing the actual document through an attachment or link to an outside resource. On the other hand, the tip you want to push out may be best suited to a video format. For example, if you wanted to direct students on how to use a particular database it is best not to provide a running list of steps in text form. A screen capture video can direct the student through the process of using the database in a much more efficient and user-friendly manner. It also reaches students who prefer auditory and visual learning.

Screen capture programs vary in price and complexity. At Wayne State College, we frequently use the free-version of Jing from TechSmith. Jing allows you to capture a one-shot video of what you are doing on the screen with your voice-over explaining your actions. It is free and easy to use. All you need to do is download the software to your desktop. Then, with a simple click of your mouse and a microphone nearby, you are ready to make videos in seconds. The free version limits each video to five minutes and cannot be edited. If you can’t make a tip in less than five minutes, it is probably too long anyway. Plus, for quick tips, not editing isn’t a real hindrance. If you mangle your tip, you can just do it again.

While Jing videos can be saved to your desktop, its most handy feature is its ability to be uploaded to Screencast.com where it can be shared via a hyperlink embedded in your tip post. The free account on Screencast.com allows each registered user 2GB of storage and 2GB of bandwidth per month. In addition to storing your Jing videos there, you can also store other media that you may have created with other software or documents to which you need handy hyperlinks. We have found that this amount of storage and bandwidth works perfectly well for an institution of our size. For more expansive online embedded programs, you may find that you need to upgrade your software.

Maintaining for the Future

If you are planning on assisting with the same courses semester after semester or addressing the same topics in the future, storing your tips is important and convenient. Jing videos and videos made with other software can be stored at Screencast.com. Be sure to give the files a name that is easily recognized. This will aid you in knowing what should remain in storage and what can be discarded later. By the same token, you may want to find an online location to store other documents such as PDF tutorials and handouts or other text materials saved as Word documents. You could also just keep them on your personal computer. The choice is yours. Storing information will also help you make adjustments from semester to semester as class requirements change and as you find newer ways to address issues.

It is also helpful to track information about your online embedded course so that you understand where you have been and where you are going. At Wayne State College, we track what classes each librarian handles so that we know who is the resident “expert” for each class or subject area. Also, each librarian tracks the major assignments for each course, what tips were posted and their connection to those assignments, when those tips were posted, and any student stumbling blocks found along the way. This information will help you reevaluate your program each semester and understand any changes that you can make to improve the content provided.

Lessons Learned

We have discovered that our model is very effective in reaching students regardless of their location. Rather than approaching embedded services by providing content at the beginning of a course
like in a one-stop bibliographic instruction session, or by waiting for questions as one does at a traditional reference desk, the Wayne State College Extraverted Embedded Librarian Model proactively delivers content to students at time-appropriate moments that are neither too early nor too late. Approaching online embedded services in such a manner increases the usage of library resources, limits the “mass chaos” of repetitive questions often found in the online environment, saves students from the frustration of trying to stumble through research on their own, and builds rapport with students and faculty so that librarians are seen as valuable resources.

After informally surveying students and faculty involved with our program, we have learned that much of what we have done within our model is effective. Students commented that they liked the use of short video clips that were given before they were working on the assignment in question. Others commented that they did not need to ask some questions because when they entered the library discussion board, the answers were already provided by the librarian. This lowered their anxiety and made them feel more confident in completing assignments because the tips saved them time and made them feel like they completed the assignments on their own. Some of the best comments indicated that students were now aware of the help available at the library and through the librarian and that they would definitely seek out assistance in the future.

Faculty had similar praise for our approach. By presenting information in such a fashion, faculty themselves discovered library resources and services that they did not know about beforehand. Some indicated that our tips provided to the students would also help the instructors in their prep work for their classes and in their own research. When instructors followed conversations in the discussion boards, they also began to realize that they sometimes take for granted that their students know how to conduct academic research, making librarians all the more important.

Feedback from students and faculty regarding completely online courses in the program was generally positive. On the other hand, they did identify things that we could improve while working online with an on-campus or hybrid course. We discovered that students do not check the course management system as often in those courses as students in completely online courses. Depending on the course, we may need to change how content is delivered. Email may be a better delivery method for such courses despite its disadvantages as discussed earlier. Still, students can find the barrage of emails annoying. The lesson? You can’t make everyone happy. Despite this, we get the overall impression that both students and faculty appreciated the program and services we provided.

**Conclusion**

The Wayne State College Extraverted Embedded Librarian Model did not happen overnight. It took time with plenty of trial and error to develop. We also realize that the model is not set in stone and continues to develop semester to semester and year to year as student needs change. Also, even with improvements, no model is perfect. Still, we feel we are better serving them by proactively delivering content to students at time appropriate moments throughout the semester. The basics of this model can easily be applied to other institutions. Our central theme of using extraverted approaches can also be modified and applied to other programs beyond the library to provide better quality services across campus. We encourage you to experiment and explore proactive approaches that will work for you and your institution.
References


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Although academic librarians have been teaching information literacy online for years, the increasing number of nontraditional students learning online has motivated many librarians to develop web-based tools that help students independently learn to identify, access, evaluate, and use information resources in the online environment. Adult learners, especially those learning at a distance, expect to take the initiative in directing their own learning. In 2011, Central Michigan University developed a self-directed learning module to guide graduate students through the process of researching and writing a literature review. Students can access the Literature Review Guide on demand to diagnose learning needs, examine a variety of multimedia tools and resources, select appropriate learning strategies, and evaluate their own learning outcomes. The planning, implementation and evaluation of this online learning resource can be replicated to develop self-directed learning modules that facilitate improved digital literacy skills for any student learning online.

Introduction

The growth of online education over the past decade has had a significant impact on universities and the services they provide. According to the Sloan Consortium’s recent survey, more than two thirds of all higher education institutions now offer online courses and over half of chief academic officers report that online education is part of their long term strategy (Allen, 2007). The current economy has also affected enrollments, with over half of institutions surveyed indicating that they experienced increased demand for both online and face-to-face courses (Allen, 2007). Rising unemployment has compelled increasing numbers of working adults to return to the classroom and they are choosing the flexibility and convenience of online education in order to balance their studies with other responsibilities.

Online education challenges all who work in higher education to adapt and change to better meet the needs of students they may never see. While relationships are still important for teaching and learning, technology now bears much of the responsibility for making connections between teacher and student, student and student, and student and information resources. Instructors have had to alter their teaching practices to fit the online environment, and as more adults enter the online classroom, they must also adapt to meet the particular needs of nontraditional students. Fortunately, there is considerable research documenting the characteristics and learning preferences of adult learners, and in many ways, the asynchronous nature of online learning is well-suited to teaching adults who are generally more autonomous and self-directed than traditional students.

With online enrollments increasing at a faster rate than overall enrollments, there is also a growing demand for services that support teaching and learning in the online environment. Technological advances have made it possible to interact with students in a variety of ways, and reference services in traditional academic libraries are likely to include virtual communication methods such as interactive chat and text messaging. Face-to-face library instruction often emphasizes electronic resources over print in response to changing user demand, and libraries have adopted technological innovations such as web conferencing software, course management systems, and screencasting to provide web-based instruction to students learning at a distance. Because the number and variety of information resources available electronically has greatly increased in recent years, library collections can now provide all students – both local and remote - with improved access to scholarly research. But even as academic libraries embrace the digital future, the barriers inherent to the online environment, and the sometimes limited technical and research
skills of returning adult students, have made facilitating the development of information literacy an increasingly important role for librarians.

Academic libraries are charged with providing equivalent instruction to all students, regardless of where they do their learning. According to the Association of College Research Libraries’ Guidelines for Distance Learning Library Services, institutions should provide distance students with a “program of library user instruction designed to instill independent and effective information literacy skills” (ACRL, 2004). Given the rising popularity of online education and the budget reductions facing most academic libraries, librarians are looking to technology to find a way to guide students learning at a distance through the complex, transformational process of identifying, evaluating, and using information in an increasingly digital world.

Background

Central Michigan University (CMU) has been offering off-campus programs since 1971, with the first “Internet courses” delivered in 1994. Of the more than 28,000 students enrolled today, almost a quarter take classes online or at more than sixty off-campus locations in the United States, Canada, and Mexico. Like many institutions, CMU has experienced substantial growth in online enrollments, with registrations increasing around 20% each year (CMU Prof Ed Annual Report, 2009).

Of the twelve undergraduate and graduate programs offered completely online, the Master of Science in Administration (MSA) program is the largest. This degree is primarily directed towards administrators and supervisors working in a variety of administrative settings. The program consists of six core courses plus electives that support the nine concentrations that are offered. Classes are typically scheduled on weekends over an eight week period. At the end of the two year program, students are required to complete a research project on an organizational administrative issue or problem. This capstone paper integrates the theoretical and applied knowledge gained throughout the program with the student’s own professional experience. One of the key components of this paper is the literature review, which “presents a summary of the information/concepts derived from the published literature and from the review of organizational documents” (MSA Student Guide, 2010).

The graduate students in the MSA program come from a variety of backgrounds, and while they may be experts in their individual fields, they frequently have gaps in their understanding of how to find and use high quality information that is relevant to their research, especially when it must be accessed online. To address this need, librarians at CMU’s Off-Campus Library Services (OCLS) present a one-hour instruction session during the first weekend of the Foundations of Research Methods in Administration (MSA 600) class. If the course is offered face-to-face at an off-campus location, the librarian works with faculty to arrange an in-person visit to the class. If the course is offered online, the librarian delivers instruction using web conferencing technology, recording the session for students’ later review. Instruction sessions, whether delivered in-person or online, provide an introduction to the research process, guidance in the selection and use of online databases, and an overview of available library services. These one-shot sessions do not allow for an in-depth discussion of planning and writing a literature review. Students are offered post-instruction support through program- and course-specific research guides, online tutorials, and a flexible Ask a Librarian service, but anecdotal evidence gained through virtual reference interviews, along with ongoing attrition of students enrolled in the MSA program, points to a need for enhanced support for students struggling to complete a literature review.

Adult Learners

Although the demographics of CMU’s online students are changing due to increasing undergraduate enrollments, students completing the MSA program are typically working adults. A student survey by Gold, Ivanitskaya, and Preston (2001) indicates that the majority of the graduates who responded were between 30 and 45 years old. These students, like many adult learners, are highly motivated to complete a degree that can advance their careers and improve the lives of their families. They bring a wealth of life experience to their studies and benefit from interaction with their peers, allowing them to learn from the experiences of others and build on their prior knowledge. Returning students may be most
familiar with instructor-led learning in a traditional classroom, so online education presents new challenges and opportunities that can ultimately enhance their learning experience, as long as instruction is designed with adult learning theory in mind. Cercone (2008) outlines assumptions first introduced by Malcolm Knowles’ theory of andragogy, including the key assumption that adult learners are self-directed in completing their goals. When adult learners are provided with an opportunity to define learning objectives, select relevant activities, and determine appropriate forms of evaluation, they will remain engaged and motivated. Adults learn by applying new information to previous knowledge and experience, and learn best when content is relevant and can be immediately applied in practice (Cercone, 2008; Merriam, 2001; Garland, 1994). This transformational learning requires a degree of autonomy that suits many adult learners, although some may need guidance in order to correct false assumptions and enable them to relate new concepts to what they already know.

In applying the principles of adult learning theory to instructional design, Cercone (2008) suggests that instructors should outline clear objectives, provide well-structured content, and create a variety of authentic tasks to reinforce learning that is relevant and applicable to the students’ real-world experience. In addition, students should also be provided with opportunities for social interaction and self-reflection to facilitate meaningful learning.

**Self-Directed Learning**

The theory of self-directed learning has been well-researched in relation to adult education. When students have a role in designing their own learning, they are intrinsically motivated to meet the learning objectives they have set for themselves. But the preference that adults have for self-directed learning does not necessarily mean that they all have the skills necessary for successful self-direction (Cercone, 2008). Mezirow asserts that instructors should “assist adults to learn in a way that enhances their capability to function as self-directed learners” (as cited in Merriam, 2001, p. 9). Self-directed learning involves more than the simple management of learning tasks, although self-management is certainly one feature. One of the most appealing aspects of online education is the ability for students to determine the pace, duration, and resources that are needed for the lesson. But these are primarily external factors, and the concept of self-direction also involves cognitive and motivational characteristics of the learner (Garrison, 1997).

Garrison’s (1997) model describes three dimensions: self-management, self-monitoring, and motivation, and he makes a point of integrating the three to avoid limiting the concept of self-directed learning to the management of external tasks. Self-monitoring involves taking responsibility for constructing meaning and determining how well new knowledge has been integrated with what is already known. Students use this ongoing self-evaluation to decide what additional learning activities may be needed to achieve their objectives. The concept of student motivation has sparked its own field of study, but in the context of self-directed learning, it applies to both the decision to get started and the effort to persist (Garrison, 1997).

Instructors can and should apply these principles to foster self-directed learning by online students. Strategies can include allowing students to select and manage a variety of learning tasks appropriate to the content, as well as building in opportunities for feedback and self-evaluation. Developing learning activities that are engaging and relevant can help to sustain students’ motivation throughout the lesson or course. Fortunately, the online environment is conducive to embedding a variety of multimedia learning objects, so online instructors can tailor the content to suit any learning style. Kim and Frick (2008) also suggest that perceived difficulty can negatively impact student motivation, so instructors should be sure to develop tasks with the appropriate level of difficulty. Students may not be able to accomplish the task alone, but should be able to do so with guidance.

**Problem**

Although the CMU’s Off-Campus Library Services is generally effective in supporting the research needs of off-campus and online students, the reference librarians recognized that most requests from MSA students were related to locating research materials to write the literature review for the MSA capstone project. Not only were such requests frequent, but similar requests were sometimes submitted
more than once, indicating that students who had already received help were sometimes finding it difficult to continue their research on their own. Library assistance typically involved directing students to appropriate databases, suggesting search terms, and even sending a selection of article citations, book citations, and web links to get the student started. Students were encouraged to use the resources provided to locate additional resources, but follow-up interactions seemed to indicate that some students were simply following directions but not actually applying information literacy skills to the research process. With only limited instruction provided through one-time sessions, and with the necessity of locating and accessing research materials online, the OCLS librarians felt that MSA students needed an opportunity to develop improved information literacy skills in order to successfully navigate the research process and complete their literature reviews.

**Module Development**

The library had implemented Springshare’s LibGuides service the previous year, and librarians had created nearly eighty subject- and course-specific research guides to assist students in locating research materials that were relevant to their topics. While usage statistics suggested that these guides were well-used, the data doesn’t demonstrate whether the links and information provided actually enabled students to successfully complete their research. As with any web-based resource, the information literate student can independently navigate the site, then select, evaluate, synthesize and apply the information that meets the research need. A LibGuides “hit” implies selection, but it does not confirm whether the student can actually use the information discovered through the guide.

One of the OCLS librarians decided to develop a tool that would not only help students discover the resources linked in the research guides, but also help them to develop the skills necessary to locate information independently and effectively use it to support their learning. For the intended audience of MSA students, the librarian decided to supplement the existing research guides, which organize and link resources by topic, with a more linear step-by-step learning module that would guide students through the literature review process while fostering the development of information literacy skills that would serve them in their academic, professional, and personal research. Understanding that these users were likely to be nontraditional students, the librarian planned to integrate principles related to adult learning and self-directed learning to best engage them throughout their use of the learning module.

The tabbed pages format of the LibGuides interface was thought to be a good fit for the step-by-step structure planned for the learning module. OCLS librarians were already familiar with the editing, linking, and embedding features that help to make LibGuides pages dynamic and easy to navigate. With the tool selected, the librarian creating the module could begin planning the project. She decided to use the ADDIE model of instructional design to guide the process since the learning module was intended to serve as online instruction. Strickland’s ADDIE web guide describes the phases of the ADDIE process – analyze, design, develop, implement, and evaluate (n.d.) The librarian therefore had to first analyze various considerations, including the audience, the instructional goals, the delivery options, and any constraints that could affect the project. The design phase involved determining strategies to achieve the instructional objectives. The next step involved actually developing the content and creating multimedia components, and finally, the project could be implemented and evaluated.

The librarian used the Association of College and Research Libraries’ information literacy standards to identify the list of competencies that students should develop as a result of the training (ACRL, 2000). The learning objectives that formed the structure of the learning module involved asking students to define a research question and identify concepts to describe their information need, identify and select resources appropriate to the research topic, construct and implement an effective online search strategy, evaluate information quality based on specific criteria, synthesize, and apply key ideas gathered from the literature, and properly document and cite information resources. Each section of the learning module addressed one learning objective, and students would be expected to navigate through the sections in sequence. In addition to instructional content and readings, each section would also include multimedia such as embedded videos and interactive quizzes, and students would be asked to assess their own learning throughout the learning module by completing authentic tasks that required them to apply what they had learned.
The tasks and assessments were informed by Bloom’s revised taxonomy, with the goal of engaging students in higher order thinking skills that enhance learning (Anderson and Krathwohl, 2001). For example, students might be asked to remember and understand basic concepts related to the learning objective, but they would also be asked to analyze, evaluate, or create new knowledge through completion of an action item related to the content in that section. The librarian employed problem-based learning to better engage an audience of adult learners who would be interested in immediately applying what they had learned to relevant tasks. Activities that employ higher order thinking skills were also intended to match the difficulty level to the learners’ potential since perceived difficulty can be a key factor in the self-directed learner’s motivation to persist through the module.

Because the library had already developed research guides and instructional content on the OCLS web site, much of the content for the learning module already existed in other areas of the site. The librarian collected useful information literacy-related content for the Literature Review module and organized it around specific learning objectives that related to the skill to be developed. The librarian also located exemplary content developed by other libraries, seeking out resources that were Creative Commons-licensed whenever possible. External resources were linked rather than embedded, and resource credits were listed as part of the guide. The librarian took pains to clearly state learning objectives and be consistent in structuring content on each page in consideration of the adult learner’s preference for clear learning objectives and well-structured content. Multimedia elements were included whenever appropriate to sustain interest and appeal to a variety of learning styles.

Before publishing the completed module, the OCLS librarians were asked to navigate through the content, try out the multimedia elements and exercises, and then provide feedback to the module creator through a survey embedded in the guide. This pre-launch feedback from librarians prompted a number of corrections and refinements, and the module creator decided to keep the survey instrument embedded in the guide but hide it from public view until a later date. While the survey was developed to collect feedback from librarians who support MSA students, the module creator felt it could be revised and reissued to the students themselves. Once the final revisions were made, the Literature Review Guide was published, linked from related guides and web pages, and promoted to both students and faculty.

Evaluation

Designed as a web-based module for self-directed learning, measuring learning outcomes of the Literature Review Guide is primarily done by the students themselves. Self-assessments were built into each section of the module and self-assessment responses are submitted via third-party tools such as JotForm and Quibblo. While the guide creator receives notification with the anonymous submissions via email, there is no way to provide direct feedback to students. Since these assessments were intended to help the student monitor his or her own learning, the email confirmations serve only to alert the module creator that the assessment tools are being used. The module also included a final self-assessment to allow students to determine if the skills developed through the completion of the learning module facilitating researching and writing an effective literature review. After navigating through sections that addressed each learning objective, students were asked to actually write a draft, use a rubric to self-evaluate, then submit the literature review chapter to the university’s online writing center to get additional feedback. While this exercise would not be graded, it served to replicate the evaluation done by faculty teaching the MSA research class. The nature of the self-directed learning module prohibits the social interaction so important to adult learners, but the module creator wanted to at least provide an opportunity for students to receive feedback from their peers virtually. The final self-assessment was also intended to provide adult students with an opportunity for self-reflection, and to motivate them to make necessary revisions before submitting their literature reviews for a grade.

Beyond encouraging students to assess their own learning, the module creator was interested in understanding student perceptions about whether the learning module helped them to develop the skills needed to identify, evaluate, synthesize, and use information resources to write a literature review. To this end, user polls were included in each section, allowing students to submit on-the-spot feedback about how well the learning module was meeting their needs. The librarian also planned to use LibGuides usage
statistics to find out how the module and its components were used. Over the first year of its use, very little feedback on the Literature Review Guide was submitted via the user polls. While the polls have been retained on the section pages, the sporadic data collected did not prove to be useful in gauging overall effectiveness of the module. Fortunately, the system-supplied statistics generated through the LibGuides service did help the library understand how students were using the learning module. While usage varied according to the academic calendar, and the learning module home page obviously had the highest usage, the section on synthesizing information received the next highest number of visits. The OCLS librarians agree that synthesizing and applying information for use in the literature review presents a significant challenge for many MSA students, so it was gratifying to see that so many students were using this section of the learning module to address this need. Overall usage of the Literature Review learning module, while not as significant as some of the more popular subject guides offered, compared favorably to usage of several assignment-specific guides. Usage data also helped the library determine which of the resources provided throughout the learning module were most used. The most popular links and tools included embedded videos, PDF worksheets, and sample documents. This helped confirm that the inclusion of a wide variety of formats was appropriate for an adult audience.

Since usage data alone does not demonstrate the effectiveness of the learning module in meeting its instructional objectives, additional feedback will be collected through a student survey. The survey instrument initially used with librarians will be revised and published as part of the learning module so students can provide feedback to the library as they complete the module. It is hoped that this qualitative data, combined with the usage statistics generated through the LibGuides system, will help the library to refine the tool and make it more effective at helping students to develop information literacy skills necessary to complete a literature review.

Challenges and Recommendations

Based on the limited information gathered over the first year of its use, the Literature Review learning module appears to be well-used by students and popular with faculty, some of whom assign its completion as part of the MSA research class. The use of specific resources and tools linked throughout the module and the ongoing self-assessment notifications received by the module creator provide some indication that students are able to navigate through the module’s learning objectives and select appropriate resources to meet them. What is not known is whether students who begin the module persist through each of the sections and complete the final assessment. Without this information, it is difficult to determine whether the module meets the needs of most of the adult learners it was designed to serve, or if it offers adequate opportunity for the self-reflection and social interaction that enhance learning in an online environment.

It would be possible to address some of these concerns by building in ways to monitor students’ progress through the module and using a variety of technologies to facilitate interaction. For example, rather than simply noting the submissions of anonymous self-assessments, the assessment forms could request contact information so direct follow-up or coaching could be provided as needed. A librarian-monitored blog or Facebook page could allow students completing the learning module to interact with one another and share experiences and insights. Implementation of the student survey at the completion of the module should provide additional feedback that will help the library determine what areas of the module should be more interactive. It would also be interesting to collect more detailed usage data, perhaps through the use of Google Analytics, and track how students navigate through the module, how much time they spend on various resources and activities, and whether they work through the sections to completion. As librarians understand more about how students are using the Literature Review learning module, they can apply what was learned through the development of this module to the creation of additional modules that address students’ needs. As the university sees more adult students enrolling in online programs, librarians can continue to apply principles related to adult learning and self-directed learning to the development of web-based learning modules that will meet their unique needs.
References


Information Literacy Development at a Distance: Embedded or Reality?

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A small library using two full time equivalent (FTE) professional staff integrated into the Moodle environment of over 40 postgraduate distance courses with the potential to reach over 1,800 students and getting results. How? This is not embedding as many would think of it, with the librarian an active teacher throughout the entire length of the course. Through the use of reusable learning objects, and by working collaboratively with academic staff to place authentic information literacy development tasks at the point of need in the online environment, a small team has been able to make considerable in-roads into the postgraduate programs of the entire College in a short space of time. This paper outlines the model used, and how the librarians are using evaluation of outcomes to support evidence based library and information practice.

Introduction

Massey University is a medium sized teaching and research university in New Zealand with a 50 year history of distance education with a headcount of 14,000 distance education (DE) students. While online teaching had been used for several decades, in 2008 an institution-wide move to Moodle as a Learning Management System (LMS) provided an opportunity for librarians working with distance students to consider how they might develop information literacy (IL) skills making use of the new technologies available to them. This evolved into a project to develop a set of reusable online learning objects that could be used in Moodle (Lamond, 2010).

The current paper outlines the next stage in the process, of taking these objects and other resources and integrating them, and librarians, into Moodle courses. The College of Education Library has a small team of two full time equivalent (FTE) professional liaison librarians serving more than 4,000 students and faculty members. Deep embedding with this level of resourcing was never going to be a possibility, instead a sustainable and scalable model was needed that could then be replicated across other courses and colleges in the University.

Background

The title of this paper is deliberately provocative as it is proposed that there is such a wide range of understanding of what “embedding” of library services looks like that the library profession needs to come to a clear understanding of what is being described before we can move forward with developing IL interventions. Bowler and Street (2008) provide a useful scale of “embedment” from the most general level of designing IL outcomes that are linked to a particular assignment, to the librarian co-teaching the entire course, not just the IL activities. Shumaker (2007) makes a distinction between embedded librarians in an online context and those physically embedded in their communities. Dewey, in one of the seminal articles on embedded librarianship, states:

The concept of embedding implies 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. Embedding requires 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 (Dewey, 2005, p. 6).

It is therefore mooted that many of the current practices in online learning environments do not constitute embedding as described by Dewey. While embedding to this degree is undoubtedly to be preferred, at some stage the issue of reach and reality must be considered. In New Zealand an academic faculty member
may teach or co-teach five courses each year, and that would be considered a heavy workload. If the aim
was for a librarian to be deeply embedded and co-teaching in courses—online or face-to-face—at a similar
ratio library, resourcing would need to be expanded exponentially and in this economic climate this is not a
possibility. Libraries do not have the staff resources to cope with this level of commitment to teaching and
still do all the other roles assigned to them. There is a significant risk of reputation damage with over
promising of co-teaching or embedding, and not being able to deliver to a high standard when demand
outstrips resourcing. Hence, this paper describes a model that is loosely based on embedding in that it
requires a presence in the learning space, but is sustainable and scalable across a large number of courses
with a small team.

The Integrated Information Literacy Model

The model was first used in 2010 and further developed in 2011 based on evidence and is
structured around the use of library developed reusable online learning objects within an information
literacy module in the course. The module is created using Moodle book (for more information, see
http://docs.moodle.org/21/en/Book_module), and includes explanation and information for learners,
learning objects and authentic tasks. The tasks require that student responses are posted to a Moodle forum
that library staff monitor.

Library content is strategically placed in the course material at the stage where authentic task
learning is most likely to motivate the students to engage and learn (Deci & Ryan, 1985; Ryan & Deci,
2000). The learning objects that are used in the module content are expressly designed to be generic across
multiple disciplines. This ensures that library staff resources are used to the best advantage and time is not
spent regularly recreating content that already exists. In order for the teaching to be contextualized for the
learner the Moodle book is used to provide course specific context, however, once the learning objectives
and lesson plan are designed the content of one Moodle book can be reused with minimal extra work across
a range of courses. The learning objects are a prescribed and strictly limited set of screencasts and online
presentations, and are developed and maintained by all the teaching librarians at the university, so again
workload is manageable and sustainable.

Authentic tasks are set as part of the Moodle content, encouraging situated learning (Lave &
Wenger, 1991) that reinforces and self-tests the students’ understanding. The tasks are not compulsory or
for credit, so a key success factor is working collaboratively with faculty who encourage students to
undertake the tasks and articulate the intrinsic benefits of being an information literate scholar. If the
students are able to clearly see that they will benefit from accomplishing the tasks set as part of the course,
it is not necessary to mandate activity in order to engage them; therefore, the burden of marking
assignments is avoided. Again, the tasks once established, can essentially be reused across a range of
courses. Tasks are designed to mirror the information and research activities that the students are going to
need to be able to do to complete their assignments. The tasks are intended to develop transferable skills
that will be of use to them throughout their academic careers and beyond. As an example, a usual task in
the model will require the students to search an academic database and reflect on their search strategy and
results, thereby encouraging the development of both searching skills and evaluation of results.

The final element of the model is a librarian presence in a library forum (i.e., an asynchronous
discussion board) in the Moodle course where responses to the tasks are posted. The forums are an
important part of the model as they provide for both one-to-one and one-to-many communication and
learning. While this could become unmanageable in a workload sense, it has been found that setting clear
expectations for response times from teaching staff and allowing students to learn from each other in the
forums is an important part of the online learning design (Dunlap, 2005; Harris & Sandor, 2007; Luca &
Mcloughlin, 2004). Library staff will always respond to the first couple of posts in a forum to show
awareness and presence, and will answer questions or respond where needed to guide students, but
allowing time for peer support and peer to peer learning is an important strategy (Redmond, 2011). As the
forums are open to all participants in the course, posting an answer to one question can reach many students
who may have the same question.

The Model in Action: College of Education Postgraduate Courses

A large proportion of postgraduate students in the College of Education return to study after a
lengthy period away from tertiary study, usually spent practicing in the classroom. Most continue full or
part-time study and study at a distance. They are expected to access high quality peer-reviewed literature,
but the environment has changed greatly since they last studied. They need the skills to navigate the new information landscape.

Previously, students came to the library for a class if they attended an on-campus course, however, the library was not present in their online course. Frequently the library class was scheduled at the end of a long, very full day. There was usually a wide variation in the students’ needs and previous experience. To cement the skills taught, students need to do hands-on practice but time constraints and often large class sizes, meant this wasn’t always possible. Those who were unable to attend an on-campus course missed out on information literacy classes completely.

Librarians felt there was a need for research skills to be taught more effectively to post-graduate distance students. Discussions with faculty had shown that they had the same concerns about the constraints of the library classes. Librarians devised a model to be taught online, based on the learning outcomes for a face-to-face class. They then communicated the potential advantages to the group of lecturers who always booked face-to-face library skills classes during their on campus course. The arguments for change were convincing, and particularly appealing was the fact that the online model reached all students, not just those who attended the on-campus course. It was evident from their feedback that lecturers would appreciate that it freed up time on their face-to-face course and the librarians believed that learning objectives could be met effectively. It was also felt that it would suit many students better. Students could complete the task at their own speed, in their own time; they could check for themselves that they had achieved the learning outcomes; they could view the learning objects as often as they needed to, or not at all if they already had the skills to complete the tasks. The Moodle forum provided the opportunity to ask questions of the librarian so personal interaction between librarian and student was still possible.

Workload in the College of Education is high and lecturers were heavily involved in substantial programme changes. If the model had required a lot of input from academic staff, it is believed that librarians would not have been accepted as teachers within the courses. Lecturers readily agreed to the proposal that librarians would create the content and monitor the forum. A copy of the intended content was shared with the lecturer together with an invitation to discuss changes if they wished. Initially the level of input from lecturers was low, but working in an integrated manner it has opened up excellent opportunities for collaborative conversations between teaching faculty and librarians. Increasingly librarians and lecturers are working more collaboratively to develop the model further in order improve the student experience in their online course.

Analysis of Outcomes

So what has been achieved? Did the possible advantages meet expectations? Analysis of the courses at the end of the academic year indicates that there are many factors that influence the level of engagement with the library content. There is wide variation in lecturer expectation of the level of online engagement. One way of capturing this factor is the concept of “onlineness” (Palmer, 2011). This is the degree to which learners are expected to engage in the online learning space in order to achieve the learning outcomes of the course. In the courses used with this model in 2011, there was wide variance: everything from the use of an online space being mandated for teaching by the institution—and therefore little engagement from faculty—to the course being delivered fully online. Consequently, in some courses there was little chance of exposure to the library module when there was no other expectation of needing to engage in the online space.
Figure 1. Correlation of ‘onlineness’ and viewing IL content.

In courses where lecturers expected high engagement, a posting from them pointing out the value of the library content and the actual need to use library resources increased engagement.

Figure 2. Correlation of faculty support of IL component and viewing IL content.
Placement in the online course is important. There is much better engagement when the library content is within a designated section of the student’s work (i.e., where the expected work for a period of time is outlined) and at the point where the lecturer would expect the student to start working on an assignment that requires them to independently find information. This is a direct attempt to replicate when an on-campus learner might approach a reference desk in a physical library.

Figure 3. Correlation of need to use IL skills and viewing IL content.

Figure 4. Correlation of placement of IL component and viewing IL content.
Thus, the model worked well in terms of student engagement with the IL material when (a) the library module was well-placed at the point of need, (b) the lecturer referred to it, (c) there was a real need for the students to independently find information, and (d) the online component of the course was of high importance to learning. While the figures display the correlation between the four critical factors and the viewing of IL content, similar trends were seen in correlations between the four critical factors and viewing the library discussion forums.

Similarly, student engagement decreased when some or all of these factors were not at the optimal level. Librarians analyzed each course against the four factors deemed to be important for engagement. Student engagement with the library component was then analyzed using three Moodle participation reports: viewing the library book, viewing the library forum, and posting to the library forum. These reports represent as closely as possible attending a face-to-face class; listening to student and librarian questions, answers and comments; and asking a question or making a comment. Not posting the tasks to the library forum was not seen as “failure” as teaching librarians are very aware that students have different preferences in the way they learn; some preferring learning by listening and watching; others by asking and responding to questions.

While student feedback was not sought, over 10% of the enrolled students made unsolicited comments: all of which were positive about the library content and involvement. Some commented that they wished they had had access to this in their early years of university study. One student said, “This was a good practice leading up to my literature review and has made me more aware of how to effectively search databases.” Another commented, “I found these tutorials effective. I wish I knew this before the first assignments as it would have been very useful. My strategy to use keywords and to reevaluate [sic] when searching to find the best combinations allowed me to comprehensively source relevant and useful information. This is a very useful tool in engaging in learning.”

Student forum posts reporting on their tasks were analyzed. Librarians teaching in all courses reported that posts were of high quality with well-structured answers to the questions posed in the tasks. Some posts prompted discussion between students and the librarian. Some posts acknowledged difficulty in completing the tasks, and feedback from the librarians was received appreciatively. Other students’ posts indicated that they had completed the tasks extremely well, with some indicating that they had relied on the learning objects to do so. There was sometimes rich discussion between student and librarian about search strategies and modifications of the strategy to achieve better results.

A closer analysis of the course in which all conditions were favorable for engagement with the library content was possible because the librarian worked closely with the lecturer and was given all of the final assignments to evaluate. At the start of the course students were asked to describe their information seeking behavior to the librarian and lecturer. Forty-eight percent of the students reported unsophisticated information seeking behavior. A sample of comments include: “Hang round with my friend to see which shelves they go to in the Library”, “Hit and miss and trial and error”, “Search the online library”, “Google it”, and “Internet”. The lecturer in this course on health education was concerned that all students understand that health education must be based on good research, not, as the lecturer put it, on “some hunch or personal crusade”. At the end of the course she commented that the quality of literature used in assignments had improved markedly on previous years when no information skills module had been incorporated. There is a correlation between good quality assignments using credible sources and student participation in the Moodle library module. From another course where the model was used, the lecturer commented, “Students have reported to lecturing staff the value of the tutorials as well as the skills and confidence gained. Submitted assignments reveal higher quality literature reviews, more accurate referencing, and increasing levels of literature searching compared with previous years.”

Conclusions

The key findings from the analysis above show that placement of the material, high levels of “onliness” for teaching and learning, faculty endorsement, and an obvious need for research skills are critical success factors. The authors believe that this can be achieved by working in an integrated parallel manner with faculty but does not require the level of time and teaching commitment that embedding seems to require.

In order to implement the model, it is critical that librarians develop partnerships of mutual respect with faculty as fellow experts in our field. We need as a profession to be able to demonstrate our
knowledge and understanding and advocate clearly for the inclusion of information literacy development content in programs of study. We also need to use our professional knowledge to ensure that the IL content is physically placed in any online course where it needs to be to achieve the learning outcomes. Previous experiences have shown that online IL content can become as sidelined and peripheral to the course as the traditional “library tour” unless faculty and librarians have a mutual respect for each other's professional skills and knowledge.

It is the authors’ hope that this model can be deployed in other colleges throughout the university and beyond, therefore making the greatest use of scarce librarian time to develop transferable information and research skills in students, while following sound pedagogical theories of authentic, situated learning. This way we come even closer to providing an equitable learning experience for DE students without needing a huge injection of library resourcing.

During 2012, the model will be further modified using the premise of evidence-based librarianship (Booth, 2003) as a framework and the intention is to implement across the entire College of Education where possible; all of this with no increase in library staffing levels.

A key area for further research is to gather student evaluation data about the usefulness of the model and then to use this information to make improvements to both the content and the model.
References


Adapting an existing face-to-face information literacy course that teaches undergraduates how to successfully conduct research and creating an online or hybrid version is a multi-step process. It begins with a desire to reach more students and help them achieve academic success. The primary learning outcomes for any information literacy course are to develop 21st century information literacy skills and provide clarity regarding the research process. This paper provides a step-by-step guide of the transition process from inception to implementation, offering insights and advice to librarians who may be planning such a transition or are building an online information literacy class from the ground up.

Introduction

EDT 251, Effective Use of Libraries, is a standard course offering at Miami University Middletown. It has been offered as a two credit course which earns a letter grade. It is a late-start, elective course and runs for the last 10 weeks of a 15 week semester. Enrollment is capped at 15 students. A variation of this course is also taught on another of Miami University’s regional campuses in Hamilton, Ohio. Although the course name is no longer crowd-stopping, the course itself does fulfill a significant need: teaching students new to academic research and unfamiliar with the complexities of a large, online university library system how to tap the resources and services available to them. Indeed, information literacy has become a 21st century survival skill and this is especially true for undergraduates. Learning how to learn and how to conduct research for course assignments makes a difference between academic success and failure for students pursuing academic and professional goals.

Indeed, various assessments in use correlate academic success with information literacy according to Samson (2010), “…this review of learning outcomes literature identified multiple methodologies for making a connection between student academic success and level of information literacy knowledge” (p. 203). Between the years freshman enter college and seniors graduate, students have the opportunity to develop their information literacy skills. “First-year students used significantly fewer total citations and primary sources than did capstone students, while capstones students used books and images more frequently than first-year students” (p. 204). Freshman are more likely to rely on general databases and longer quotes as filler while capstone students are more likely to search subject-specific databases and more readily detect publication bias. First-year and capstone students also vary in their use of library sources and interlibrary loan. While freshman are just beginning to use library resources over websites as a result of the information literacy curriculum, they are less likely than capstone students to use interlibrary loan and build “sizeable bibliographies of quality sources” (p. 208). Developing competence in information literacy requires intention and instruction.

Information Literacy Beginnings

In the past, EDT 251—as the instruction librarians who teach it fondly refer to the course—was taught by a member of the English faculty with a passion for libraries. The instructor for nearly 20 years would typically teach four sections of the course, with a total potential enrollment of 60 students. The final research project was to compile a bibliography during a two hour exam. Through in-class exercises, students learned to locate books, journals, and various reference sources. Activities included searching the catalog, consulting the Library of Congress Subject Heading volumes, retrieving materials from the collection, citing sources, and learning about various information sources provided by an academic library.
Thus students were exposed to print and electronic collections available for coursework. Upon this professor’s retirement in 2008, the information literacy course fell into the hands of two MLS librarians who bubbled over with a new vision and were eager to experiment with new approaches. It was time to overhaul EDT 251.

Redesigning an Information Literacy Course

The Campus Community

Miami University Middletown is a regional university campus with an enrollment of 2,700 students, originally established in 1966. It is an open access, commuter campus that offers associate and bachelor degrees along with certificate programs. The student body is diverse as post-secondary opportunity program students (PSEOP) in high school are on campus earning college credit, in addition to traditional 18 to 21 year old students, and non-traditional students who are older and have returned to higher education. Indeed, the average age of students at Miami Regionals is 25. The majority work part-time. Many are unfamiliar with online scholarly collections and uncomfortable navigating the university library system and statewide consortium OhioLINK. This deficiency hinders successful completion of coursework and jeopardizes their academic and professional goals, whether they realize it or not.

The Issues

Because the two credit course meets once weekly for two hours and forty minutes, it is important for students to attend. Much content is delivered during each class through some lecture, discussion, and viewing online tutorials and demonstrations of search tools. Students spend even more time engaged in hands-on learning activities. Because understanding the research process and developing these information literacy skills are cumulative, instructors inwardly bemoan students’ absences. Irregular attendance signals trouble in terms of completing assignments as well as the course, successfully. Gaping holes in core concepts begin to open. Those students who show up for class grasp the big picture of academic research, the palette of library sources from which to select, and the tools that simplify the process. Those who don’t, stumble in the effective use of libraries and their research skills remain underdeveloped. Some become discouraged and no longer turn in assignments or cease attending all together. Failure to attend, for sundry reasons, is never good. Typically, half the class falls away and among those who remain, two or three will earn Ds or Fs for failure to complete assignments.

Many returning, older students are introduced to e-books, research databases, and Web 2.0 tools that were never part of their previous academic experience and training. RSS feeds, mind mapping tools, project calculators, online presentation options, and source citation sites are absent from their research toolkits. Then, too, traditional college-aged students encounter research turbulence as they cling to high school research habits, never realizing the plethora of subject-specific reference works, advanced features buried in research databases, and specialized digital media collections academics and professionals rely upon. The situation is worsening in today’s economic climate where administrators are reducing school and public librarian positions in budget cutting efforts. Regrettably, this results in some students’ minimal exposure to information literacy instruction when they enter higher education.

Information specialists realize information, technology, and media literacy skills are necessary for 21st century learning. Faculty expect students to possess these skills and usually professors do not take class time to train students themselves. Linking to the library website is a feeble attempt to fill the gaping hole of research knowledge. Sending students across campus to the library may be well intentioned but is inadequate. Academic librarians work with changing database interfaces and URLs, with publishers in free-fall who grapple with print and electronic formats and product options in viewing, downloading, and streaming, and with emerging technologies like smartphones and QR codes that are altering the information universe. Instruction librarians, in collaboration with faculty, therefore, are able and committed to empowering students by teaching information literacy, which is neither intuitive nor simple. Students who stay the EDT 251 course, commonly conclude that this takes time, this is new, this is more complex, and everyone needs this.
The Overhaul Rationale

Redesigning a traditional, face to face information literacy course into a hybrid and eventually online course is a worthy pursuit. The current course is an elective, but one, librarians agree, needed by many undergraduates. Consequently the best solution is to make it readily available. The popularity of online courses rests on their convenience for students with multiple commitments as students and those with family obligations and job responsibilities. Coming to campus at set times does not work well for all. Moreover, online scholarly research is more doable than ever before, with expanding library resources and services and the free tools available on the Internet. More students potentially benefit from enrolling in credit information literacy courses as they are able to complete the online instruction components of the course when they have discretionary time, which might be late at night or on the weekend. By mastering these skills, students are in a better position to advance in their academic coursework and experience success. They learn where to start searching for the information they need. These skills are transferable from course to course and can be applied in a work setting. Indeed, employers seek candidates who are information literate. Second, offering the course in a hybrid or online format strengthens the university library’s mission to reach students and develop their information literacy skills. The more students who are able to enroll, the better. Separating instruction from a given time and place may make it more attractive to students. Finally, the university benefits as institutions with library instruction programs result in better student retention and greater academic achievement on the student’s part.

Literature Review

Prior to making modifications to the EDT 251 course, we conducted a literature review to locate alternative models for delivering the course and structuring the activities and assignments. This grew out of a regular process we used each summer to identify new approaches to course content and delivery, but now took on a focus toward increased delivery of materials and assignments through the LMS and perhaps taking the entire course online. Our literature search had two main foci: (1) reviewing the content arrangement of EDT 251 and considering the inclusion of new course content, and (2) searching for other examples of online information literacy courses and the process by which they were transformed from face-to-face courses. Below we share three resources that were extremely helpful to us in our work with the course.

Hrycaj (2006) presents a study of information literacy course syllabi that presents a list of the most common topics covered in the courses and how they correlate to the ACRL Information Literacy Competency Standards for Higher Education. This article allowed us to consider additional content areas chosen by other instructors and to consider ways to strengthen our exploration of the five standards. It has an excellent table of topic areas ranked by their inclusion among the 100 examples of syllabi gathered by Hrycaj. The eight most common, found within 74% to 94% of courses, were:

- Periodical databases
- Web searching
- Online catalog
- Web site evaluation
- Writing citations
- Monograph evaluation
- Research strategy
- Periodical evaluation
In addition, it groups the topics into the ACRL standards that each represents; noting that number four is the least represented among the topics. We have tried to accomplish that goal with our research projects. Of the 28 topics listed, EDT 251 consistently includes all but five of the topics; some of which, like periodical evaluation, are covered in part but not at length. A separate topic, popular vs. scholarly sources, is covered in detail in the course.

A great collection of articles on various aspects of offering credit information literacy courses may be found in the book *Best Practices for Credit-Bearing Information Literacy Courses* (Hollister, 2010). The book does have four chapters specifically aimed at online information literacy courses: Chapter 2: “Creating the Credit IL Course in a University Setting”; Chapter 7: “Developing an Online Credit IL Course for a Freshman Writing Program in a University Setting”; Chapter 11: “Creating an Online, Discipline-Specific Credit IL Course for Graduate Students”; and Chapter 19: “Using Constructivism to Engage Students in an Online Credit IL Course.” But the chapters on face-to-face courses also provided us with great strategies and approaches to consider with the workings of our course.

Articles that describe online information literacy courses are many, but one in particular stood out for motivating us to make the move to an online credit course not just for the rationale stated above, but also as an improvement on the one-shot instruction session. Mery, et al. (2012) discuss their findings of pre- and post-test scores of students who participated in one-shot information literacy sessions and those who took part in an online course. A total of 660 students were surveyed, and they were established in four groups: (1) a control group that received no library instruction, (2) a group that received instruction from an English faculty member on the research process, (3) a group that received a single library instruction session from a librarian, and (4) students who took part in a one-credit information literacy course online. The findings were that students in the online course showed a significant increase in skills between their pre- and post-tests when compared to those who had received other instruction or no instruction at all. The authors’ methodology encouraged us to continue our own assessment of students as described below in *Next Steps* and also made us feel confident in moving ahead with an online version of our course.

**Process of Change**

Taking a traditional face-to-face information literacy course and converting it to an online one raised some interesting questions about course content, delivery and instructor/student interaction. As previously stated, our student population is a mix of traditional and non-traditional students who have varying degrees of technology skills. Jumping directly from a face-to-face to an online course would create a severe disadvantage for students with limited technological skills. To ease the course format transition for students, as well as for the teaching staff, we decided that the best approach would be to create first a hybrid course and then build an online course. This decision would allow us more time to work on adapting course content and delivery methods, as there would still be some face-to-face content mixed with our online elements.

Once this structural decision was made, the instruction librarians faced a new challenge: How do we adapt the content we currently have? Choices must be made to keep what is still relevant, to remove what would work less effectively, and to add new content that is needed to make the course work as a hybrid. Above all, the librarians want to ensure that the change in content delivery and presentation in the hybrid course still meets the previously agreed upon information literacy learning outcomes of EDT 251. Since 2008, the course has used the ACRL *Information Literacy Competency Standards for Higher Education* as the guiding principles for its structure (Association for College and Research Libraries 2000). This has meant that we generally organize the course to cover the main components of the five standards:

1. Determine the extent of information needed.
2. Access the needed information effectively and efficiently.
3. Evaluate information and its sources critically and incorporate selected information into one’s knowledge base.
4. Use information effectively to accomplish a specific purpose.

5. Understand the economic, legal, and social issues surrounding use of information, and access and use information ethically and legally.

A Look at the Old

For the past three years the structure of the face-to-face course has included a blend of in-class lectures, demonstrations, activities, quizzes, and student presentations with outside class readings, watching videos, and work on a multi-part research project including an annotated bibliography and final project. Readings have primarily been drawn from a free, abridged online edition of William Badke’s *Research Strategies: Finding Your Way through the Information Fog* (Badke 2011). The research project assignments may vary based on the particular instructor, but research projects have included some combination of a one minute elevator speech, a five minute PowerPoint presentation, a class speech using a glog or online poster, a research reflection paper, and a public service announcement (PSA). The diversity in coursework is helpful when attempting to cover the large variety of topics that make up EDT 251. Despite our course title of *Effective Use of Libraries*, students are not limited to learning just how to find items on the library shelves. The evolution of the internet has created a need for so much more. Beyond “How do I find a book?”, these topics are covered: narrowing a topic and formulating a research question, citing sources correctly in given citation styles, using citation management tools, avoiding plagiarism, following copyright guidelines, using e-books and e-reference collections, searching catalogs, using digital media, searching research databases, keyword versus subject searching techniques, search engines, website evaluation, locating government documents, finding statistics, and using Web 2.0 tools.

A typical class meeting which may run from two and a half to four hours, depending on the campus, could start with a review and class discussion of the readings and videos that students completed as homework. A short quiz might be given as part of this review. Next, the instructor would give a brief overview of that day’s topics. Then a lecture with PowerPoint slides or other visual aids could be presented, lasting from one to two hours. Whenever possible, the lecture would be broken up with class discussion and hands-on student work, whether as individuals or in small groups. Finally, more in-classwork could be required and graded as an in-class practicum. Typically instructors allow time for questions and working on upcoming research assignments. Most class meetings follow this structure of active, student-centered learning. The pattern changes on student presentation days or when students need additional clarification or practice time completing assignments.

Access to all course materials for students in EDT 251 was originally through Blackboard, the course management system. Each class meeting was listed within Blackboard from weeks 1 to 10. Each module contained information about the topic to be covered; required readings and videos; links to research databases and websites that would be discussed and accessed that day; PDFs of any handouts for the day, which would also be provided in print during class; and finally a link to the online quiz, if applicable. All course requirements would be posted on the assignments tab of the course page. Any announcements related to class meeting changes and assignment reminders were posted on the announcements tab in Blackboard and then e-mailed to students. Since the majority of the course content was already available online, switching to a hybrid course should be an easy undertaking, right?

A Glimpse at the New

For the change to a hybrid course, it was decided that course content would still be delivered through our LMS, however, right as we began our transition a small issue arose. The library’s decision to offer a hybrid information literacy course coincided with the University’s decision to change learning management systems. Although faculty had been using Blackboard for years, they were now expected to create content in an open source LMS called Sakai. Both instructor and students would now be faced with navigating a new software and layout of course pages, offering different posting options and tools. There was concern among instruction librarians that students, already nervous about using unknown technology and library resources, would now feel uncomfortable and be dissuaded from enrolling in the course. Thankfully, similar names for tabs, such as *Announcements* and *Assignments*, along with the late start of the
course worked in our favor, because students seemed to have adjusted to the new LMS by the time EDT 251 launched in Fall 2011.

Despite the transition from a face-to-face course to a hybrid version, instructors were able to keep the majority of existing elements in place. The research process issues and skills covered would remain the same. We would utilize many of the same readings and videos previously in use. Relevant links for databases, websites, and information on assignments would still be posted online on the course page which is now called Niihka, the local name for the LMS Sakai.

As we look at the various course elements, librarians recognize there are further changes to be made. Students were still responsible for completing course readings and videos before class, but now they were required to post on a hot topic discussion. A forum was set up on the course page for students to post summaries of the hot topic articles or videos along with their thoughts on that issue. The hot topic assignment was added to enhance class discussion online on a related topic to the day’s lecture, such as censorship or intellectual property, which would normally have been covered in class discussions. Holding the discussion online comes with advantages: (1) it takes less class time, and (2) it allows students who may feel somewhat uncomfortable talking in class to think and then write online.

The goal of decreasing the amount of discussion time was part of the overall decision to reduce the amount of classroom time for students. Anyone who has to sit in front of a computer for nearly three hours, listening with some doing, starts to lose energy and interest. In addition, non-traditional students often have work obligations and family responsibilities that hinder them from attending for the full class session. Sometimes they need to leave class early or miss class all together. Reducing the weekly time spent in class to two hours enables students to enjoy a more flexible schedule, work online, and work from home.

Considering this proposed time adjustment, instructors decided that in-class time would focus on lecture and questions and answers. Students would still begin class by taking quizzes; however, students could complete them remotely since they were posted in Niihka for a limited time. Students are still encouraged to work hands-on during the lecture and in-class practicums are still used during some sessions, however, we are doing fewer of them as more is done outside of class. Major assignments have also mostly remained the same with the annotated bibliography, presentation, and research reflection paper still assigned. A new component, however, was introduced: a working bibliography to keep students on track with citation work which is part of the final annotated bibliography. By practicing citations early in the course, instructors hope students will develop a facility and confidence in following citation formats. It is hoped less time need be spent repeating citation style rules in class. The biggest change from traditional to hybrid format, is that more class time is spent on student questions and answers as students need to understand context and faculty expectations. Talking things through seems to help relieve stress and confusion.

Ultimately the instruction librarians were able to keep the hybrid course content close to the original face-to-face course. Adapting the course—overlooking the unexpected hiccups with learning new LMS software—went very smoothly. Because of this smooth transition we are committed to continue offering the hybrid course version while forging ahead with work on creating a solely online information literacy course in the future.

**Next Steps**

Now that the transition of EDT 251 to a hybrid course has happened, we are already planning for additional changes. Some barriers that we experienced along our transition have made this a longer process than we originally expected. The loss of two e-learning development and support positions on our campus in 2011—one for nearly the whole year—slowed our move toward a fully online class. Just as important was the impending retirement of an administrator in the EDT department at our main campus, which put our request to teach the course in an online or hybrid format on the back burner.
Assessment of the hybrid course will be an important focus for us as we continue. We have a long history of assessing our courses with the standard university student course evaluations. We have also used the TRAILS information literacy assessment tool to pre- and post-test students’ information literacy skills in each class. Analysis of both of these evaluation measures, along with student performance on assignments, will help us determine the impact of the changes we have made and those we intend for the future.

With these issues mostly behind us now, we are ready to move ahead with the conversion to an online course while we continue to teach the hybrid version. This step will be much easier now that we have included so much more material within the LMS for the hybrid course. The completion of key assignments and practicums outside of class has assisted as well. We intend to seek a name change for the course to make it more descriptive of the skills we teach. But whatever the class is called, we hope to continue providing a useful introduction to information literacy competencies for our students.
References


Outreach to International Campuses: Removing Barriers and Building Relationships

Susan Mee
Rochester Institute of Technology

The Rochester Institute of Technology (RIT), located in western New York, strives to deliver the same quality library services to its students and faculty located across the globe as those living in the Rochester area. In addition to an array of distance courses and online programs, RIT also has international campuses located in Kosovo, Croatia and Dubai. Students at these campuses have access to the wealth of resources maintained by the RIT Library but are often unfamiliar with what is available and how to use those resources. Teaching and supporting students in the use of the available resources is a challenge considering distances and time zones, but also overcoming differences in culture can be an additional contributing factor impeding usage. Utilizing a blend of technology tools to provide real-time instruction; annual in-person librarian visits to the campuses; virtual library office hours; web-based tutorials; subject and course level library guides; multiple forms of communication; and library integration within courseware; all work together to reduce barriers and strengthen relationships, better serving RIT’s international campus populations for students and faculty alike.

Background

Outreach and liaison activity has traditionally been one of the essential functions performed by libraries but, like many other services, has been effected by significant change in recent years. Technology has been a key player in affecting this change and now more readily allows the library to be accessible virtually anywhere at any time. Academic libraries have embraced the changes new technologies have brought and welcomed the opportunities although they, like all libraries, continue to be challenged by the increasing cost of providing electronic access to resources.

Along with opening the virtual doors to the library and providing access to the library’s resources from any place, any time, comes both new opportunities and new challenges. At the Rochester Institute of Technology, distance learning courses were first introduced in 1979 with a total offering of two courses and 56 students. Fifteen years later in 1994, distance offerings had expanded to 129 courses with enrollment increasing to over 3,200 students. The academic year 2010-11 included 657 online courses with a total of 9,815 student enrollments.

In addition to the range of distance/online course offerings, RIT also has four international campus locations. The American College of Management and Technology (ACMT) was founded in 1997 in Dubrovnik, Croatia and offers undergraduate degrees in Information Technology and Service Management. The American University in Kosovo (AUK) was founded in 2003 with undergraduate programs in Information Technology, Media and Graphic Communications, Public Policy, Economics and Management. A graduate program in Professional Studies is also offered. The RIT Dubai campus launched in 2008 with graduate programs in Engineering and Business and in 2010 expanded to undergraduate programs in those same areas. In September of 2011, a second campus in Croatia was opened. This campus, located in the capital of Zagreb, currently offers undergraduate programs in International Business and Service Management and a graduate program in Service Leadership and Innovation.

Students enrolled in the online course offerings have access to the full range of the library resources. The faculty, staff and students at the international campuses also have access to the RIT library’s resources. Each international campus has its own physical library but those libraries are small,
typically consisting of a single room. The international campuses, both faculty and students, rely on the library resources from the main campus. The primary issue, however, is the lack of an on-site librarian to provide instruction and research assistance in navigating all that is available. The challenge then, becomes one of outreach across vast distances to provide reference and instruction in a timely manner. Encompassed in that challenge are additional issues, such as cultural differences and expectations; language variables; and the need to slowly, over time, build the trust and reliability that develops into a faculty/librarian or student/librarian relationship.

**Challenges**

There is a need to provide bibliographic instruction to the students at the international campuses so that they are both aware of the library resources available to them and also best informed on how to efficiently use the information and research tools. Technology provides a variety of methods of delivering live instruction, which is the optimal method, but the differences in time zones present challenges we cannot easily overcome. Often, this requires the librarian altering his/her work schedule and providing the session at very early hours or the class meeting at a time outside of their normal class meeting time (i.e., later in the day or evening). Pre-recorded sessions are an option but do not provide the same interactive engagement for spontaneous questions and answers and the ability to acknowledge and identify issues on the spot is a missed opportunity.

All classes at RIT’s international campuses are taught in English; however, English is not the native language of the students and, in some cases, of the faculty. The language differences, therefore, can also add an additional challenge to the traditional reference interview. Not only is the librarian seeking to identify the true question, but sometimes must also work through the language differences to identify the actual need. The language issue can be further illustrated when technology issues come into play when trying to outline the appropriate steps to access resources. Even terms such as “download”, “access” and “online” can have varying meanings across languages when trying to troubleshoot why someone is not able to access an e-book from your library.

Differences in time zones are also a factor in timely response times. Homework assignments and papers are due with six to nine hour time differences, and depending on the location and time of year, email exchanges can sometimes expand over the course of multiple days. Add the complexity of a language misunderstanding in the initial question and questions can sometimes take several days to be completely resolved.

Further challenges lie within the areas of collection development. All libraries are faced with stretching budget dollars to meet needs in the best ways possible but an added challenge here now includes locating electronic resources to meet regional needs as well. Working with faculty at the international campuses has met with success in that they are developing assignments requiring library research only to find we may not always have the necessary resources available or do not have them in electronic format. In some cases, the topics being researched are enough different that locating sources to purchase in an electronic format is not always a possibility. Recognizing that not everything is available electronically, we also rely on the services of interlibrary loan.

**Cultural Differences**

Recognizing the difference in cultures is an initial step in bridging the distance between our campuses. Faculty at the international campuses are a mix of regional faculty and faculty from our home campus in Rochester working abroad for varying periods of time, anywhere from a portion of a quarter term, full quarter or a year or longer. Faculty familiarity with library resources, therefore, also varies as well as their expectations of support.

Our campuses in Croatia and Kosovo are former Communist states and the former education systems differed vastly from the American education system. The Balkan Wars caused much disruption to the education system in South Eastern Europe. Many schools were destroyed, families were displaced, and
many young people left the university to join the military or find work to help support their families (Balkans, 2005, War Disruption section).

Even in consideration of the hardships and effects of war, the pedagogy of teaching in South Eastern Europe compared to the American education system is significantly different. The Communist model of teaching “tended to focus on the learning of facts, raising concerns about students becoming overloaded and lacking more active problem-solving skills” (Balkans, 2005, Characteristic Weaknesses section, para. 6). Students who have experienced this prior teaching method have challenges feeling comfortable asking questions and seeking additional information. Over time and through continued assurance that faculty and librarians are available to answer questions and provide assistance, many of these students are now seeking help when needed. The library’s message “You’re not bothering me. It’s okay to ask for help!” is often needed with American students, and must be emphasized even more among the international campus students.

Issues involving plagiarism are also a concern. In this article, plagiarism is identified as a cultural issue due to the differences in background and how the entire issue is viewed from differing perspectives. Some cultures view copying as a form of respect and flattery. In the US, however, that does not follow our academic standard and does not meet the academic guidelines of most universities. Thus, the understanding of the importance of plagiarism, how to avoid it, and how to properly cite one’s sources becomes a critical component of introductory level research.

Reaching Out and Making Connections

As have many other libraries, the RIT Library has worked continuously to make the library’s resources as readily available to the remote student as to the on-campus student. New technologies offered improvements and easier access with each passing year. The evolution of technologies and enhancements involved in the delivery of RIT Library resources and services is detailed in the Virtual Delivery of Electronic Resources and Services to Off-Campus Users: A Multifaceted Approach (Bower and Mee, 2010). Tutorials were created detailing how to use both the resources and the technologies employed. A critical focus in the developing years, and one which continues, is that of access.

In addition to creating the access was the continued and ever increasing need to establish, grow and maintain the human link to the incredible wealth of information resources available. Making the resources available is monumental but providing the staffing support in an easily accessible and convenient manner turns out to be equally critical. The person interaction becomes particularly essential when bridging cultural differences and also different prior educational experiences. Many of RIT’s students at the international campuses have varied prior educational experiences with little previous experience navigating electronic library systems. Access to a librarian for navigation and research assistance becomes the value added component to their research success.

On-Site Visits

In recent years, technologies such as Adobe Connect (http://www.adobe.com/products/adobeconnect.html) and the open source Collaboration Grids (http://rc.rit.edu/docs/RIT_Global_Collaboration_Grid.pdf) have enabled live bibliographic instruction sessions to take place between the RIT campus and the international campuses. These sessions are beneficial in both providing for live instruction and the opportunity for student questions. The sessions also serve to build a baseline relationship, even from a significant distance.

From time to time, the topic of on-site visits would be mentioned but not brought to fruition. The idea surfaced again in the spring of 2010, and by fall, schedules were in place to visit the American University in Kosovo and the American College of Management and Technology in Croatia. The first visit proved to be as beneficial for the librarian as for the students and faculty at the international campuses.

The on-site visits allowed for in-person meetings with administrators, department heads and faculty, both individually and in group. Library workshops and presentations of specific interest to faculty...
were scheduled at the lunch hours and other select times. Mandatory library introductory sessions were required of all first year students; course specific bibliographic sessions were presented and geared toward given instructor research projects and assignments. Training sessions for the student library employees were also provided. The days were full and the learning invaluable; definitely for the librarian and hopefully for the students and faculty, too!

Perspectives gained from the first visit were that there was not a strong feeling of connection between the international campuses and the RIT Library. Many students commented that they felt the “RIT Library website was too big” and “too confusing”. The mission immediately became one of making the RIT Library website comfortable to this population of users and making the international campus students feel like the RIT Library was also their Library. This was a message that had been repeated in the past via emails and online bibliographic sessions but it was obvious the message needed strengthening. Meeting with students in classes and also talking with faculty, listening to their comments and feedback, helped to understand the importance of creating a presence for each of RIT’s international campuses on the RIT Library website. Although the international campuses had initially been borne from one of RIT’s on campus colleges, it did not actually mean anything to the students and many of the faculty at the respective international campuses. Each on-campus college already had their own presence on the library website with a Meet Your Librarian page. Creating individual pages and presences for ACMT, AUK and RIT Dubai became a top initiative upon completion of the first on-site visit. Understanding the importance and value of the individual pages and creating that presence for the international campuses was not fully appreciated until the on-site visits took place and the implementation was a low-cost, easy resolution which resulted in a positive benefit for all.

Figure 1. Meet the Librarian pages: Each international college has its own page (http://library.rit.edu/meet-your-librarian).
The Meet the Librarian pages (see Figure 1) residing on the library website now exist for each of RIT’s colleges for both the on-campus colleges and the international campuses. Each page provides contact information for the librarian representing that particular college. Many of the librarians provide various methods of contact giving the patron many options including instant message chat, Email, Skype, telephone, and office location. The Meet the Librarian pages also provide links to subject specific LibGuides, a feed of new library purchases, and other library relevant information.

Another step toward creating a presence for the international campuses on the library website was creating a cluster of guides for each international campus. This was done with the use of appropriate subject and tag assignments. Faculty and students, of course, have access to the full complement of LibGuides on the site, but like the idea of seeing specific resources for their own campuses clearly identified (see Figure 2).

Figure 2: RIT Library LibGuides with display of ACMT guides listed.

A further step, and a much larger project, involved the catalog integration of holdings at both the RIT Dubai and ACMT-Zagreb campuses. The RIT Dubai catalog integration project took place first, over the past eighteen months, with the addition of approximately 3,000 titles. With the opening of the ACMT Zagreb campus in September 2011, a small collection of holdings were also added to the RIT catalog. In both instances, the catalog designates the individual international campus as the location of the title. Inclusion of the local holdings in the RIT catalog is beneficial in multiple ways: the international campus student becomes a more comfortable and frequent user of the catalog and learns one system rather than two separate catalog systems. Additionally, by using the RIT Library catalog system, the user will also likely discover and access other resources beyond what is available in their own local campus library. They will see in the combined results list, many additional sources available in electronic format as well as print
sources located at the RIT campus. For the RIT student, it is also an awareness tool to further inform about the existence of the international campuses.

**Figure 3**: RIT Library Catalog depicting entries for Oxford English Dictionary with variant locations (left column). Records with only a floor location are materials housed in the main RIT campus library.

**Tools and Technology Involved**

It takes a variety of tools and different technologies to deploy the library resources across the distances. And, just the same as teaching in the physical classroom, it is important to present the information in a variety of methodologies using a range of teaching tools to reach the different styles of learners. This is even more important when the information being delivered is often unfamiliar and the language is not the native language. Professor Julia Norrgard, History Professor and Department Head at the American University in Kosovo, reflected that “Most school libraries here are woefully inadequate in books, let alone sophisticated computer systems. The students are pretty good with the Internet, Google and all, but a library system like Wally (RIT’s Library system) is a mystery to them; and a mystery they need to unravel”. Presenting the information via live instruction sessions with self-paced tutorial resources available and people to contact for assistance prove to be essential mechanisms for helping to build confidence and success in learning how to effectively navigate and research the library’s scholarly information sources.

**Live Instruction via the RIT Global Collaboration Grids**

Utilizing the Global Collaboration Grids allows bibliographic instruction sessions to be live, interactive and high quality multi-way video and audio. It is a free, open source software maintained by RIT’s Office of Research Computing with grids located at various points across the RIT campus and also at each of the international campus locations. The collaboration grids provide high quality audio access to one another which is a key component in communicating how to effectively locate resources but the quality video also is critical when illustrating through multiple mouse clicks how to get to the needed information.
The collaboration grids have also been used to facilitate multi-class sessions between first year students at the RIT campus in Rochester, ACMT-Dubrovnik and students at our Kosovo campus. Students share their experiences with one another regarding what it is like being a first year college student at their respective institutions and compare notes about college life. The ultimate goal is to work toward a collaborative research project with teams consisting of students from each of the campuses. Project presentations would be presented to all three classes simultaneously via the collaboration grids.

With a customized set-up in the librarian’s office, the collaboration grids provide easy and convenient access for outreach to the international campus locations. Instruction sessions via the collaboration grids can easily take place directly from the librarian’s office to the designated classroom location in Europe (see Figure 4). Flexibility is necessary with regard to meeting the constraints of differing time zones. In some cases, it means the librarian’s day starts very early and in other cases, the classes might meet outside their normal class time in order to better accommodate the library session. The collaboration grids are also used for individual and small group sessions with both students and faculty. Virtual library “office hours” and reference hours were piloted last year and continue this year.

Figure 4: Library instruction via the Global Collaboration Grids with a class at the American University in Kosovo. Collaboration Grids: http://rc.rit.edu/globalcollaborationgrid.html.
Through various renditions of Learning Management Systems (LMS), the library has worked to have an increasing presence in distance courses. The initial presence was a static page of information located in all courses. When RIT changed from Blackboard to Desire2Learn in 2005, the library was able to create a stand-alone linking application which resides outside the courseware and allows the library to have an embedded presence within each course. The myLibrary linking application is, by default, located on the course navigation bar and contains course specific library information. The myLibrary application contains the appropriate librarian contact information based on the college or program area, individual views for both faculty and students with specific links for each, tabs provided for course reserves, locating articles, LibGuides, and relevant websites; all based on the course subject matter. The library staff is able to maintain and update webpages as usual without regard to the linkserver. Further information on the myLibrary link server application is available at: [http://library.rit.edu/desire2learn/](http://library.rit.edu/desire2learn/)

*Figure 5.* Flyer promoting virtual library office/reference hours via the Collaboration Grids at the American College of Management and Technology.
In addition to using the collaboration grids, Adobe Connect is also utilized for delivering course instruction. Adobe Connect is a webinar product which can be used for both live sessions and sessions recorded in advance and provided as a link for asynchronous viewing. In addition to the LIV@RIT interactive tutorials, several other tutorials reside on the library website and within LibGuides providing instruction about the catalog, databases and other library resources. Adobe Captivate, Camtasia, and Jing all are designed to allow screen recordings to bring demonstration types of instruction to the user and require a minimal learning curve to create screencasts.

LIV@RIT (http://library.rit.edu/liv/) is a series of eight interactive tutorials designed to increase and enhance information literacy skills. The tutorials were created originally with first year students in mind and were designed based upon a PILOT from Sacramento City College Library and TILT, from the Digital Information Literacy Office for the University of Texas System Digital Library. Module topics include: Identifying Sources, Choosing Topics, Searching the Library Catalog, Finding Articles, Using the Web, Evaluating Information Resources, Plagiarism, and Copyright and Citing Sources (see Figure 7). It was soon discovered that the tutorials were useful to more than first year students. They were of particular benefit to students at the international campuses, international students located at the RIT campus, transfer students, and even graduate students. RIT’s rendition incorporated elements of gaming, including the earning of achievements or badges. Each module also has a built in quiz for assessment and the tutorials have now been integrated into the campus learning management system for faculty ease of use with the LMS grade book tool.
With each academic year, deeper in-roads are made in the outreach efforts to both faculty and students. Relationships are built and strengthened slowly, based on a foundation of previous experience. When one student reaches out and seeks help from the library, finds success, that student not only tends to return but refers his fellow students as well. The same holds true with faculty. Initial outreach efforts often had little response but time has brought change in that venue, too. The on-site visits that brought about the face-to-face opportunities enhanced both faculty and student relationships with the library. The large, intimidating entity that the library may have initially represented has now become a little less overwhelming and our international campus members have found their virtual place within the RIT Library with many real people willing to help and provide support.

Some aspects of outreach and determining success are qualitative and cannot be definitively measured but rather rely on a variety of other metrics including feedback from faculty regarding improved quality of research papers and projects. The measurables one can quantify include:

- Annually increasing numbers of emails and instant messages from both students and faculty seeking assistance. This is significant, particularly in cultures where it is often not encouraged or acceptable to seek help and ask questions. Even so, librarian communications still continually remind and encourage students to ask for help; it is a closing message of nearly every instruction session, email and instant message.

- Increasing numbers of Skype conversations and Skype contact requests.

- Increasing number of hits on the library website and, in particular, on the database portal page, from IP addresses in Kosovo and Croatia.

- Hits on LibGuides created specifically for courses at ACMT and AUK.

- Increasing numbers of Information Document Service/Interlibrary Loan requests from ACMT and AUK.

- Familiar student and faculty relationships during on-site visits.
Enrollment has increased by 6% at AUK for Fall 2011 over Fall 2010. The combined total enrollment for the ACMT campuses has remained stable from 2010 to 2011, but the Zagreb campus location launched in Fall 2011 where growth is anticipated. Zagreb is the capital of Croatia and the campus anticipates attracting students from the city area and beyond (see Figure 8). Croatia’s accession into the European Union in 2013 could also serve as a drawing card for increasing enrollment numbers.

Using Google Analytics, the RIT Library is able to determine number of website hits based on IP location. Again, comparing the Fall Quarters of 2010 and 2011, an increase in site visits has occurred and is a growth both the library and the individual campuses wish to see continue. The first librarian on-site visit took place during the early weeks of the winter quarter in December of 2010. The comparison of the Fall Quarter of 2010 and the Fall Quarter of 2011 statistics is comparing data prior to any on-site visits with data after two on-site visits as the second visit took place in October of 2011. Combining the hits to the library’s database portal page (http://library.rit.edu/databases/) from both ACMT Croatia campuses for the 2011 Fall Quarter provides a total number of 1,508. Although the Dubrovnik campus experienced a moderate decrease in enrollment with the opening of the Zagreb campus, the total combined number of students remained stable, and the hits to the library’s database portal increased 33.7% in Fall 2011 over Fall 2010. An even larger increase was observed at the AUK campus. AUK campus enrollment has increased by 34 students in Fall 2011 over Fall 2010. The increase in traffic to the database portal, however, has increased by 97.2% (see Figure 9).

<table>
<thead>
<tr>
<th>Campus</th>
<th>Fall 2010 Library Website (9/1/10 - 11/20/10)</th>
<th>Fall 2010 Database Portal Page (9/1/10 - 11/20/10)</th>
<th>Fall 2011 Database Portal Page (9/1/11 - 11/20/11)</th>
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</thead>
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<tr>
<td>ACMT Dubrovnik</td>
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<td>1,090</td>
</tr>
<tr>
<td>ACMT Zagreb</td>
<td>292</td>
<td>N/A</td>
<td>418</td>
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<tr>
<td>AUK</td>
<td>4,508</td>
<td>2,305</td>
<td>4,546</td>
</tr>
</tbody>
</table>

Figure 9. Hits on library website pages from international campuses.

A couple of different factors may attribute to the significant increase in database use at AUK in particular. The first on-site visit consisted of several large auditorium sessions for students. The sessions were well attended but it was decided for the second visit to offer only one large session and to have the librarian meet with more individual subject classes. The smaller classroom environment was more personal, more inviting of questions, and provided more opportunity for discussion and also after class interaction. All of the students at AUK are issued a laptop upon admission and, depending on the topic and the particular assignment, some of the sessions were also offered as hands-on sessions. In some cases, student volunteers were sought to be the “driver” at the presentation station while the librarian provided the verbal instruction. These strategies were efforts in making the library instruction sessions more interactive and helping to make the students more involved in the learning process. It was also an effective strategy in engaging students in both the activity and in becoming more comfortable with sharing their findings and asking questions. The hands-on class sessions also allowed for trouble-shooting those instances students had identified having previous problems (i.e., linking to the full text of an article or requesting an item via interlibrary loan).
Another measurable metric are the number of Information Delivery Requests (IDS) received from RIT’s international campuses. Requests from the ACMT and AUK campuses for the 2008-2009 academic year through the Fall Quarter of 2011 were broken out by patron type (see Figure 10). Data shows that the requests from ACMT have been consistent, but are primarily from faculty. In some cases, the faculty have made the requests on behalf of a student. It is hoped, moving forward, that more of the students will be making their own requests and the data will reflect that more accurately. Academic year 2010-2011 showed a significant increase in IDS requests from both faculty and students. Faculty requests increased from 21 to 46 and student requests grew from zero to 24. These numbers reflect the first on-site visit where faculty workshops and individual faculty meetings were held along with many student classroom sessions.

IDS requests originating from AUK have traditionally been very low. Requests for the years 2008 and 2009 were both zero and the academic year 2010-2011 shows eight faculty requests. Again, with the change in session structure from a large auditorium format to several classroom sessions, Fall Quarter 2011 indicated a marked increase in requests. At the end of Fall Quarter 2011, six faculty and 25 student requests from AUK had been received.

<table>
<thead>
<tr>
<th>Campus</th>
<th>2008/09</th>
<th>2009/10</th>
<th>2010/11</th>
<th>Fall 2011 (9/1/11 - 11/20/11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACMT Dubrovnik</td>
<td>37</td>
<td>21</td>
<td>70</td>
<td>21</td>
</tr>
<tr>
<td>Requestor Type:</td>
<td>Fac/Staff: 37 0</td>
<td>Faculty: 21</td>
<td>Faculty: 46 24</td>
<td>Faculty: 18 3</td>
</tr>
<tr>
<td>ACMT Zagreb</td>
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<td>N/A</td>
<td>N/A</td>
<td>9</td>
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<tr>
<td>Requestor Type:</td>
<td></td>
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<td></td>
<td>Faculty: 8 1</td>
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<td>Requestor Type:</td>
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<td></td>
<td>Faculty: 6 25</td>
</tr>
</tbody>
</table>

*Figure 10. Information Delivery Requests.*

The LibGuides product by SpringShare (http://www.springshare.com/libguides/) has been a very helpful tool to many librarians and provides an easy platform for creating guides and also tracking usage. As mentioned earlier, LibGuides are created specifically for each of the international campuses and categorized as such on the Library’s website. Creating guides at the course level and to assist with specific assignments has been well received. The collection of LibGuides continues to grow, the requests from faculty for specific guides are increasing and the usage statistics also reflects their value by the students.

Continued outreach efforts via the access grids to provide further classroom instruction (e.g., one-on-one meetings, virtual reference, Skype sessions, instant message chats, email communication) all serve to better facilitate the communication between the U.S. and international campuses and to provide access to the RIT Library’s resources and its services. Technology enables opportunities that were previously impossible and future enhancements will only provide further improvements to library outreach efforts. Technology provides access to the resources over distance and regardless of time, and the library’s people services provide the instruction and customer service so that the physical library located on the other side of the world truly is the global library for the international campus student.
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Create a Sense of Place for the Mobile Learner

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“Sense of place” no longer applies only to the physical library. All students are distance learners to one extent or another, and all distance services must be considered as a single virtual learning commons. Librarians at Bucks County (PA) Community College implement and integrate current teaching, learning, virtual reference, and mobile access technologies at reasonable cost and create online learning spaces that bring students to the library no matter where they are.

Introduction

Until 2007, the Bucks County (PA) Community College Library’s electronic services were largely limited to an email reference option. The Library then embarked on an effort to bring its virtual services to the same level as its face-to-face with the addition of synchronous virtual reference, a redesigned home page for its website, and, most significantly, online information literacy (IL) instruction for distance learners. The Embedded eBrarian Program (EEP) creates collaboration among librarians, faculty, and students in online course spaces. In support of this program a variety of additional services and learning objects were made available using a variety of technologies. It was soon discovered that, as more and more has been made available in the virtual environment, faculty and students in face-to-face and hybrid courses are just as receptive to these offerings. Hemmig and Montet (2010) reported that the “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” (p. 667). Another clue came when the library implemented the instant messaging service Meebo; as reported by Johnstone (2011), “with Meebo we made a curious discovery: some of our Meebo users were within the library building when they made use of the service” (p. 18). It was realized that there was need for both on-demand library services and easy access to library resources for all patrons and that fulfilling these needs would be accomplished through creation of a comprehensive virtual library presence for all of the College’s increasingly mobile students. To this end the librarians have adopted a theoretical model for the virtual library as place, and have begun to employ it to provide a coherent, holistic experience of the library’s virtual presence for its mobile learners.

The Embedded eBrarian Program

Not all librarians use the term ‘information literacy’ in the same way. Some use it simply as a synonym for bibliographic instruction. The librarians at Bucks agree on a more profound understanding of IL, informed by currents in the literature as well as the experience at Bucks. The Final Report of the American Library Association Presidential Report on Information Literacy (1989) dictates that an information-literate person “must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” Ward (2006) adds to that definition: “Personal, interior experiences of information are fundamental to a vital information literacy that can make a difference in our lives and in the world” (p. 397). These words guided the shift at Bucks from a teaching-centered information literacy climate to a more organized and customized learning-centered information and media literacy program. This customized IL experience is intended to empower the intellectually curious student to seek out more than simply some appropriate resources for an assignment, but the best resources they can find. These resources could be scholarly or popular, text or image. Beyond the college years, an information literate person will be prepared to be an informed citizen and leader. “Indeed, such an extended notion of information literacy is essential to the future of democracy, if citizens are to be intelligent shapers of the information society rather than its pawns, and to humanistic culture, if information is to be part of a
meaningful existence rather than a routine of production and consumption” (Shapiro & Hughes, 1996, p. 34).

The EEP at Bucks was created to satisfy the need for an online information literacy experience. As with the existing face-to-face IL program, students in online courses would receive a customized, learning-centered experience based on collaboration with their instructor and assignments from their class. At first, EEP consisted of an eBrarian-monitored discussion thread in the student’s online course space, tutorials created with Captivate, and eBrarian availability through email. Usage statistics confirmed that students used only the elements they thought they needed, but they were using them. Usually these elements were the discussion thread and a basic tutorial. The eBrarians were delighted to discover that instructors teaching online were also using the tutorials for their face-to-face courses. The tutorials are now also linked from the library’s website in a repository so that students and instructors can find them easily anytime and anywhere. The tutorials can also be accessed by all, not just those involved with the course. This repository concept was listed as a best practice by Mestre et al. (2011, p. 249) in their recent survey of IL learning objects.

Later, the eBrarians began including short, simple introductory videos shot at various locations both on and off campus with easy-to-use video cameras. The idea was to briefly explain with humor the eBrarian’s function in the course along with the learning modules. The videos were intended to get the students’ attention and demonstrate the eBrarians’ approachability and enthusiasm. These videos appeal to students with more visual learning styles. Text is included in the video with annotations or in an adjacent box in a research guide to accommodate differently-abled students. After seeing animated videos by Xtranormal, Voki, and Go!Animate used for these same purposes, the eBrarians began to include them, too, for a bit of entertaining whimsy.

A subscription to Springshare LibGuides (http://bucks.libguides.com) inspired the eBrarians to collect these learning objects (tutorials, brief videos, and now-omnipresent functional search widgets) into custom research guides. These research guides evolved into the “Just-for-Me” Virtual Library described by Hemmig and Montet (2010) and became popular with similar online and face-to-face courses. They are now also linked from the library’s website in a research guide repository so that students and instructors can find them efficiently. LibGuides were also created for functions and topics such as copyright compliance, plagiarism, and multimedia resources, and these can be linked or combined in a course research guide.

Multimedia assignments and options are becoming commonplace in the College as an alternate modality of expression for students who may not be as comfortable with the written word. In this 21st-century open-enrollment community college, there are many students who are more comfortable with the manipulation of images and videos than with traditional text-based assignments. The College’s Mashup Contest has capitalized on this phenomenon and demonstrated that properly-cited visuals combined with text in a mashup, Glog, Prezi, or other presentation can be valid assignments. Students use the same search strategies, evaluation techniques, and citation skills when navigating an image-based assignment as when they create a traditional research paper or presentation. MInDSpace, the College’s multimedia center, assists faculty and students on campus when they create and complete these assignments. The MInDSpace LibGuide assists students with these projects and is starting to be incorporated into course research guides.

An Experience of Place

The eBrarians recognized that LibGuides provided “a means...of collocating and augmenting the library content in a way that would provide a virtual experience of the library” (Hemmig and Montet, 2010, p. 666). Moreover, because of the assignment-driven focus of the College’s IL efforts, this virtual experience could be made to appear “as intimate and individualized as a face-to-face reference desk transaction” (Hemmig and Montet, p. 668). The quick popularity of the guides and their individual learning objects beyond the online course spaces for which they were originally intended led to the further realization that this was only the initial stage in the evolution of a virtual experience of the library for all of the College’s students, all of whom are distance learners to some
degree. In this sense the LibGuides were themselves learning objects contributing to a larger virtual experience.

Much has been written about the library as place, rather than as simply a storehouse for research materials—a place that encourages patrons to access materials and searching resources, to seek human assistance, and to work, singly or in groups, to create knowledge. “Library spaces are used as much to inspire ideas and feelings as they are to serve utilitarian functions (Pomerantz and Marchionini, 2007, p. 516). More specifically, libraries have been identified as “third places,” a term coined by Oldenburg (1989) to define gathering places that are neither the home (the first place) nor the workplace (the second place), but are the “great variety of public places that host the regular, voluntary, informal, and happily anticipated gatherings of individuals beyond the realms of home and work” (Oldenburg, p. 16). Third places include coffee shops, stores, bars, hair salons, and many other venues. Book stores have become third places by establishing coffee shops within their walls to encourage patrons to linger. Following this lead, many libraries have determined that part of providing a sense of place that encourages patrons to create knowledge is to also provide the means for patrons to “find relaxation and restoration, which often includes people watching, meeting with friends and finding quiet time.” In order to be a viable third place, the library needs to add “restorative environment” to its collection of resources (Waxman, Clemons, Banning, and McKelfresh, 2007, p. 430). “Essentially, libraries are positioning themselves as third places with network access and resident librarians” (Pomerantz and Marchionini, 2007, p. 525).

With exponential growth of electronic resources and services, and with more and more patrons “visiting” the library from their first, second, and other third places via computer or mobile device, discussion of the library as place has begun to include the virtual library. As Pomerantz and Marchionini (2007) observed, “places are as much about ideas and states of being as they are about physical space,” and “both physical and digital libraries occupy the physical-conceptual continuum with respect to ideas, materials, and people” (p. 506). “The concept of place…is equally important in both physical and digital libraries because a sense of place is dependent on functionality, community, and personal experiences in the place” (p. 528). All of the elements that contribute to a useful physical library, including selection of resources, ease of access, and overall design and organization, should factor into the conception of the library’s electronic presence.

It has been demonstrated that the physical and virtual library are not separate entities in the minds of users. In a recent study analyzing responses to a LibQUAL+ survey at the University of Colorado at Boulder, Gerke and Maness (2010) discovered a strong connection between the success of a specific campus library as a place and the satisfaction of that library’s users with the library system’s electronic resources, leading them to suggest that “a user’s consistency of experience between these [physical and electronic] channels is an important predictor of his or her satisfaction” (p. 25). In other words, the user’s experience of the library, whether solely physical, solely virtual, or a combination, should be a seamless, unified whole. “Basing the digital experience of place on the physical provides the user with a familiar environment and thus creates fewer barriers for use” (Pomerantz and Marchionini, 2007, p. 518). The distance learner needs a third-place experience of the library at all times and in all places, and this need encourages virtual library designers to consider physical library “third place” characteristics—such as the information commons, collocated services and collections, and even the coffee shop—when providing a virtual experience of the library.

This is a relatively new concept in practice. The LibQUAL+ survey defines its “Library as Place” dimension in terms strictly of the physical environment (LibQUAL, 2011). Satisfaction with electronic resources is treated as a simple matter of “information control,” while terms like “inspires study and learning” apply solely to physical spaces. Surely distance learners are not to be denied resources that inspire.

Hemmig (2005), developing a new model for the design of online research guides, points out that previous models, echoing LibQUAL’s treatment of electronic resources, had the user in mind but were inherently focused on the system. By nesting together models of the search process and models of information retrieval developed by Saracevic (1996, 1997), Allen (1996), and Kuhlthau (1991), and
incorporating an existing model for online pathfinders, Hemmig created a new model that analyzes the user on one side and the system on the other, and uses these factors to create an informed sense of the user’s experience of the system. It is this experience that defines the design of the system and the success of the user.

This model can be applied more broadly to the user’s experience of the library as a place, including the virtual library. Figure 1, adapted from Hemmig’s model for the online research guide, places the student’s experience of place at the center. Contributing to this experience are the factors that model the students on one hand (the needs that brings the students to the space, the tasks the students need to perform, the resources needed and the students’ facility with them, and the probable cognitive and affective states of the students), and on the other the factors that model the place (the possible resources, the selection of resources, the means of accessing them, and the overall look and navigation of the place). All factors must be taken into account when answering the central question: what is the students’ experience of this place? In this instance the place is the mobile library.

Taking the Library Mobile

The use of mobile devices has exploded in recent years. Hanson (2011) articulates this well saying, the “vast majority of Americans now own cell phones. Nearly half use them to access the Internet. Sales of smartphones have already or soon will surpass those of traditional PCs” (p. 9). According to the Federal Communications Commission (2011), by the end of 2009 there were over 274 million mobile telephone subscribers and over 55 million mobile internet access subscribers. The 2011 Horizon Report lists mobile technologies in the “one year or less” time-to-adoption horizon and indicates that “mobiles continue to merit close attention as an emerging technology for teaching and learning” (Johnson, Smith, Willis, Levine, and Haywood, 2011, p. 12). The trend is understandably making waves in the library world as well. Consider the popularity of the bi-annual Handheld Librarian Online Conference (http://www.handheldlibrarian.org) that explores mobile technology, applications, usage, and development specific to libraries. Again, Hanson notes that “now is the time [for libraries] to take action and be proactive in providing robust services to mobile users” (2011, p. 9).

Trying to gauge library users’ receptiveness to using mobiles for accessing the library Online Public Access Catalog (OPAC), Washington State University conducted a survey in 2010. While the responses varied depending on the respondent’s current usage of technology, it showed that “respondents who owned a handheld web-enabled device were more willing to search the library catalog using a small screen. A total of 66 (58.4 percent) of respondents who owned a web-enabled mobile handheld device indicated that they would search the library catalog with such a device” (Cummings, Merrill, and Borrelli, 2010, p. 29). In fact, “users of mobile and small-screen devices will continue be a factor in the continued development of library services. It is incumbent upon libraries and information service providers to continue striving to provide quality services to all its users and the mobile segment of the overall user group will only continue to become more important” (Cummings et al., 2010, p. 38).

In late 2009 Bucks librarians began to explore the idea of making library resources and services available on a mobile platform. A couple of avenues were explored including creating mobile friendly versions of library web pages and creating a library mobile device application (app). The librarians learned of a company called Boopsie, Inc. (http://www.boopsie.com) that markets itself to a variety of business models, including libraries, as a mobile app creator and distributor. For an initial setup fee plus an annual subscription, librarians would supply the data, graphics, and overall design for an app, while Boopsie would code it and make it available for every major device on the market. Thus, in early 2010, the library embarked on this endeavor.
Figure 1. Model for the virtual library as place, adapted from Hemmig (2005).
The library first established what would be included in the app and began to set up menus and the general look and feel. Librarians made use of simple icons that would help users navigate through the app. Navigation menus and various areas of the app were created using Boopsie Docs which are essentially templates in Google Docs. This gave the librarians the ability to create and edit the app while seeing those changes nearly instantly by viewing the app. This is true also of ongoing modifications made to the app. Boopsie Docs allows for creation and modification of new items in a test environment as well as modification and additions to the live app.

One of the most appealing features of the Boopsie app product is the “smart prefix” search of the library online catalog. This aspect allows a user to “search for just the first few letters of any of the words in a title and come up with the correct match” (“WorldCat,” 2009). For example, a user can key in the letters “ton mor” and the app will display results for Toni Morrison. To accomplish this, the library needed to establish a way to send machine-readable cataloging (MARC) flat file records to the vendor on a regular basis. Librarians used integrated library system (ILS) functionality for selecting and extracting records and then created scripts to run these commands and place the output file on the server for the vendor to pick up. These scripts are scheduled to run weekly on the library server. Boopsie indexes this file to take advantage of the smart prefix technology for searching. In this way a user will begin to instantly see catalog results based on keystrokes, but when they choose a particular item, the app will check the item availability on the library server. This is done on the fly by screen scraping that information from the library’s live web OPAC.

Bucks Mobile was initially launched in May 2010 and has undergone a number of revisions since. It is available directly on a mobile device via the web address http://bucks.boopsie.com or, for Apple users, by visiting the iTunes App store and searching for “Bucks Mobile.”

Features presently built into the app include the following:

- “Library Catalog” allowing searches within the library OPAC
- “Library Locator” providing information on Buck’s three physical campuses
- “Databases” supplying links to the library’s subscription databases, including mobile versions where available
- “Ask A Librarian” allowing users to contact the library via email or telephone
- “Research Guides” linking to the mobile version of library LibGuides
- “Tutorials” linking to the Bucks Library’s YouTube channel
- Additional links to the library blog feed and various Facebook pages

Bucks Mobile has been well received by the college community. Within the first month of its launch a reference librarian was delighted to have a patron approach the reference desk holding up her smart phone showing an item record. That the app includes more than OPAC searching increases its value to students. Librarians intentionally included those same features initially developed for EEP as a way of creating continuity with the library’s web presence. A patron should be able to accomplish the same tasks whether using the library web site or Bucks Mobile as his or her entry point. While no formal study of usage data has been made, the library does see steady usage across a variety of devices.

The exploration into mobile technologies helped create a feedback loop that has initiated a rethinking of the library web site. Librarians decided to take the idea of using icons and apply them to the library main page for navigation. Library users have so far been receptive to the idea. The next goal is to conduct user focus groups to glean more user feedback. It is hoped that user feedback will inform the librarians as they continue to work not only on the various components of the virtual library, but the overall sense of that virtual space as place.

Conclusion

Equipped with a model for the virtual library as place based on the students’ experience of the place as a whole, Bucks County Community College has begun to bring together electronic resources and services in such a way as to create that experience. Some aspects of this “third place” remain to be
fully explored and integrated, chief among these being the social aspect. Lawson (2004), citing Oldenburg’s (1989) emphasis on the social function of the third place, notes that “developers of virtual places should design communities and web sites that are both usable and that support sociability” (Lawson, p. 127) and asks “What are things you look for in selecting a place to live or “hangout?” Third places, including libraries, need to extend their sense of public “place” and “face” online” (Lawson, p. 129).

The Bucks County Community College Library maintains a Facebook presence as well as a blog. Each semester a schedule is created whereby the task of providing content for these outlets is divided among librarians. While little is yet known of the value of these efforts, the library attempts to not use these outlets merely for library announcements—a digital message board. Rather, these resources are used to facilitate engagement with library patrons in a variety of ways including methods employed in the EEP—use of humor, for example, to show librarians as approachable partners for students. As the librarians move forward with these endeavors, they are aware of the potential for social networking to become a critical future component of the virtual library, providing both synchronous and asynchronous opportunities for distance learners to socialize and work together online, sharing resources and collaboratively creating knowledge. These next steps should make it possible for students to have the experience of fully and literally visiting the library from anywhere.


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Discovery Layers and the Distance Student: Online Search Habits of Students

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Has your institution purchased discovery layer tools? Are you wondering how students are using them and how much return your institution is getting on that investment? Not only are there more resources available to students online than ever before, but there are also more avenues for students to discover those resources. The Royal Roads University Library puts links to Google Scholar, Summon, LibGuides, Captivate tutorials, and more onto its web pages. This paper is an investigation of how students are using those resources and what they think of them. It presents student feedback on these discovery layers combined with empirical evidence from usage statistics. The paper explains how the library will use this evidence to inform both the electronic paths designed to lead students to its resources and the outcomes of its information literacy instructional sessions.

Introduction

In order to compete with the simple interface and intuitive design of search engines such as Google and Google Scholar, many academic libraries are reconfiguring their websites around the concept of the single search box to provide their users with a Google-like search experience. Web-scale discovery services such as Serials Solutions’ Summon, OCLC’s WorldCat Local, and the EBSCO Discovery Service allow libraries to accommodate the search preferences identified by their users and provide them with the option to search most of their library’s collection all at once. But if we build it, will they come?

Academic libraries spend a considerable amount of money purchasing and supporting online databases, electronic collections, and web-scale discovery tools and spend a considerable amount of staff time building and maintaining subject guides (e.g. LibGuides) and online learning objects (e.g. animated tutorials) to provide their users with multiple information access points. Given ever narrowing budgetary constraints, it is important for libraries to evaluate which resources are used and how well they are used to better inform decision making regarding resource allocation. It is within this pretext that the authors explore the various electronic pathways and search options available both at our institution and others, to investigate if there has indeed been a return on investment.

Literature Review

Regardless of all the time and effort libraries put into providing a variety of research tools and resources on their websites, the literature suggests that students still prefer to start their research using Google or some other form of search engine (Lippincott, 2005; Mizrachi, 2010; OCLC, 2002). One of the more telling studies that illustrates this preference is a recent OCLC survey titled Perceptions of Libraries (OCLC, 2010), a portion of which was dedicated to looking at the information seeking behavior of college students. It found that 83% of college students start their research at a search engine and, even more importantly for libraries, none of them start their search at a library website (2010). There are many reasons for student preference to start research on search engines such as Google or Google Scholar. For one, search engines are seen as faster, more convenient, reliable, and easy to use (2010). Lippincott (2005), in an article examining the information-seeking behaviour of Net-Generation students (Millenials), notes that their preference for Google is tied to its simplistic and responsive design as compared to library-sponsored resources which are difficult to figure out. This sentiment of ‘ease of use’ is echoed by many studies, but particularly in the conclusion of a study by Brophy and Bawden (2005) who compared Google with academic library resources. They found that “[a]ccessibility is likely (rightly or wrongly) to be favoured over quality as a determinant of choice by the student users...” (p. 510).
One might think this preference to start with Google, Google Scholar, or other search engines might be tied solely to the younger, undergraduate generation, but this does not seem to be the case. The preference for search engines over library resources extends from undergraduate through to upper-level students and spans generations. One study (Dubicki, 2010) examined the research habits of undergraduate and graduate business students and found Google the starting point for research for almost 50% of their students. Dubicki also found that more than 25% of their graduate and undergraduate students never used the library’s databases. A study from Virginia Tech that compared the information-seeking behaviour of international and American graduate students found students used the Internet most frequently (Liao, Finn, and Lu, 2007) regardless of national origin. A study at Kent State (Earp, 2008) looked at the information source preferences for master’s and doctoral level education students and found that the majority reported using the Internet first. Even though graduate students tend to be a bit more experienced at searching than their undergraduate counterparts, they too tend to prefer information that is quickly accessible and does not require too much effort to obtain.

Looking at the themes emerging, it is clear that there is an overwhelming preference for easy to use, familiar search tools that transcend education level, discipline of study, and student demographics. Much of the literature examined thus far compared library gateways and databases to Internet search engines before the prevalence of the more recent and sophisticated discovery tools. With these new tools now in place, do students still prefer to start their research using a search engine such as Google and Google Scholar or are these new discovery tools luring students back to the library?

As these new discovery tools require significant financial and labour investment both initially and perpetually, a couple of recent studies have taken a closer look at these new web-scale discovery services to see how they compare to the simplicity of Google and Google Scholar and also explore the user experience in this new paradigm. Gross and Sheridan (2011) explored their newly redesigned library website at Edith Cowan University which featured the Summon search tool on the main page. In this study, a group of first-year undergraduate students were recruited to complete four common search queries using the new website, and their movements and verbal comments were recorded using Camtasia software with a microphone headset. While some of the searches they were asked to perform were specifically designed to be completed using tools other than Summon, the results showed that Summon, which had been renamed Library One Search, “was by far the preferred navigation path” (p. 242) regardless of activity.

Another study conducted at Grand Valley State University Libraries (Way, 2010) took a different approach to evaluating the effect of a discovery tool on user searching by comparing link resolver statistics before and after the implementation of Summon. The author found a decrease in the linking from the more traditional indexing and abstracting databases, an increase in the linking from Summon, and an overall increase in electronic resource access in general, which lead the author to conclude that Summon had been broadly adopted by library users. This research supports what others have suggested: that these new discovery tools with their simple search interfaces are beginning to compete with Google Scholar with regards to helping students find quality, vetted, academic and scholarly information (Joint, 2010; Vaughan, 2011) in a timely fashion.

The Royal Roads University Library Context

Royal Roads University (RRU) is a small, primarily graduate-level university that provides degree programs in applied subject areas that are primarily taken at a distance. The FTE student count hovers around 2,000 and the Library serves a diverse student population that includes young adults finishing the senior years of their undergraduate program, mid-career professionals returning to undergraduate or graduate programming after often significant years of absence from an academic setting, as well as a small number of doctoral students. To add to this mix, the University has an increasing number of international students.

The distributed learning model at RRU is primarily a blended approach of both on-campus ‘residencies’ of 2-4 weeks as well as online learning. It is also worth noting that programs are not offered within a semester system framework at RRU and therefore use patterns are intrinsically varied; program intakes are scheduled at various times throughout the calendar year. The RRU Library is unusually
fortunate in that the librarians are able to see the majority of students for at least one in-person training session during the course of their program, if not more than once, within a hands-on computer lab environment. This generally has two effects: that the majority of students are introduced to a variety of library resources at some point in their program and that our vendor-captured use statistics include use during these research settings.

In January of 2011, The RRU Library launched a redesigned website which provides users with a variety of research starting points. With the help of user testing, the new website was reconfigured with a default Summon search box featured at the top of the page, with additional tabs to change the search box to a catalogue-only search, a journal A-Z search, and a searchable database A-Z list. Also on the home page are various menus with links to subject guides (LibGuides), tutorials (via moodle and Adobe Captivate), and librarian help. The assumption was that by providing several access points to a variety of resources, the Library would accommodate users’ diverse search preferences.

While RRU students’ ages, gender, expertise, and familiarity with libraries and research resources vary, one thing remains the same: they are all trying to find information in a rapidly changing and complex online environment. It is in this context that this study sought to better understand how RRU’s diverse body of mostly distributed learners are finding the information they need online. The goal was to better understand how the addition of Summon affected students’ search patterns and which of the myriad of starting points now available on the Library’s website (and beyond) they preferred, to assist in determining whether or not return on investment is being achieved.

Research Methodology

Previous studies on the search habits of students employed methodologies such as in-person interviews (Mizrachi, 2010), a combination of focus group and survey methods (Dubicki, 2010; Gross & Sheridan, 2011; Head, 2008), or some form of observation (Currie, Devlin, Emde, & Graves, 2010; Gross & Sheridan, 2011). Because the majority of RRU students are studying online, it would have been difficult to obtain enough participants to produce a statistically significant number of responses through in-person observation, interview, or focus group methods. Instead, the authors chose to gather information about students’ online information-seeking behaviour through an electronic survey and look for corroboration of this data in the Library’s database and website usage statistics.

SurveyMonkey was selected as the online survey tool. As the study involved student participation, the survey was submitted to the University’s Research Ethics Board which reviewed the survey and gave its approval. To try to get the best possible response rate, the survey was designed so that it would take 15 minutes or less to complete. As added incentive, participants were given the option to enter a prize draw to win a $200 gift card. The survey was emailed to all students currently enrolled in for-credit courses at RRU and remained open for six weeks (September 20 through October 28, 2011).

The survey was comprised of 21 questions: four demographic and 17 information-seeking questions (see Appendix). The demographic questions were posed to identify the program students were enrolled in (which also identified whether or not they were an undergraduate, graduate, or doctoral student), what age range they fell into (Millenial, Generation X, or Baby Boomer), gender (male, female, other), as well as name/email if the student wished to enter for the gift certificate. The remaining 17 questions asked students to describe their information-seeking behaviours and share their opinions about the usefulness of research resources available through the Library website and beyond. Response was not required for all questions, only for those questions that had been assessed as crucial. Students were specifically asked to think back to their most recent research assignment as this would likely be foremost in their mind and would assist them in answering the survey more concretely. While most of the questions had a set list of choices or required a ranking, opportunity was given for textual commentary, and some questions were designed to have students enter their own answer before ranking a preset list of likely answers to the same question.

To corroborate the students’ self-reported information-seeking behaviour, empirical data was collected through Summon usage statistics, Serials Solutions 360 Link usage statistics, individual database
usage statistics, Library website and LibGuides usage statistics. To see how often Summon was being used by Library patrons, usage statistics on the number of visits per month were downloaded for the period of January 1, 2011 through October 31, 2011. This time frame was chosen to coincide with the launch of Summon and the Library’s new website, to the closing of the student survey. To get a better sense of where people were accessing Summon from for the same time period, referral source statistics were also collected.

A combination of Serials Solutions 360 Link usage data, as well as individual database usage data for the five-month period prior to the launch of the Library’s new website with Summon (August through December, 2010) and the five-month period post-launch (January through May, 2011) were also gathered. As Serials Solutions only tracks database usage traffic through its products and not all database usage traffic, individual database usage statistics were also examined for the same time period, focusing on the usage of the top eight most accessed databases as identified through the 360 Link click through statistics.

Finally, to better understand what resources students were accessing via the Library website as a whole, especially which non-database resources people were accessing (e.g. LibGuides), Google Analytics statistics were gathered for the Library’s website and LibGuides for the period from May 1, 2011 to October, 31, 2011.

Results and Discussion

The survey response rate was extremely high, with 1,038 total responses which, given a headcount of approximately 4500 students (British Columbia Ministry of Advanced Education, 2011), puts the response rate at about 23%. However, given that RRU’s continuing education programs (certificate and diploma students) comprise 3300 of the 4500 headcount (Royal Roads University, 2010), and only 128 respondents who would fall into the category of continuing education programs responded, the response rate from our degree program students was closer to approximately 75% (910/1200).

In terms of the demographics of the respondents, 269 (26%) were undergraduate students, 641 (62%) were graduate students, and 128 (12%) were continuing education students (for credit certificate and diploma students). As our overall institutional gender split is comprised of slightly more women, it is not surprising that our survey respondents were 611 (58.9%) women, 424 (40.8%) men, and 3 (0.3%) listed ‘other’. Similarly, the survey demographics reflect our institutional demographics in terms of age, where 287 (28%) were 17-29 years old, 488 (47%) were 30-45 years old, 253 (24%) were 46-60 years old, and 10 (1%) were over 60 years old.

In response to whether or not they had used RRU Library research resources, 822 (79%) said ‘yes’ and 215 (21%) said ‘no’. It is important to note though that, in the textual responses, a significant number of students said that they had not started their program yet (student email accounts are activated up to two months prior to program start date). Therefore, rather than this representing a true measure of the rate of library use among respondents, it represents a mixture of non-use by active students and non-use by inactive students.

A total of 806 students let us know which library resources they had used in the past. A majority had previously used Summon at 66% (531/806), Google Scholar via RRU (proxied to enable full-text linking to RRU library databases) at 67% (536/806), what was defined as the ‘publisher research databases’ (library databases) at 75% (602/806), and Refworks 51% (411/806). Other resources that had more minor use were the library catalogue at 43% (345/806), what were called the ‘resources by program guides’ (LibGuides) at 20% (163/806), the modular online library tutorial named ‘Infoquest’ at 28% (226/806), and ‘other’ at 4% (29/806) (which from the accompanying text field was mostly comprised of contacting a librarian for help). As mentioned previously, the majority of degree enrolled students at RRU attend at least one library instruction session during their program, so these numbers likely reflect use within that context as well as the during students’ research activities.
The responses to the question “Think about your most recent assignment for which you had to do some research. What online research resource did you start with? (Please select just one)” reflected the findings of the literature review in that when the responses of Google and Google Scholar are added together, Google proved to be the most popular starting place with 42% (336/806) of students reporting that they started with a form of Google (Google at 20% (162/806) and Google Scholar at 22% (174/806)). Second to the combined Google responses were the library databases at 26% (211/806), then Summon with a strong showing for a relatively new service at 22% (180/806), the library catalogue at 3% (27/806), LibGuides at 1.9% (15/806), Wikipedia at 1.7% (14/806), ‘contacted a librarian’ at 1.1% (9/806), Infoquest at 0.6% (5/805), and ‘other’ at 1.1% (9/806).

The students’ responses to why they chose their starting point were analyzed and collocated together into broad categories for the most popular tools of choice. Again, corresponding with the literature review, most of those who chose a form of Google as the starting point for their research cited ease of use as the rationale for their choice. This reason was followed closely by Google’s ability to provide a broad overview of a topic, then less importantly in descending order: habit, the quality of results, recommendation by others, and good search options. For those who chose Summon as their starting point, ease of use was again the most cited rationale, followed closely by both its ability to provide a good overview and its content of credible library resources, then less importantly in descending order: recommendation by others, good search options, and first-order presentation on the library website. Conversely, for those who chose the library databases as their starting point, most of them cited the academic quality of the results as the rationale for their choice, followed closely by the very focused nature of the results, recommendation by others, and familiarity as a habitual starting point; ease of use was also mentioned but much less often than for Google or Summon and as one of least noted reasons. For those who chose Wikipedia as their starting point, all noted that it was a quick and easy starting place. Moreover, the strong recurring theme throughout all of the commentary was that students wanted good results quickly, and they wanted to do as little review of results to weed out inessential results as possible. It is also worth mentioning that the majority of those who responded that they had started with either the library catalogue or Infoquest likely did not understand which tool they were actually choosing; comments such as “It can crawl across so many different databases – best bang for the effort” and “I thought it would give me scholarly articles that would be relevant to what I am searching” (for the library catalogue) and “the one I have used most in the past” and “I can search via keyword” (for Infoquest) do not correlate with the functionality of the tools chosen which indicates that the frequencies for those particular choices are likely faulty. It is also worth noting that the seemingly high rate of use of the library databases and the rationale of ‘recommended’ for their use reflects the influence of library instruction on the students, particularly those whose library instruction sessions occurred prior to the introduction of Summon.

An overwhelming majority of the survey respondents - 81% (655/806) - said that they used other online research resources as well as their first choice. Students were encouraged to select all other online tools that they used in their research, and Google Scholar came out as the top other choice with 41% (267/654) of students using that as one of their other choices, followed by the library databases at 39% (256/654), plain Google at 26% (169/654), Summon at 24% (156/654); the library catalogue at 19% (121/654), Wikipedia at 17% (109/654), contacting a librarian at 10% (62/654), ‘other’ (mostly noted as using other libraries’ resources or using specific websites) at 7% (46/654), LibGuides at 7% (43/654), and the RRU Infoquest tutorial at 4% (27/654). The textual responses to “Please comment on which resource you think is the most consistently valuable research tool for you”, were analyzed and collocated together into broad categories; in descending order of response frequency the categories are: library databases, Google/Google Scholar, Summon, a combination of Summon and Google, a combination of the library databases and Google, and various other responses with low frequency. That the library databases, Google, and Summon were all rated with similar frequency in terms of their value - as well as combinations of those tools - indicates that the library databases and discovery layer are at least complementing Google well. The results in Table 1 further demonstrate the value that students place on the results they gain from an array of resources.
Table 1

How helpful were the results that you found for your most recent research assignment via the following sources:

<table>
<thead>
<tr>
<th>Source</th>
<th>Not useful</th>
<th>Marginally useful</th>
<th>Helpful</th>
<th>Essential</th>
<th>Did not use</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>23 (3.1%)</td>
<td>165 (22.6%)</td>
<td>291 (39.4%)</td>
<td>187 (25.6%)</td>
<td>65 (8.9%)</td>
<td>731</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>7 (0.9%)</td>
<td>75 (10.2%)</td>
<td>291 (39.4%)</td>
<td>261 (35.4%)</td>
<td>104 (14.1%)</td>
<td>738</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>55 (8.0%)</td>
<td>201 (29.2%)</td>
<td>238 (34.5%)</td>
<td>52 (7.5%)</td>
<td>143 (20.8%)</td>
<td>689</td>
</tr>
<tr>
<td>Summon (search box on the library homepage)</td>
<td>17 (2.4%)</td>
<td>61 (8.6%)</td>
<td>206 (29.0%)</td>
<td>280 (39.4%)</td>
<td>146 (20.6%)</td>
<td>710</td>
</tr>
<tr>
<td>Publisher research databases (e.g. EBSCOhost, etc.)</td>
<td>10 (1.3%)</td>
<td>22 (2.9%)</td>
<td>152 (20.1%)</td>
<td>484 (64.1%)</td>
<td>87 (11.5%)</td>
<td>755</td>
</tr>
<tr>
<td>Library catalogue</td>
<td>15 (2.2%)</td>
<td>57 (8.3%)</td>
<td>215 (31.3%)</td>
<td>128 (18.6%)</td>
<td>273 (39.7%)</td>
<td>688</td>
</tr>
<tr>
<td>Resources by subject guides</td>
<td>20 (2.9%)</td>
<td>64 (9.4%)</td>
<td>174 (25.6%)</td>
<td>85 (12.5%)</td>
<td>337 (49.6%)</td>
<td>680</td>
</tr>
</tbody>
</table>

Interestingly, the student respondents rated both Summon and the library database results as ‘essential’ rather than ‘helpful’ with higher frequency than for the Googles and Wikipedia, and conversely, Google and Wikipedia results were more likely to be rated as ‘not useful’ or ‘marginally useful’ than Summon or the library databases. While the Googles and Wikipedia came out ahead on ease of use, the results in Table 1 indicate that library resources nonetheless provide students with resources that they deem critical. This value to students was reaffirmed by the responses to ‘How important are the library services and resources overall to your success in your program?’, to which 75% (585/779) of respondents answered ‘essential’, 20% (157/779) said ‘helpful’, 5% (37/779) said ‘marginally helpful’, and no respondents said ‘not useful’.

As the study was motivated by a particular interest in gathering information from students regarding their use of Summon, students were asked specifically whether or not the introduction of Summon on the library website had improved their ability to search. A majority of students reported that Summon had improved their ability to research effectively, with 61.4% (484/788) saying ‘yes’, 10.2% (80/788) saying ‘no’, and 28.4% (224/788) saying that they have not used Summon. The survey also allowed for comments in response to this question and 174 students made comments. Interestingly, the comments were primarily from those who responded that Summon had not improved their ability to research, with the predominant complaints being too many clicks to get to full-text and results that were not very useful. From an administrative point of view, these comments are not surprising as the Summon knowledge base itself has required ongoing updates since implementation and recent major database interface changes have caused glitches in Summon linking.

The survey also asked students about the features of search engines that they most valued, so that the library might favour the addition of products that include these features where possible in the future. The question was initially asked in a manner that requested open ended comment. These responses were analyzed and thematically categorized. The most popular feature by a large margin was ease and speed of use, followed by having an advanced search or filter, immediate relevance of results, immediate full-text,
ability to link to a reference management software, that results be peer reviewed, ability to limit by date specifically, ability to save results, ability to view abstracts immediately, and other infrequently mentioned features and comments. The question was repeated with a list of options, and the results are listed in Table 2. Given the results from the open text responses to the same question, it is surprising that the only feature rated as essential was the ability to limit to scholarly articles.

Table 2

_How important to you are the following features in any online research resource that you have used?:_

<table>
<thead>
<tr>
<th>Feature</th>
<th>Not useful</th>
<th>Marginally useful</th>
<th>Important</th>
<th>Essential</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced search option</td>
<td>13 (1.7%)</td>
<td>114 (14.9%)</td>
<td>381 (49.8%)</td>
<td>257 (33.6%)</td>
<td>765</td>
</tr>
<tr>
<td>Folder or marked list feature</td>
<td>98 (13.7%)</td>
<td><strong>288</strong></td>
<td>251 (35.2%)</td>
<td>77 (10.8%)</td>
<td>714</td>
</tr>
<tr>
<td>Ability to limit or sort by date</td>
<td>19 (2.5%)</td>
<td>149 (19.7%)</td>
<td>383 (50.5%)</td>
<td>207 (27.3%)</td>
<td>758</td>
</tr>
<tr>
<td>Ability to limit to scholarly articles only</td>
<td>9 (1.2%)</td>
<td>79 (10.4%)</td>
<td>333 (43.7%)</td>
<td><strong>341</strong> (44.8%)</td>
<td>762</td>
</tr>
<tr>
<td>Ability to sort by relevance</td>
<td>5 (0.7%)</td>
<td>92 (12.2%)</td>
<td><strong>373</strong> (49.3%)</td>
<td>287 (37.9%)</td>
<td>757</td>
</tr>
<tr>
<td>Auto-generated search refinements tips (e.g. “did you mean…” )</td>
<td>39 (5.2%)</td>
<td>269 (36.0%)</td>
<td>325 (43.5%)</td>
<td>114 (15.3%)</td>
<td>747</td>
</tr>
<tr>
<td>Ability to export to a citation manager</td>
<td>43 (5.8%)</td>
<td>165 (22.1%)</td>
<td><strong>304</strong> (40.8%)</td>
<td>234 (31.4%)</td>
<td>746</td>
</tr>
<tr>
<td>Ability to search by subject headings</td>
<td>14 (1.9%)</td>
<td>114 (15.2%)</td>
<td><strong>389</strong> (51.8%)</td>
<td>234 (31.2%)</td>
<td>751</td>
</tr>
</tbody>
</table>

Students were also asked about the challenges that they encounter during their research. In a structurally similar manner to the search tool features question, they were asked what their most significant challenge was during their research with a request for open ended comment first. These responses were analyzed and collocated together into broad categories of challenges. By almost threefold, the top challenge for the survey respondents was the ability to narrow their search effectively. Other responses were: inability to find full-text, difficulty finding peer-reviewed results, not having enough time to spend researching, not knowing where to start, managing references, technical issues such as connectivity, getting no results, results that are not current enough, and maintaining focus on only the question being researched. The question was repeated with a list of options, and the results are listed in Table 3.

The results in Table 3 corroborate the textual responses of the majority of students who noted being overwhelmed by the number of results and effective narrowing of search results to be their biggest challenges. While overall the respondents seemed to be reluctant to rate the challenges as ‘impossible’, the two with the highest frequency of ‘impossible’ were locating the full-text and establishing appropriate search terms.
Table 3

Please rate some of the challenges that you may typically encounter while doing research:

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Easy (%)</th>
<th>Marginally difficult (%)</th>
<th>Challenging (%)</th>
<th>Impossible (%)</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating what constitutes a credible source</td>
<td>239 (30.9%)</td>
<td>349 (45.1%)</td>
<td>184 (23.8%)</td>
<td>2 (0.3%)</td>
<td>774</td>
</tr>
<tr>
<td>Becoming overwhelmed by the number of results in searches</td>
<td>108 (14.0%)</td>
<td>290 (37.5%)</td>
<td>360 (46.6%)</td>
<td>15 (1.9%)</td>
<td>773</td>
</tr>
<tr>
<td>Figuring out which is the best search tool to use for my topic</td>
<td>138 (18.1%)</td>
<td>308 (40.4%)</td>
<td>297 (39.0%)</td>
<td>19 (2.5%)</td>
<td>762</td>
</tr>
<tr>
<td>Figuring out how to narrow my search results effectively</td>
<td>107 (13.9%)</td>
<td>299 (38.8%)</td>
<td>344 (44.6%)</td>
<td>21 (2.7%)</td>
<td>771</td>
</tr>
<tr>
<td>Figuring out how to broaden my search results effectively</td>
<td>167 (21.7%)</td>
<td>303 (39.5%)</td>
<td>287 (37.4%)</td>
<td>11 (1.4%)</td>
<td>768</td>
</tr>
<tr>
<td>Locating the fulltext of a document for which I have found a citation</td>
<td>119 (15.5%)</td>
<td>301 (39.2%)</td>
<td>315 (41.0%)</td>
<td>33 (4.3%)</td>
<td>768</td>
</tr>
<tr>
<td>Figuring out which search terms to use</td>
<td>126 (16.4%)</td>
<td>298 (38.8%)</td>
<td>320 (41.7%)</td>
<td>33 (4.3%)</td>
<td>768</td>
</tr>
</tbody>
</table>

Answered question: 777
Skipped question: 262

The demographics of various responses are also of some interest. Perhaps not surprisingly, graduate students were more likely to use both Summon and the online databases than undergraduates, and undergraduates were more likely to start with Google. The percentage of undergrads who used either Google or Google Scholar as a starting point was 52% (93/180), Summon was 19% (34/180), and the online databases was 18% (33/180). For graduate students, the Googles rated a 38% (200/544) response rate, Summon was 25% (138/544) and the online databases were 29% (155/544). For the continuing education students, the Googles were top at 38% (31/82), Summon was at 10% (8/82), and the publisher databases were 28% (23/82). There were no significant differences between student type and the frequency of use for the other less used starting points.

There was little difference between undergraduate and graduate responses to whether or not Summon had improved their ability to research effectively. Undergraduate students responded with ‘yes’ at 65.5% (113/175), ‘no’ at 7.5% (15/175), and ‘have not used’ at 27% (47/175). Graduate students responded with ‘yes’ at 63% (336/534), ‘no’ at 11% (60/534), and ‘have not used’ at 26% (138/534). Continuing education students were less impressed with the effects of Summon on their searches but because fewer of them had used Summon; they responded with ‘yes’ at 44% (35/79), ‘no’ at 6% (5/79), and ‘have not used’ at 50% (39/79).

As might also be expected, graduate students placed more value on library resources than undergraduates, though a majority of students of all types rated the library services and resources as ‘essential’. In response to how important the library services and resources were to their program, undergraduate students responded with ‘essential’ at a frequency of 58% (101/173), ‘helpful’ at 35% (60/173), and ‘marginally useful’ at 7% (12/173). Graduate students responded with ‘essential’ at 82% (434/528) frequency, ‘helpful’ at 15% (79/528), and ‘marginally useful’ at 3% (15/528). Continuing education students responded with ‘essential’ at 64% (50/78) frequency, ‘helpful’ at 23% (18/78), and ‘marginally helpful’ at 13% (10/78). None of the students in any category rated the library services and resources ‘unhelpful’.

Also cross-tabulated were the results to the two questions of which resource did students start with and whether Summon had improved their ability to do research; the results are in Table 4. The results of Table 4 seem to indicate that those who started with Summon were or became fans of the Summon service.
in high numbers. Those who started with the publisher databases were the least likely to have used Summon or to respond positively to its effect on their research if they had. The Google users in both its forms were significantly also in favour of Summon, though a fairly high number of them had also not used Summon.

Table 4

Cross-tabulation of first search tool of choice and the effect of Summon on students’ ability to research

<table>
<thead>
<tr>
<th>Tools of choice</th>
<th>Yes</th>
<th>No</th>
<th>Have not used Summon</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>67 (13.8%)</td>
<td>23 (28.6%)</td>
<td>65 (29%)</td>
<td>155 (19.7%)</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>106 (21.9%)</td>
<td>18 (22.5%)</td>
<td>46 (20.5%)</td>
<td>170 (21.6%)</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>6 (1.2%)</td>
<td>0 (0%)</td>
<td>8 (3.6%)</td>
<td>14 (1.8%)</td>
</tr>
<tr>
<td>Summon</td>
<td>171 (35.3%)</td>
<td>7 (8.8%)</td>
<td>0 (0%)</td>
<td>178 (22.6%)</td>
</tr>
<tr>
<td>Publisher research database (e.g. EBSCOhost, etc.)</td>
<td>101 (20.9%)</td>
<td>28 (35.0%)</td>
<td>79 (35.3%)</td>
<td>208 (26.4%)</td>
</tr>
<tr>
<td>Library catalogue</td>
<td>15 (3.1%)</td>
<td>0 (0%)</td>
<td>11 (4.9%)</td>
<td>26 (3.3%)</td>
</tr>
<tr>
<td>Contacted a librarian for help</td>
<td>4 (0.8%)</td>
<td>2 (2.5%)</td>
<td>3 (1.3%)</td>
<td>9 (1.1%)</td>
</tr>
<tr>
<td>‘Resources by Program’ guides</td>
<td>8 (1.7%)</td>
<td>0 (0%)</td>
<td>7 (3.1%)</td>
<td>15 (1.9%)</td>
</tr>
<tr>
<td>Infoquest Tutorial</td>
<td>2 (0.4%)</td>
<td>2 (2.5%)</td>
<td>1 (0.4%)</td>
<td>5 (0.6%)</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>4 (0.8%)</td>
<td>0 (0%)</td>
<td>4 (1.8%)</td>
<td>8 (1.0%)</td>
</tr>
<tr>
<td>Answered question</td>
<td>484</td>
<td>80</td>
<td>224</td>
<td>788</td>
</tr>
</tbody>
</table>

Students’ starting tools and their opinion of the library overall was also of interest; the results are tabulated in Table 5. While a majority of students who either started with plain Google or Google Scholar rated the library services and resources as ‘essential’, those who started with plain Google were much more likely to rate the library services and resources as only ‘marginally useful’ or ‘helpful’ than students who started with Summon or the online databases. Again, RRU librarians promote our proxied version of Google Scholar to students during library instruction, and students accessing Google Scholar in that manner, though they may prefer to use Google Scholar over Summon as a first choice, do still see the value of library services and resources overall.
Table 5

Cross-tabulation of first search tool of choice and how important library services and resources were to students

<table>
<thead>
<tr>
<th>Tool</th>
<th>Not useful</th>
<th>Marginally useful</th>
<th>Helpful</th>
<th>Essential</th>
<th>Response count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td>0 (0%)</td>
<td>18 (48.6%)</td>
<td>49 (31.2%)</td>
<td>87 (14.9%)</td>
<td>155 (19.7%)</td>
</tr>
<tr>
<td>Google Scholar</td>
<td>0 (0%)</td>
<td>6 (16.2%)</td>
<td>31 (19.7%)</td>
<td>130 (22.2%)</td>
<td>170 (21.6%)</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>0 (0%)</td>
<td>2 (5.4%)</td>
<td>5 (3.2%)</td>
<td>7 (1.2%)</td>
<td>14 (1.8%)</td>
</tr>
<tr>
<td>Summon (primary search box on the library homepage)</td>
<td>0 (0%)</td>
<td>3 (8.1%)</td>
<td>20 (12.7%)</td>
<td>154 (26.3%)</td>
<td>178 (22.6%)</td>
</tr>
<tr>
<td>Publisher research database (e.g. EBSCOhost, etc.)</td>
<td>0 (0%)</td>
<td>7 (18.9%)</td>
<td>35 (22.3%)</td>
<td>163 (27.9%)</td>
<td>208 (26.4%)</td>
</tr>
<tr>
<td>Library catalogue</td>
<td>0 (0%)</td>
<td>1 (2.7%)</td>
<td>10 (6.4%)</td>
<td>15 (2.6%)</td>
<td>26 (3.3%)</td>
</tr>
<tr>
<td>Contacted a librarian for help</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (1.3%)</td>
<td>7 (1.2%)</td>
<td>9 (1.1%)</td>
</tr>
<tr>
<td>‘Resources by Program’ guides</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (1.3%)</td>
<td>12 (2.1%)</td>
<td>15 (1.9%)</td>
</tr>
<tr>
<td>Infoquest Tutorial</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (1.3%)</td>
<td>3 (0.5%)</td>
<td>5 (0.6%)</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>1 (0.6%)</td>
<td>7 (1.2%)</td>
<td>8 (1.0%)</td>
</tr>
<tr>
<td>Answered question</td>
<td>0</td>
<td>37</td>
<td>157</td>
<td>585</td>
<td>779</td>
</tr>
</tbody>
</table>

To take a quantitative, empirical look at the influence of Summon on the use of library resources overall since its launch, usage data was pulled from Serials Solutions Summon Administration Console for the number of visits as well as the referring source. Between January 1, 2011, and October 31, 2011, 41,721 visits to Summon were logged, with the RRU Library homepage being the number one referring source at 75% (31,153/41,721). Identifying the second most popular referral point is problematic as at the time this data was gathered, Serials Solutions documentation and staff were unable to explain where some of the referral source data originated. As the report stood, RRU’s second most popular referral source was Summon itself at 19% (7,831/41,721), which does not make very much sense. The third most popular mode of access was direct linking to Summon by users typing the URL into their browser’s address bar at 5% (2045/41,721). It is not surprising that the most popular referral source to Summon is the RRU Library homepage as it is a default search box prominently presented to users each time they visit. Prior to redesigning the Library website with Summon, RRU Library was already using Serials Solutions’ 360 Core e-journal portal on its website, as well as the 360 Link open URL resolver throughout the library databases and Google Scholar. This baseline database usage data or 'pre-Summon' library database usage statistics was compared to 'post-Summon' database usage statistics to see what (if any) effect Summon had on usage, and whether or not this corroborated the information-seeking behavior students reported in the survey. Table 6 shows the results of this comparison.

While it was expected to see some form of increase, it was surprising to see that click throughs to databases had almost doubled. As Serials Solutions click through statistics only capture the portion of the traffic funneled through Serials Solutions products, a closer look at individual database usage statistics for the same time frame was also warranted. The database usage statistics show only a modest increase after Summon. Before Summon, the total number of database sessions for the databases outlined in Table 6 was 69,189. After Summon, the total increased to 74,881 sessions, an increase of 5,702.

While overall use of library databases remains steady pre- and post-Summon, this increase in ‘click throughs’ perhaps indicates that students are choosing to increasingly avoid the native database interfaces in preference to Summon. Since the acquisition of Summon, librarians have been vigorously promoting this discovery layer both in formal information literacy sessions and in response to reference questions, which may be another possible reason for the increase. Regardless, these results support the
survey findings of Summon’s positive effect on students’ ability to research and library services and resources majority rating as ‘essential’.

Table 6

*Serials Solutions Click Through Statistics by Database Before and After Summon*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Direct</td>
<td>4,034</td>
<td>6,566</td>
</tr>
<tr>
<td>SAGE Premier 2010</td>
<td>3,477</td>
<td>5,467</td>
</tr>
<tr>
<td>Taylor &amp; Francis Online (Informaworld)</td>
<td>2,129</td>
<td>2,726</td>
</tr>
<tr>
<td>ABI/Inform Global</td>
<td>2,107</td>
<td>4,536</td>
</tr>
<tr>
<td>Academic Search Premier</td>
<td>2,053</td>
<td>5,154</td>
</tr>
<tr>
<td>Business Source Premier</td>
<td>1,646</td>
<td>3,939</td>
</tr>
<tr>
<td>Emerald Journals Online</td>
<td>1,547</td>
<td>3,997</td>
</tr>
<tr>
<td>Lexis Nexis Academic (Canada)</td>
<td>1,110</td>
<td>5,809</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18,103</strong></td>
<td><strong>38,194</strong></td>
</tr>
</tbody>
</table>

Part of what RRU librarians do in information literacy sessions is highlight the various LibGuides that are available on the Library’s homepage to assist students in finding and using the resources that are best suited to their program. Part of this study was to explore how well the LibGuides were being used. In order to gauge this, Google Analytics was used to capture the number of visits to the Library’s LibGuides. Between May 1, 2011, and October 31, 2011 (post website redesign), the RRU Library’s collection of LibGuides had 8,211 visits. During the same time period the Library’s homepage, where links to the LibGuides are situated, received 76,083 visits. This implies that slightly over 11% of the library’s website traffic during this time frame was to the LibGuides. This also corroborates the survey findings, where students reported low use of the LibGuides.

From the relatively low use of non-database library resources such as LibGuides and the library’s Infoquest Tutorial as reported in the survey results and from the usage data, it can be surmised that students do indeed want a Google like experience, where they are taken directly to a search interface that is easy to use and has immediately relevant results, and that library resources should be primarily devoted to continuing to improve that direct and easy access rather than descriptive tutorials and guides.

**Conclusion**

The pervasive use of Google by students to do their research – either the Scholar version or not – has been well recorded in other studies. The results of this survey and usage data affirm that a user-friendly library discovery layer tool – in this case Summon - as well as the library databases are generally considered by RRU students to be essential to their scholastic success. Moreover, rather than existing only in competition to Google, these library search tools are often used in conjunction with Google and serve as complements to it within a multi-part search process.

Yochai Benkler (2005), Harvard Law School professor and faculty co-director of the Berkman Center for Internet & Society, said “...when you think of what is the critical innovation of Google, the critical innovation is outsourcing the one most important thing: the decision about what's relevant to the community of the web as a whole doing whatever they want to do” (9:50). The textual comments throughout the survey responses echoed this desire for and value of tools that enabled the student respondents to search and find the best possible results immediately. To put this another way, the comments demonstrated students’ willingness – if not demanded right – to be able to outsource the relevancy that they may place on research results to someone or something other than themselves. Offsetting that willingness to outsource their relevancy determinations, however, is the students’ choice to use multiple search tools to get all the research that they need. At least for the time being, these tools have
differing relevancy ranking capabilities and each presents different valuable – and less valuable - results. Whether or not students will be missing something essential in the research process by increasingly being able to avoid going through result lists to determine which results are most relevant for themselves perhaps presents itself for future investigation.
References


Footnotes

1 Because we only recently implemented Google Analytics to track Library website usage, we have less data to analyse in this area.
Welcome!

We are Rosie Croft, RRU University Librarian, and Jessica Mussell, RRU Instruction and Public Services Librarian. The results from this survey will be used to compile a paper and presentation called Discovery Layers and the Distance Student, and also used to improve and streamline the library’s online services. Our credentials with Royal Roads University can be established by telephoning Roberta Mason, Associate Vice President at Royal Roads University, 250.391.2600 ext: 4432.

The primary research will consist of this survey and is foreseen to take about 15 minutes to complete. You will be asked to describe your research strategies and to share your opinions of the research resources available via the RRU Library. You can submit your name and contact information at the end of the survey to be entered to win a $200 Future Shop gift card. This personal information will not be used to identify your responses and submitting this information is entirely optional.

The research findings will be shared with RRU administration and will form the basis of a presentation at the 2010 Distance Library Services conference and made publicly available as a paper published in the Journal of Library & Information Services in Distance Learning.

The information you provide will be summarized, in anonymous format, in the body of the final report. At no time will any specific comment be attributed to any individual. 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.

Your completion of this survey will constitute your informed consent.

Tell us a little about yourself:

1. What program are you in?
   - 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 Educational Leadership and Management
   - MA Environmental Education and Communication
   - MA Environmental Practice
   - MA or MSc in Environmental Management
   - Master of Global Management
   - MA Human Security and Peacebuilding
• MA Intercultural and International Communication
• MA Interdisciplinary Studies
• MA Leadership (including Health specialization)
• MA Learning and Technology
• MA Professional Communication
• MBA Master of Business Administration
• Tourism program (any of them)
• Doctorate in Social Sciences
• Any certificate or diploma program with the Centre for Applied Leadership Management (CALM)
• International program (Study Group)

2. How many years young are you?
   17-29
   30-45
   46-60
   over 60

3. Are you:
   Male   Female   Other

Library use:

4. Have you used the RRU Library research resources?
   • Yes
   • No

Tell us about your experience with online research resources:

5. Which of the following RRU Library online research resources have you used? Check all that apply.
   • Summon (primary search box on the library homepage)
   • Google Scholar via the RRU Library site
   • Publisher research databases (e.g. EBSCOhost, Springer, Mergent, etc.)
   • Library catalogue
   • ‘Resources by Program’ guides
   • InfoQuest Tutorial
   • RefWorks
   • I did not use any RRU Library resources to do my research
   • Other (please specify)  TEXT BOX

6. Think about your most recent assignment for which you had to do some research. What online research resource did you start with? (Please select just one)
   • Google
   • Google Scholar
   • Wikipedia
   • Summon (primary search box on the library homepage)
7. Please tell us a bit about why you chose this tool to begin your research.

TEXT BOX

8. Again, thinking of your most recent assignment, did you use other online research resources? (if yes to 9, if no to 10)

- Yes
- No

9. Where did you go next? (Please select all that apply)

- Google
- Google Scholar
- Wikipedia
- Summon (search box on the library homepage)
- Publisher research databases (e.g. EBSCOhost, etc.)
- Library catalogue
- Contacted a librarian for reference help
- ‘Resources by Program’ guides
- InfoQuest Tutorial
- Other (please specify) TEXT BOX

10. Please comment on which resource you think is the most consistently valuable research tool for you.

TEXTBOX

11. How helpful were the results that you found for your most recent research assignment via the following services (1=not useful; 2=marginaly useful; 3=helpful; 4=essential; and 5=did not use):

<table>
<thead>
<tr>
<th>Service</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google Scholar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summon (search box on the library homepage)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publisher research databases (e.g. EBSCOhost, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library catalogue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Resources by Program’ guides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>InfoQuest Tutorial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Has the Summon search service on the library website improved your ability to research effectively?
• Yes
• No
• Have not used Summon

Comments TEXT BOX

13. What is the most important feature in any online research resource that you have used?

TEXTBOX

14. How important to you are the following features in any online research resource that you have used (1=not useful; 2= marginally useful; 3=helpful; 4=essential):

<table>
<thead>
<tr>
<th>Feature</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Search Option</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Folder or marked list feature</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to limit or sort by date</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to limit to scholarly articles only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to sort by relevance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto-generated search refinement tips (e.g. “did you mean…”.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to export to a citation manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to search by subject headings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. What is the most significant challenge that you typically encounter while doing research?

TEXTBOX

16. Please rate some of the challenges that you may typically encounter while doing research (1=easy; 2=marginally difficult; 3=challenging; 4=impossible)

<table>
<thead>
<tr>
<th>Challenge</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating what constitutes a credible source</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Becoming overwhelmed by the number of results in searches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figuring out which is the best search tool to use for my topic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figuring out how to narrow my search results effectively</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figuring out how to broaden my search results effectively</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locating the fulltext of a document for which I have found a citation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figuring out which search terms to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tell us about how you organize and manage your research:

A citation manager is a tool designed to store and organize your collection of citations as well as generate your bibliography.

17. Which citation manager do you primarily use? (Please select just one)
- RefWorks
- EndNote
- Zotero
- Mendeley
- Qiqqa
- I did not use a citation manager
- Other (please specify) TEXTBOX

Tell us which services are helpful to you:

18. Please tell us how helpful the following library services are to you (1=not useful; 2=marginally useful; 3=helpful; 4=essential; and 5=did not use):

<table>
<thead>
<tr>
<th>Service</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infoquest Tutorial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRU library’s “Resources by Program” Guides</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interlibrary Loan (we get books/articles from other libraries for you)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Document Delivery (we send out books from the RRU library collection to you)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-person library instruction sessions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference help from a librarian</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRU Library’s online collection (ejournals/ebooks)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RRU Library’s print collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. How important are the library services and resources overall to your success in your program you (1=not useful; 2=marginally useful; 3=helpful; 4=essential)?

1 2 3 4

20. Please share with us any comments you have regarding the library or its services.

TEXTBOX

Enter to win a great prize!

20. 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.

- Name
- Email

Thank you for taking our survey. Your responses will help us improve RRU Library resources and services for all students!
Many of our reference interactions are face-to-face at a desk or in our offices. Unfortunately, not all of our students are on campus. Whether a non-traditional student or a traditional undergraduate, more of our patrons are attending online classes or attending satellite campuses with no librarians on site. It’s difficult to reach these students, but it’s even more difficult to reach them when libraries are facing tremendous financial hardships and have limited their technology budgets. Fortunately technological advances such as programs that offer free virtual "face-to-face" time with our patrons are becoming more available. Programs such as Skype, Jing, Moodle and Spark offer librarians and patrons the freedom to interact with each other at low or no costs. Sadly many librarians are either uncomfortable with the new technology or don't feel the quality of service is as good as high-priced tools. This paper will share the basic set-up of various free or low cost online programs, outline the benefits and drawbacks of some of those programs, and provide effective interaction techniques to use with distance learners to help make the reference interview and information literacy sessions a more positive and comfortable experience for librarians and students.

Background

Founded in 1989, California State University San Marcos (CSUSM) is one of the fastest growing of the 23 campuses in the CSU system. Located fifteen miles east of the Pacific Ocean, just thirty miles north of San Diego, and overlooking the city of San Marcos, CSUSM has an enrollment of 10,276 students and a 30% enrollment growth rate since 2004 (Lutz, 2011). CSUSM has four major colleges (Business Administration; Science and Mathematics; Humanities, Arts, Behavioral and Social Sciences; and Education, Health and Human Services) with academic offerings ranging from classes such as Management and Biology to Anthropology and Education.

In January 2009 the University started offering an Accelerated Bachelor of Science degree in nursing at the CSU Temecula branch, which is approximately 30 miles north of San Marcos. From that original cohort of 50 students, CSUSM Temecula has grown to offer five undergraduate and two master’s degree programs, and additional new programs are being developed for future students. Aside from community colleges in the area, CSU Temecula is the only public higher education institution in the Temecula area (CSUSM at Temecula, 2010).

After much debate the California State University (CSU) system is hoping to begin CSU Online in the fall of 2012 in order to provide affordable, high quality online bachelor and graduate programs to those in need of a university education (CSU, Technology Steering Committee, 2011). According to researchers (Johnson, 2009; Johnson, 2011; Johnson & Sengupta, 2009), California will need to annually increase the number of bachelor’s and graduate degrees awarded in order to meet the projected workforce demand by 2025. California’s commitment to providing college access and attainment has also declined by over 47% from 1981 to 2011 because of a shrinking budgets (Mortenson, 2011), and many for-profit university online programs are unaffordable, leaving recent graduates from those schools in severe student loan debt (Cyran, 2008). For these reasons CSUSM decided to become a part of CSU Oline consortium.
Even before CSUSM decided to be a part of the CSU Online consortium, CSUSM served not only its students located in Temecula but also other distance education students affiliated with CSUSM. In addition to nursing, there are other cohorts attending the Temecula branch, but there are also students who are enrolled in courses offered at one of the satellite campuses in Southwest Riverside or Sorrento Valley. No matter where they are located, distance education students have the same basic library privileges as other CSUSM students but with some added services, such as the option to have requested books held for them to pick-up at the checkout desk in the library or have the books shipped directly home via 1st class mail (CSUSM Library, 2009).

The literature to date mainly discusses the technological abilities of students and their library anxieties. Given the lack of research concerning evaluating the cost and ability to implement online programs by university libraries, an analysis of low-cost or free software used at CSUSM Library may serve as the standard for other public university libraries interested in saving money while providing quality education to their distance students. The question to university librarians is how to implement these tools in their own libraries in effective and efficient ways that will not only benefit their students but also ease librarian concern with training and learning these new software programs.

**Review of Literature**

According to the U.S. Department of Education (2011), the number of bachelor’s degrees granted by for-profit universities has risen by 400% within the last 10 years, in contrast to the increase of 29% granted by public institutions within the same period of time. The current budget crisis in the United States has led to many challenges and the reallocation of funds within universities. It is very difficult to justify expenditures deemed not necessary by higher education leaders and the government; however, these same leaders look at online courses as a way to increase revenue, but what they fail to understand is the cost effectiveness of online learning tools and the stress it causes instructors (specifically librarians) to learn these new tools.

According to Bartolic-Zlomislic and Bates (1999), initial expenditures on new equipment, software, and training can take a substantial amount of time and money to implement effectively. They reveal that start-up costs of online programs are often prohibitive for many libraries. They discuss the potential benefits and limitations of online learning, including careful consideration of the costs associated with online learning. They suggest dividing the cost factors into three groups: capital and recurrent costs, production and delivery costs, and fixed and variable costs. Capital and recurrent costs include things such as equipment and ongoing support, production and delivery costs are associated with time spent creating and time spent delivering a course, and fixed and variable costs can either remain constant or change with the number of participants. Han (2011) discusses software, training, licensing, and maintenance and says that costs are the same for each of them. Han also maintains that monitoring costs are the same based on the fact that monitoring software has to be hosted somewhere. However, bandwidth and network costs, as well as Security audit and compliance costs, were ignored in the study. Using low cost or free software may help alleviate some of the expenditures, but the production/delivery may still be a stress factor for some librarians.

Fritts and Casey (2010) look at a variety of librarians and programs that focus on reaching distance students. Their study provides a structure for training that can be developed both by Library and Information Science programs and for university libraries interested in training their current librarians. Participants of the study were members of Offcamp, ACRL Distance Learning Section, ACRL Regional Campus Libraries Discussion Group, LITA Distance Learning Special Interest Group, and Off Campus Library Services Conference. The results of their 13-question survey revealed that out of 141 respondents, 91.5% never received training in distance education in graduate school but attended workshops and seminars to learn. In addition, a large part of these librarians stated they received little to no distance education training while on the job (Fritts & Casey, 2010, p. 622). The authors concluded that there is a great need for training and professional development opportunities, but budget cuts are not allowing travel to support this need (Fritts & Casey, 2010, p. 623).
With the increase of online universities, especially public universities trying to compete with the private university realm of distance education, distance librarianship is continuing to grow in academic libraries. Instruction and reference librarians must be willing and able to learn how to implement information literacy courses and reference interactions online effectively and efficiently for their students. However, because many librarians are not receiving the training they need with new reference and instruction technologies, many are hesitant or nervous about including the technology in their instruction or reference interactions. There is little to no research specifically regarding reference or instruction librarian anxiety toward distance education and technology. However, Askar and Umay (2001) conducted a study of non-library instructors and found factors that affected the successful use of technologies are instructor attitudes towards these technologies. Whether the technology is sophisticated and powerful or easy to use, the extent to which it is implemented depends on instructor having a positive attitude towards the technology and feeling comfortable learning (Huang & Liaw 2005). With high quality, low cost online tools, most libraries can develop online education that will become more cost effective and less stressful to learn.

Cost Effective Software for Distance Education Libraries

Course Management Systems

Most of the librarians at CSUSM teach information literacy courses to various student populations and are often either embedded in another instructor’s course management system (CMS) and/or are the designers of their own CMSs. For example, the education librarian teaches several freshmen level two-week long information literacy courses and uses a CMS to manage each class. These freshmen classes not only meet in person up to three times a week, but they are also required to complete online assignments, post to discussion boards and, complete online quizzes using their CMSs. In addition, the education librarian is embedded in the CMS of a variety of education courses to provide reference assistance to distance education masters students who only meet virtually. Working in conjunction with the instructor of record, the instruction librarian posts several media productions and online presentations for students to access and use. These students can either post questions to discussion boards, email the librarian privately, or chat using instant messaging, all of which are available via the CMS.

Most CMSs are multi-million dollar markets that include names such as Blackboard, which serves over 5,000 higher education institutions worldwide (Blackboard for Higher Education, 2011a). Although Blackboard claims to improve educational experiences for both instructors and students, the company charges universities quite a bit of money to provide their services (Blackboard for Higher Education, 2011b). Moodle, on the other hand, is a free course management system “designed to help educators who want to create quality online courses” (Moodle.com, 2004). Just like expensive CMSs, Moodle provides a range of services, including “full-service hosting, remote support contracts, custom code development and consulting.” (Moodle.com, 2004). As an international company, Moodle’s customers range from individual educators to businesses and universities.

After leaving WebCT (now Blackboard), CSUSM began using Moodle in 2009. With the help and guidance of the university’s Instructional Development & Support team, faculty attended hands-on workshops and open training sessions to assist them in preparing for this new online course delivery. Moodle sites can be accessed on any computer that has an Internet connection, but the best web browser to use is Firefox, and depending on the use of streaming and interactive media, additional hardware, software, or browser plug-ins may be required. Moodle is not a very easy tool to set up and maintain, but the resources outweigh the drawbacks because they can easily include digital content such as web pages, Word documents, PowerPoint presentations, audio, and/or video content. Moodle also has a variety of communication tools such as forums, chat, and blog, and Moodle also offers a set of assessment tools, such as assignments and quizzes, and a grade book. Some users at CSUSM admitted that Moodle was sometimes “clunky” and the grade book was “confusing”, but for the most part many CSUSM instructors, including library faculty, are comfortable using Moodle, especially for the “free” cost. Other programs such as Haiku LMS (2011) and Coursekit (2011) are very intuitive, do not require any software installation or technical implementation and are hosted on their own web servers. Simply sign up and configure the
courses as needed. Both Coursekit and Haiku are excellent tools for creating interactive tutorials featuring quizzes, sequential modules, discussion, and video embedding.

**Instant Messaging (IM) Services**

There are a number of free and low-cost tools for making chat reference available to distance learning students. A commonly adopted approach is to utilize the free web-based Meebo IM service. Launched in 2006, Meebo made it easy for many libraries to initiate IM-based chat reference. Meebo offers web widgets that libraries can embed within their web pages and it is able to connect with additional IM services such as Yahoo and MSN. Students using a Library’s web site communicate via the embedded Meebo widgets with a librarian who is signed-in to Meebo (Breitbach, Mallard, & Sage, 2009). If a library has ready access to its web pages, setting up a Meebo account and adding it to a web page is requires less than an hour.

While simple to implement, Meebo does have its limitations. Since each Meebo widget is tied to a single Meebo account, using it for chat reference means that librarians must share a single Meebo account. Other limitations include the inability to transfer IM messages among librarians and the lack of usage analytics (Theiss-White, Dale, Fritch, Bonella, & Coleman, 2009).

LibraryH3lp was developed by programmer Eric Sessoms as a solution to address many of Meebo’s shortcomings. It incorporates message queues, multiple accounts, and usage statistics. Widgets for inserting into library web pages are highly customizable and avoid the accessibility issues associated with Meebo’s use of Flash. LibraryH3lp is a hosted solution that does not require local installation of software. Since its introduction in 2008, it has been rapidly adopted among a growing number of libraries.

CSUSM Library initially used Meebo to pilot chat reference service. While student response to the new service was enthusiastic, the limitations of Meebo as a chat reference service led the library to consider other options. LibraryH3lp was considered as a possible solution but the library eventually chose to use the Openfire IM server instead. Though LibraryH3lp was capable of meeting most of CSUSM library’s needs, Openfire offered additional features that would better manage chat reference service. In addition, Openfire opened up the possibility of integrating the chat reference service with an internal IM network. Openfire offered a significant advantage over LibraryH3lp by not having to create yet another account for each librarian. Instead, Openfire’s integration with CSUSM’s campus email system meant librarians could log in using existing campus username and password.

Openfire is a server-based application that provides organizations with the ability to host an internal IM network. Developed through a partnership between Jive Software and the Ignite Realtime Open Source community, Openfire is an exceptionally stable and easy-to-use tool for rapidly deploying a secure IM network. Developed as an Open Source project, Openfire is a free download from the Ignite Realtime website (Ignite Realtime, n.d.).

To install Openfire, a Windows or Linux web server that has Java available (most servers are configured to include Java) is needed. Opening the Openfire software package initiates an automated installation process. Once installation is complete, there is a four-step web-based configuration process. This configuration process requires no external supporting if electing to use Openfire’s built-in database and authentication system. To take full advantage of the applications capabilities consider integrating its authentication mechanism with the institution’s Lightweight Directory Access Protocol (LDAP) system, if available. Integrated authentication allows librarians to re-use campus logins within Openfire.

After configuration, library personnel can connect to the Openfire network using a variety of free IM clients. IM clients are software that are installed to each computer and allows the user to send and receive instant messages. Any IM client will connect to Openfire-based network.

Openfire comes with an optional add-on package named Fastpath. Fastpath is a full-featured chat management system that allows librarians to offer a complete chat reference service that includes web-based widgets, queues, message transfers, and more. In addition, Fastpath chat is fully integrated with the
Openfire IM network. In practice this means that a librarian can hold simultaneous IM conversations with other librarians while also engaging in reference interactions with students via the Fastpath web page widgets. To utilize Fastpath, librarians staffing the reference service will need to use the Spark IM client. Developed by the same organization that created Openfire and Fastpath, Spark includes an optional package that works directly with Fastpath. Spark allows librarians to sign-in to both the internal IM network and to manage incoming chat requests that are received via Fastpath.

Since the introduction of the chat reference at CSUSM, there has been a high use of IM reference service, and the data shows strong levels of satisfaction among students (Ly and Carr, 2009).

**Screencast Applications**

Within the last two years, CSUSM librarians began using online screencasting software as a way to quickly create and share customized video clips in IM reference interactions and emails. The use of screencasting allows librarians to communicate with students “as if they were sitting right next to each other at a reference desk” (Carr & Ly, 2009, p. 410). Jing is a simple and free program with minimal features that focus on sharing basic screen captures and screen recordings easily (Techsmith, 2011). While instant messaging or emailing a student, one could use Jing to instantly share specific screenshots or videos regarding a database or the library’s webpage without having to describe each step via typing. A librarian who uses Jing can simply record the process on his or her own computer and email/IM the video directly to the student to save time. The screenshots are handled in the same way and can easily be marked with a bright red text box, an arrow or highlights to emphasize specific areas of the screen shot.

If the computer being used has a microphone, Jing can record commentary at the same time one is recording a video of a screen. Since most students prefer short videos without a lot of talking, each recording maxes out at five minutes. As soon as the recording is finished, the video is ready to be seen using a link ready to paste and share or it can be saved as an SWF Flash video and posted on a website.

In the latest Jing release, subscribers who sign up for a $15-a-year Jing Pro plan are also able to record from their Webcam so students can see your face while you talk to them. You can toggle between Webcam and screen recording during a screen capture (Dolcourt, 2009; Techsmith, 2011).

Carr and Ly (2009), librarians at CSUSM, conducted a study on the use of Jing on the CSUSM campus. Their findings indicated that students were asking more in-depth questions that required a lot of typing and long answers on the part of the librarian. Both students and librarians were satisfied when Jing’s capability to “say things visually” cut back on the time and effort it took to interact virtually with these types of questions (Carr & Ly, 2009, p. 413).

Another free screencast tool Screenr, which is similar to Jing but does not require installation of software on a computer and works through a browser. In comparison to Jing, the Screenr website for sharing screencasts is much easier to use and the upload process is more intuitive. The Screenr website also incorporates a number of social web features such as public streams, social network sharing, and discussions. Another significant advantage is that Screenr accounts can be created and accessed via external services such as Google, Facebook, and Twitter.

**Video Chat**

The education librarian began using Skype as a way to meet “face-to-face” with distance education master’s and doctoral students who could not come to campus because of how far they lived or because of time constraints (most, if not all, of these students are working professionals in schools all over Southern California). Like Google Talk and other Voice-over Internet Protocol (VoIP) tools, Skype offers voice and video capabilities enabling the users to have a conversation with each other during real-time.

Founded in 2003, Skype is now a division of Microsoft Corp, and, according to the Skype website, there are over 20,000 educators who use this product in their classrooms (Skype, 2011). Free video calling on Skype allows the librarian to interact with students from around the world. The latest version of Skype
offers a clear quality video with High Definition capability (if the users have an HD quality webcam). With Skype, the librarian can show students exactly what is on his or her screen by using Screen share, a feature that allows the student to see exactly what is on the librarian’s screen so the student can follow along in real-time. These features are free with basic Skype; however, group calling and group screen sharing costs money, prices vary according to plan (Skype Premium, 2011).

All of the students who used Skype with the education librarian at CSUSM were extremely satisfied with the reference and instruction interactions they received. Unlike Google, one does not need a special email address to start Skype.

Successful Interactions

All of the programs mentioned above can be embedded in a Moodle shell or on a librarian’s webpage. Whether embedded within a class or offering on-on-one reference interactions, teaching online shares similarities to teaching in the classroom; however, even the best traditional instructors may still find that teaching in an online environment can lead to feelings of inadequacy and being ill-prepared.

The first step in online instruction needs to be significant planning and preparation because, as Brewer, DeJonge, and Stout (2001) suggest, the design of an online course “can either facilitate or impede the learning process” (p. 12). The following tips could help librarians effectively and efficiently implement these online programs with their own reference or information literacy interactions.

Make friends with your IT staff. Although the learning curves on the above mentioned programs are not steep, they still require some help from technologically savvy individuals who know which plug-ins to download and which versions of these programs is compatible with the institution’s system.

Focus on learning objectives. How will the material to the students support their different learning styles? Be prepared to present the content is several different formats. Clearly stated objectives are even more important in online courses as students do not have the opportunity to participate face-to-face (Jarmon, 1999). Failure to properly inform the student of the objectives leaves them feeling confused and frustrated.

Be patient. Not everyone is comfortable with asking for help, let alone asking for help virtually, and not everyone is comfortable with technology. Whether dealing with a poor speller, a slow typist, or a person who is simply not computer savvy, patience and respect is always a requirement when dealing with these students.

Be clear. Student expectations should be clearly defined and easy to identify in a CMS. Start small and slow and build on what the students are learning in class.

Establish a relationship. To create a sense of community among adult learners, instructors should reinforce, recognize, and reward students (Snyder, 2009). White (2000) advises that “a positive emotional climate can serve as a frame of reference for online students activities and will therefore shape individual expectancies, attitudes, feelings, and behaviors throughout a program” (p. 7). Post frequent messages on the virtual board, send a Jing video welcoming students, and encourage them (but do not force them) to post pictures and/or Jing videos of themselves online.

“Meet” regularly throughout the semester or quarter. One of the most important elements of an online learning is consistency. Students, even adult learners, will lose motivation if they feel they are not being held accountable and feel they are not on a schedule. In fact, Ko and Rossen (2004) recommend, “In an online environment, redundancy is often better than elegant succinctness” (p. 76). The course schedule should list each module with due dates, assigned reading, assessments, and other activities. Have students post frequent (perhaps weekly) discussions or video responses to each other’s posts regarding readings and assignments.
Conclusion

With many public universities facing budget crises and with for-profit university increasing enrollment rates, the need for low-cost/free distance learning tools is evident. The products described in this paper are just a sampling of what is available for libraries to reach their distance students and compete with the for-profit schools in a more cost-effective way. In addition to cost-saving incentives, many of these programs are easy to learn by both librarians and students, decreasing feelings of anxiety by all parties involved. Using dynamic, synchronous and asynchronous tools such as video chat, screen casting, and instant messaging embedded on the library’s webpage or in a CMS allows libraries to offer students research assistance and information literacy content even if they’re not on campus. Further research should focus on the effectiveness of high-priced distance learning tools compared to lower-cost/free distance learning tools such as the ones mentioned above. One should also look at student and library satisfaction rates of these low-cost tools in comparison to the high-cost programs offered by larger corporations.

Whatever programs a library decides to implement should be supported by not only by the librarians but their technology staff, their administrators, and most importantly their students. The last thing libraries want is to alienate their distance learners even more, especially with poorly modeled and poorly implemented online learning tools. It is the librarian’s responsibility to ensure their students have equal access to library materials no matter where those students are located. However, it is the administrator’s responsibility to make sure their librarians are getting the necessary training with these online tools, regardless of the price of the tools, in order to eases anxiety and empower those librarians to help their students to the best of their abilities.
References


Changing Trenches, Changing Tactics: A Library’s Frontline Redesign in a New CMS

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Abstract
Advances in technology, evolving user behaviors, the need for educational institutions to explore cost-saving strategies—all frequently force academic librarians into a state of forced adaptation. Librarians at Miami University’s Hamilton campus took the challenge of a university change in course management systems and turned it into an opportunity to review and ultimately redesign their embedded library course pages. This paper describes their research, exploration, and experience taking “best practices” and turning them into “actual practices”.

Introduction
Advances in technology, evolving user behaviors, the need for educational institutions to explore cost-saving strategies—all frequently coerce academic librarians into a state of forced adaptation. As universities continue to expand their online course offerings to attract working students and recruit from a distance, libraries have responded by increasing their virtual presence in course management systems (CMS). This type of “embedded librarianship” continues to grow in popularity and is not limited to Web-based classes. Rather, resourceful librarians increasingly use assignment-specific library resources embedded within course pages to supplement or replace traditional face-to-face instruction, as a communication tool for providing online reference assistance to students at their point of need, and for making information literacy a collaborative effort between faculty and librarians in a virtual learning environment.

Tucked away behind secured authentication points, the private nature of embedded library course pages makes institutional comparisons difficult, if not impossible. In fact, librarians working in the same building may not be able to view or learn from one another’s online embedded pages. To further complicate matters, a librarian’s first experience creating content within the framework of a CMS may be when she is asked to create an embedded library page for an instructor. What should it look like? What should be included? What is everyone else doing? With the subjects of case studies and best practices locked behind protected entry points, findable examples on the Web are limited to screenshots, publicly viewable LibGuides, or pages on a library’s website. These are not always suitable for adaptation into a different CMS. Unable to devote time to developing additional resources, some libraries may settle for repurposing comprehensive subject guides as embedded pages, or abandon embedded course pages altogether. The most determined librarians may persist, but find themselves frustrated by time constraints and ever-changing technologies.

But being embedded at the course level within a CMS does not have to mean a prohibitive time or technology investment. Librarians at Miami University’s Hamilton Campus took the challenge of a university change in course management systems and turned it into an opportunity to review, and ultimately redesign, their embedded library course pages. This paper follows their experience researching and creating streamlined templates that saved the librarians time, and saved the students frustration.

Case Study
Rentschler Library is a regional library for Miami University’s Hamilton, Ohio campus. Miami University Hamilton (MUH), an open-enrollment institution, experienced a total enrollment of 3,634 students in the Fall of 2011, a 10% increase since 2006. While the majority of MUH’s 745 Fall semester
2011 classes were offered in a traditional face-to-face classroom environment, 43 class sections were offered as web-based only, 17 were in interactive video classrooms for distance learners, and 13 were formally identified as being hybrid classes wherein a percentage of classroom seat time is replaced with virtual learning. For traditional classes, Rentschler librarians provided course-specific research instruction for 69 classes, reaching over 1270 students; 31 of these classes, or 45%, were English 111 classes focused on acquiring basic library research skills. To supplement instruction, Rentschler librarians crafted online subject guides, created screen cast video tutorials, provided print handouts, and were added to 22 course sites in an Instructor role in order to provide “Embedded Librarian” services within the university’s content management system.

The library employs three full-time MLS Librarians (including the Director), one part-time MLS Librarian, and two full-time staff. Rentschler librarians wear a variety of hats, each one serving as subject liaisons and departmental contacts, holding responsibilities for collection management in assigned areas, staffing the reference desk for an average of 12 hours each week, providing one-on-one research consultations, and providing course-specific instruction. They also teach a two-credit hour course for building student research skills, provide interlibrary loan services, maintain the library’s website and social networking sites, offer telephone and instant messaging reference service during the 69 hours per week the library is open, and are actively engaged in service activities at the campus, state, and national levels. Like most library staff responding to increased enrollments with limited or reduced staffing, Rentschler librarians are challenged to balance increased student needs with decreased availability of their most essential resource—time.

Precursors to War

In late 2010, Miami University announced that following a brief pilot program in the Spring 2011 semester, it would cancel its contract with the Blackboard proprietary CMS and implement the open-source platform, Sakai Project, in Fall 2011. As an open-source platform, Sakai enables administrators to customize and develop resources and tools that are created by the Sakai Community. Miami University adopted the name “Niihka” to brand and identify their customization of Sakai.

Following the university’s announcement, Rentschler librarians went through a brief period of panic. Could existing content already embedded in Blackboard be transferred or recreated in the new system? Would faculty be invested in including library course pages at a time when they were also busy adapting to the change? As part of the migration, Rentschler librarians reviewed the existing content and immediately noticed room for improvement. Compared to other library services, their CMS embedded resources were relatively new and had begun with a simple page in just a few course sites. However, as demand grew, so did the temptation to add to the pages. Although the librarians considered themselves familiar with student information-seeking behavior, much of their content had morphed into a display of “TMI”—too much information that they thought students “could” use, rather than that they “would” use. Ultimately, the course pages posed the same usability concerns that many library websites experience over time: cluttered, illogically organized information (Liu, 2004).

Moreover, each of the embedded librarians worked independently, leading to inconsistencies in the way content was organized which forced students to re-learn where information was located for each class. As far back as 1983, Sizer-Warner stressed that pathfinders needed to be uniform with one another and limited in length (p. 151) in order to be useful as teaching tools. Fourteen years later, Laverty (1997) advised that web guides must be “well designed, well advertised and readily accessible” (p. 66). Dahl’s 2001 study on the efficacy of electronic pathfinders surmised that the scope of a pathfinder should be manageable and that each library pathfinder should be consistent with the others (p.1). Somehow, the Rentschler librarians had disregarded almost 20 years of prudent and practical advice.

The forced change to a different CMS created an opportunity to reassess the content organization of course-specific pages, to revise strategies for improving information delivery, and to redesign the core templates—changes that would have seemed time-prohibitive otherwise.
The Gauntlet is Thrown: Moving from Blackboard to Sakai

Unfamiliar with the tools available in Niihka and short on time to prepare, the librarians weighed other options for delivering content to individual course pages. One option was to create individual html pages from the library’s website, which was built using the open-source content management system, Drupal. This option had potential; individual librarians could log in to the site and create course pages using a visual editor, then link to the appropriate page from within the Niihka course site. However, the library’s webmaster—who was also one of the embedded librarians—was apprehensive about creating roles with editing capabilities for each librarian, changing the permissions on existing pages, maintaining an access point to the course pages, and finding time to support staff training. Another concern was that having the pages publicly viewable on the library’s website could result in site visitors unintentionally landing on them, thereby impacting overall site usability.

A second option was to use LibGuides, powered by Springshare. Many libraries utilize LibGuides and are pleased with how easy they are to use, their relative affordability, and their flexibility in layout and design (Adebonojo, 2010; Glassman & Sorenson, 2010). While the Rentschler librarians administer a small number of subject guides for degrees that are offered only at the regional campuses, the licensing cost is paid for by the main campus and individual guides are branded with logos and links specific to the main campus. If the Hamilton campus librarians chose to embed individual LibGuides into our course pages, the contact points (IM, text, email, phone, library home page) would guide students away from the staff familiar with their research needs. Furthermore, it was foreseeable that a large quantity of individual course pages would be needed over time as more faculty would inevitably request individually tailored library course pages. If Rentschler Library was going to meet the anticipated demand for course pages and be able to brand them with local library contact information, they would need to purchase their own license. Under current budget constraints, that was not an option.

Finding the Right Battleground

It was time to either give up, or to explore what Niihka had to offer. As Gibbons (2005b) pointed out in “Integration of Libraries and Course-Management Systems,” librarians need to position themselves where learning occurs, lest they “cede additional ground and in essence invite alternative services” (p. 12). Participating faculty and students had grown to expect library course pages in the CMS that were tailored to their research assignments. Librarians had to make Niihka work. By creating new course pages in Niihka, the librarians hoped they could continue to provide customized research assistance at the students’ point of need. They also hoped their “familiar” presence early on in the new CMS would help instill a sense of confidence as users explored Niihka.

In order to learn Niihka more efficiently, Rentschler librarians attended several training sessions offered by the university’s Information Technology (IT) department. York and Vance (2009) include training in their “Best Practices for Embedded Librarians” list, not only as a means for gaining expertise working within the CMS, but also as a way to establish themselves “as interested players in the online curriculum” with IT staff and campus faculty (p. 202). Additionally, Rentschler Library’s webmaster/librarian was invited to join the Hamilton campus instructional designer on the “Sakai Training Team,” a small group of tech-savvy staff and faculty with responsibilities that included training faculty in a one-on-one environment and providing technology assistance during open workshops. Because her role was to assist faculty with the transition, including migrating content and selecting tools, the library’s function as a collaborative partner was reinforced.

Serving on the team garnered other positive benefits, most notably the opportunity to explore, experiment, and even discard different tools and resources in a test environment. One unique feature of Niihka is that each user has a personal work space that includes a Resources section. Documents and other file types can be uploaded to the Resources folder and shared across course sites or on the web. Text documents, html pages, citation (link) lists, and forms can also be created from that location and farmed out to applicable course sites. Rentschler librarians immediately recognized the value in being able to maintain control of library course pages by embedding “My Workspace” pages into course sites, instead of creating them as content areas within the individual faculty course site as they previously did in Blackboard. The
prospect of updating, making edits, and copying content for use in other courses was enthralling. However, the spell was broken when it was discovered that we were unable to track usage statistics in the “My Workspace” area of Niihka.

An MUH Library “Project Site” was created in order to provide library staff with an area for group experimentation. Niihka’s project sites are similar in function to Blackboard’s organization (community) sites; the same tools are available as in course sites, but without the course generated student roster. Although other libraries have used this feature in Sakai to create searchable and joinable library spaces that are subject-focused (Dene, 2011), the MUH Library project site initially only included items viewable to its site members: the library staff. This included a staff wiki, a resource folder for storing staff meeting minutes, and quick links to the rotating weekend schedule, reference desk schedule, and personal staff contact information. The site’s purpose promptly changed when it was realized that the html pages and other items in the Resources folder had Statistics fully enabled. Librarians were ecstatic to realize that they would not have to revert back to creating content within each instructor’s course site and cajoling faculty to enable their Statistics function. They could create, edit, and store embedded course pages within “MUH Library” and embed them into course sites at the instructor’s request. As an added bonus, they were able maintain the project site’s “private” status, while making items contained in course-related folders publicly viewable.

This serendipitous discovery had a profound impact on the ability of Rentschler librarians to work collectively and collaboratively to redesign embedded course pages. Although Blackboard’s organization (community) sites could have been employed in much the same manner, the need for it had never arisen, and thus, was never explored. Chesnut, Wesley, and Zai (2010) noted that the shared space in their library’s community site within Northern Kentucky University’s Blackboard CMS facilitated improved sharing; with one collective space, it was easier for staff and librarians to upload and access prepared electronic materials (p. 123). Rentschler librarians found similar desirable benefits from storing embedded course pages in one accessible location, including an improved awareness about upcoming assignment requirements and suggested reference sources. Additionally, embedded library course pages with similar research requirements no longer had to be recreated. Librarians could copy and adapt existing pages to fit course needs. But they first had to design those core templates.

**Planning the Attack, or Designing Core Templates**

Michael Stephens (2011) advocates that “information architecture, usability, and emphasis on user experience and design should be included in every LIS student’s program” (p. 44). Similarly, Bell and Shank (2007) stress the importance of staying relevant in higher education by merging traditional academic librarianship skills with experience in technology and instructional design; thereby coining the term “blended librarian”. Conversely, others maintain that the “visual editors” installed in most content management systems, including blogs and course management systems, negate the need for librarians to possess web skills. For example, Glassman and Sorenson (2010) celebrated that Web 2.0 tools make it possible for anyone with little or no experience to create and manage web content (p. 283). Although true that anyone technically “can” create web content, Rentschler librarians wanted to make sure the content they made was usable for students.

Students unable to locate what they need using library resources will quickly revert to what is familiar: Google (Adebonojo, 2010; Gibbons, 2005a; Head & Eisenberg, 2009; Reeb & Gibbons, 2004; Foster, 2007). In order to provide students with customized content tailored to satisfy their research needs, Rentschler librarians needed to create a streamlined template that would improve usability and keep pages from becoming too congested. They combined previous information architecture experience, web development skills, observations of student information-seeking behavior--even their dissatisfaction with their existing embedded library course pages--to design core templates grounded in user design.

The librarians first focused their efforts on developing research templates focused on common assignment topics general enough to serve multiple foundation classes, including an English argumentative assignment, an English literary analysis, a communications rhetorical analysis, and a teachers education theory paper. Templates were organized by purpose and labeled in language familiar to students and void
of library jargon. Since the library’s website was redesigned and underwent usability testing in 2009, task-oriented headings were selected that mirrored the language used on the library’s website and instruction handouts, including: Find Books, Find Articles, Help with Citations, etc.

One thing students—and librarians—desired was an ability to begin searching directly from the course page. To meet this demand and become more than just a link, the “Find Books” content area included an embedded search form for the library’s catalog. Very brief, task-oriented directions were placed adjacent to the embedded form. The search results are displayed in a new page, enabling students to continue to follow these basic directions for limiting their search, requesting books for delivery, etc. while they navigate the catalog.

The “Find Articles” content area did not include an embedded search form, primarily because most research assignments necessitate use of more than one database. As eager as students are to begin typing as soon as they see a search box, it was decided that students would benefit from a bit of coerced restraint. Additionally, off-campus access to databases requires user authentication and librarians wanted to avoid additional student frustration by prominently displaying those instructions. Since the “Find Articles” area lists more than one resource, bulleted lists were utilized to maintain organization and keep the content streamlined. Depending on the research assignment, additional tips for limiting to scholarly articles, finding full-text, and refining search results were included.

The “Help with Citations” area also included a bulleted list of resources for students having difficulty properly citing their sources. Since the majority of Miami University Hamilton classes are at the 100 and 200 levels, our students generally use only the APA and MLA styles. Another content area included was “Search Tips,” a short section that provided a brief overview of Boolean Operators. Embedded librarians easily edited the examples to include assignment-specific search terms and subject headings relevant to the course. Additional content areas depended upon the type of resources the instructor permitted. For example, links to Internet resources and background reference materials were only included if expressly permitted within the assignment constraints.

The library’s previous embedded pages featured a top block of information introducing the librarian to the students. Although it served a purpose in familiarizing the students with the librarian’s role, it took up valuable “real estate” and did not immediately introduce students to the actual purpose of the embedded page: providing students with access to relevant resources. Following Nielsen’s (n.d.) advice to “kill the welcome mat and cut to the chase”, the librarians stopped including biographical information and credentials. Instead, all templates with three or more content areas now included anchors at the top of the page. By adding the anchors to the top of the landing page, students can quickly identify which content area satisfies their research need without scrolling to the bottom. Additionally, the content areas are divided with a horizontal line; making it easier to visually scan for information (see Figure 1).
While the designing librarians did not want text-heavy introductions taking up space, they still recognized the need for students to easily identify points of contact. More importantly, they wanted students to be able to navigate to all subsequent embedded library course pages and quickly find the library’s contact information. To serve this purpose and to add to the page’s visual appeal, colorful graphic buttons were added that complement Niihka’s color palette. The general templates included a button for the library’s website, telephone reference, an instant message (IM) pop-out, text reference, and a link to the library’s Facebook page. In table format, the buttons were situated next to descriptive links so that students with less Web experience would understand their function. On pages customized for specific classes, the “premier” space included a picture of the embedded librarian with his/her contact information.

Once the general templates for common research assignments were created, the librarians turned their attention toward more complex embedded pages. The librarians had previous experience being embedded in a number of classes that included multiple research assignments not easily organized or navigated by content type. To account for the variety of resources needed to complete each assignment, these templates were organized by assignment and clearly labeled to mirror the instructor’s assignment descriptions. For example, an embedded library page in one Anthropology class was divided by “Find Scholarly Articles in Anthropological Journals” and “Find an Ethnography.” One Introduction to Psychology (PSY 111) class was strictly devoted to finding empirical research articles on assigned topics using PsycINFO, while another instructor’s PSY 111 class was divided into three assignment areas, each requiring different resources and search strategies. By staying committed to usable web design, clutter and congestion were avoided (see Figure 2).
Stocking the Arsenal, or Selecting Tools

With the core templates built, commonly used instructional and communication tools were explored for inclusion. Although many librarians have reported positive experiences using discussion boards in addition to embedded library course pages to connect with students (Schroeder, 2011; Stewart, 2007; Tumbleson & Burke, 2010; York & Vance, 2009), Rentschler librarians were hesitant to employ them as a regular means of communication. One librarian noted that her own experiences regularly using discussion boards as a graduate student were not encouraging; many classmates simply posted the required post and/or comments to earn the available points and did not return to the thread later to see what responses were posted or to engage in anything other than artificially constructed “discussion.” Considering the amount of time needed to monitor these boards and to reply with appropriate reference suggestions in a timely manner, there was concern that librarians would waste valuable time identifying and promoting helpful resources that would never be seen. Gronemyer and Dollar (2011) reported similar unresponsiveness and “resounding silence” (p. 116) when the librarian tried to enter class discussion. It was decided not to actively pursue this tool.

Instead, the librarians focused their communication strategy on both synchronous strategies for reference assistance (IM and phone) and asynchronous strategies (email and facebook). In previous semesters, Rentschler librarians embedded IM widgets directly into the library course pages. The ability to type a question directly into the box did drive students to use the service and increased overall usage statistics. DeVoe (2008) underscored their simplicity, stating that “just like pencils, chat widgets are simple and crash resistant” (p. 100). However, Rentschler librarians noticed some troubling complications. The primary issue was that a student’s ability to see the embedded content, like the widget, depended upon the security and browser settings on his personal computing equipment. If a student did not have an Internet device that could handle flash, Meebo widgets disappeared; students with Javascript disabled had the same issue with LibrarH3lp widgets. To take DeVoe’s analogy a step further, it was like giving a student a pencil with no lead, except the student did not even know she had the pencil.
There were other issues, as well. If a student wanted help finding articles in a database or finding books in the catalog, they lost contact with the responding librarian as soon as they connected to the suggested resource. The librarians replaced Meebo widgets with LibraryH3lp widgets because the widget could “pop out” to a new window if the student clicked a green arrow, thereby letting them continue the reference interaction while simultaneously navigating the suggested resource. Although good in theory, librarians either forgot to tell students to click the arrow, or students simply did not do it. Reference conversations were repeatedly lost and confused students found themselves back at an empty widget asking for help.

As part of the redesign, the librarians removed the embedded chat widgets. Instead, templates included a colorful button graphic in the main contact area. The button is a hyperlink that opens a LibraryH3lp IM screen in a new window, thereby enabling students to keep the librarian “on the other end” for as long as needed. To assist students who may not understand what the graphic meant, the text “IM Us” was placed next to the button and also hyperlinked to open IM in a new window. Lastly, the LibraryH3lp account is monitored by all Rentschler library staff simultaneously, not only the class’s embedded librarian. This was done to neutralize students’ “unrealistic expectations of 24/7 availability” of the librarian embedded in their class (Chesnut, Henderson, Schlipp, & Zai, 2009). While this may not be desirable when the course work is highly specialized, Miami University Hamilton offers mostly lower division undergraduate courses and no graduate courses. Each librarian provides reference and instruction services and must be able to provide both in-person and virtual guidance for a broad range of disciplines. The outcome is true “instant message” service 69 hours a week, instead of the limited availability of one librarian and an “unavailable” message on the IM widget.

Of course, that left 99 hours each week that the library would not be available to answer instant messages. To meet users’ needs during those hours, Rentschler librarians had previously created a small number of video tutorials for self-guided learning; these were available from the library’s website. Most of the videos were created using the free version of Jing and then uploaded to Screencast.com in Flash format. Although the Flash file could be embedded directly into the course page and the price was right (free!), the videos were in Flash and posed the same usability issues previously described in regards to the Meebo widget. Instead of purchasing more expensive software for creating screencasts or file converting software, the library upgraded to Jing Pro for just $14.95 a year. With Jing Pro, movie files are created in MP4 format and can be uploaded directly to YouTube.

An added benefit to using Jing is that recordings are limited to five minutes in length. Through usability testing on the instructional effectiveness of video tutorials, librarians have discovered that students value brevity over depth of instruction (Templeman-Kluit & Ehrenberg, 2003) and want to skip introductions and get right to the explanation of how to use the resource being described (Bowles-Terry, Hensley, & Hinchliffe, 2010). To shorten videos and account for user preferences, librarians decided to skip the biographical narratives and start videos at the searching point. Since the tutorials were embedded into the library course page near access to the database or catalog being described, directions on how to get to the resource from the library’s website were also omitted.

Naturally, the most significant tool would be the librarians themselves. Although Niihka includes a visual editor, York and Vance (2009) emphasize the importance of training librarians how to use the CMS (p. 204). For interested staff members, the librarian/webmaster provided training on basic html, web accessibility issues, and an overview of technical writing for the web user (See Appendix). With improved understanding of how to successfully copy source code and some motivation on web usability, the embedded librarians set three easy rules to help keep the templates on track: stay brief, stay relevant, and stay accessible.

**Recruiting Troops, or Getting Faculty Involved**

Initially, the librarians only worked with faculty and courses that were ready to use Niihka, required at least one research assignment, and had used an embedded librarian in Blackboard. Only three of the courses were 100% online classes. One major difference between Blackboard and Niihka was
available roles in the roster. Whereas a librarian could be added to a Blackboard class as a “Course Builder” and make modifications without accessing grades, the only role in Niihka that included site-editing privileges was “Instructor.” Faculty who used an embedded librarian in the past knew what to expect and seemed more likely to trust that librarians would not take advantage of the expanded access available in the “Instructor” role. Librarians who remained embedded in courses as an “Instructor” were able to track assignment due dates, post relevant announcements, and send email messages reminding students they were there to help.

Faculty who were reluctant to keep a librarian active in the “Instructor” role could elect to remove the librarian after the course page was added. The embedded librarian could still control the library’s course page since it was stored in the library’s project site rather than the professor’s course site. Before being removed, the librarian linked the library page to the course navigation menu and renamed it.

A clear title and presence in the navigation menu were essential, especially since students were also adapting to a new CMS. In order to even get to their course site, students had to access the campus portal, log in using their university ID and password, click on a link to go to Niihka, log in again, and then finally select the appropriate course. Many students expressed frustration before even getting to the library page. The name given to the link to the library’s page needed to reflect the page’s purpose so that students would correlate it with their research needs (Strothman, McCain, & Scrivener, 2009). In Blackboard, the librarians usually named this link “Library Help”, but the Niihka course sites included two similar permanent navigation links that could not be disabled: “Help” and “Training and Support”, both IT links for Niihka technology assistance. Because of this, the librarians adopted the link title “Library Research” and used Niihka’s “Reorder Page” tool to strategically place it near assignments in the course navigation.

After a few weeks without major incident, the library promoted the service to faculty who had not used an embedded librarian in the past, but the research requirement remained. This was essential in order for librarians to create the kind of customized research environment that students have grown to expect (Reeb & Gibbons, 2004; Norelli, 2010). To make sure faculty did not view the embedded librarian as a replacement for library instruction, most marketing was done in conjunction with scheduling one-shot instruction sessions. Although many libraries embed their information literacy modules in blended courses to replace tradition one-shot instruction that takes place face-to-face (Schroeder, 2011; York & Vance, 2009), Rentschler librarians valued the face time as an opportunity for providing hands-on assistance and personalizing the research experience. As such, assignment tailored embedded course pages were primarily used to maintain communication with students after research instruction and as a supplemental guide for locating relevant library resources.

While the instructor’s assignment was necessary in order to create a customized research page for students, the librarians recognized that their general templates would work for a variety of classes without needing modification. A page was added to the library’s website that included links to these pages and directions for faculty on how to add them to their course sites (see http://www.ham.muohio.edu/library/niihka ). Knowing that campus collaboration was essential for success (Drewes & Hoffman, 2010; Kearley & Phillips, 2008; Riedel, 2002), librarians shared the page with the campus instructional designer to facilitate usage during the course design process and to promote to e-learning faculty. Although the library was unable to track how many different classes embedded the pages, Niihka’s page statistics showed fairly decent usage for a trial semester, including: 88 hits on “Evaluating Resources”; 126 on a “General Education” template, and; 141 hits on a “General Research” template.

**Counting Casualties, or Assessment**

Embedded pages that supplemented face-to-face instruction had significantly higher usage statistics. For example, two sections of an anthropology class boasted 690 hits, one section of a jazz class accessed their page 490 times, and two sections of an English 111 class with a required argumentative paper used the library’s embedded page 457 times. Although a large number of hits is not always indicative of a page’s usefulness, the ratio of “students to hits” indicated that students frequently returned to use the library’s page.
In addition to tracking statistics, librarians surveyed students from the aforementioned English 111 class to gauge usability and assess overall satisfaction. The survey was distributed two weeks after face-to-face instruction, on the same day the argumentative assignment was due. A total of 34 students completed the survey. Most of the results reinforced the decisions made during the template design process, particularly in regards to staying concise and relevant. For example, only 8% of students were willing to try more than three library resources before reverting back to Google. The majority, 52%, would only try one or two.

The justification for routing instant messages to a group queue—rather than to the individual embedded librarian—was likewise proven valid. Only 16% of students reported doing research or homework Monday through Friday between 8 a.m. and 5 p.m., during the time they would have the most opportunity for connecting to a specific librarian. The majority, 47%, do their work between 5 and 9 p.m., at a time when they can be helped by whichever Rentschler librarian is on duty for the evening shift. Significantly, an additional 35% reported doing their work between 9 p.m. and 1 a.m., outside of the library’s business hours. Similar preferences were reported over weekends, except 6% indicated an additional preference for working overnight, between 1 and 7 a.m.

Although optimistic that library video tutorials could assist these night owls, statistics showed very low usage and the students were not receptive to their inclusion on their library page. In fact, 27% either “Disagreed” or “Strongly Disagreed” with having them at all, and 50% were “Neutral”. When asked how long they could watch a library video tutorial before it lost their attention, 44% chose 1-2 minutes, with an additional 32% becoming disinterested at the 3-4 minute mark. Survey questions and responses can be viewed at http://www.ham.muohio.edu/library/nihka.

**SitRep, or Future Directions**

While satisfied with the improved uniformity of their embedded library course pages, Rentschler librarians wanted to make sure students had fast and easy access to the library even if their classes did not use an embedded library page. To this end, the templates also influenced a redesign of the library’s Facebook page. Since each embedded library course page included a link to the library’s publicly viewable Facebook page, http://www.facebook.com/Go2Library, students were encouraged to either “Like” or bookmark the page for easy access in the future. The page includes links to two static html pages, one labeled “Find Books & Articles” and the either labeled “Ask a Librarian.” Both pages match the design of the embedded library course pages, thereby providing students with another familiar starting point for their research (see Figure 3).

Future plans include promoting the embedded library course pages specifically to instructors teaching online-only classes. Although the library’s relationship with the campus’s instructional designer has been beneficial for increasing faculty awareness of the pages, few faculty have utilized the service. A direct marketing campaign will be necessary to increase use of the service. Assessment for the effectiveness of these pages in the absence of a face-to-face introduction is also planned.
Gibbons (2005c) eloquently stated in “Strategies for the Library: CMS Integration Barriers,” that students expect more than just a link to the library’s website; they expect “…librarians to push course-appropriate library resources to them through the CMS in much the same way that Amazon.com pushes book recommendations” (p. 26). Although the Miami University Hamilton librarians are not quite there, they are more confident that their customized pages are relevant to their users’ needs. Moreover, they are confident that the service is sustainable, provided they use the templates as a foundation.

The efficiency of using adaptable templates for different course pages has received much warranted praise (Bell & Shank, 2007; Haycock & Howe, 2011; Viggiano, 2004). Rentschler librarians found that they actually save time—both for the librarians creating the content and for the students using them to find information. With greater consistency of layout and design, students are better able to navigate their course site’s embedded library pages without having to adapt to each librarian’s style. As more universities explore cost-saving options, it is likely that other librarians will be confronted with the same challenge of CMS migration. Embrace the opportunity. The forced change to a different CMS precipitated these librarians into taking “best practices” and turning them into “actual practices.”
References


Appendix

Quick Tips for Embedded Library Pages

Basic Purpose

1. Limit resources to what is needed to complete the assignment.
   **Example:** Do not include every resource that a student could possibly use to complete an assignment; they are likely to only go to the first one listed, or the top three at best. Instead, include a link to a relevant subject guide or databases list for students seeking additional resources.

2. Limit resources to what is allowed by the instructor.
   **Example:** If an instructor only allows scholarly articles, do not include encyclopedias and dictionaries you think the student may find useful. They will lose points…and you will lose credibility.

3. Get an objective opinion.
   **Explanation:** Have someone else review the page to identify purpose, navigate content, and determine if the amount of text is appropriate for the web. Be open to feedback!

Basic Design

1. Context: View your page(s) within the context of the embedded frame.
   **Explanation:** Pages look different when embedded within the CMS. Check that fonts are readable, horizontal scroll is avoided, and that colors complement the CMS, not compete with it.

2. Terminology: Use task-oriented headings to define content areas and check that terms are consistent with those used in the assignment.
   **Explanation:** Students looking for peer-reviewed journal articles may not understand “scholarly articles.” Use the faculty-provided term and then provide additional descriptive text outside of the heading.

3. Font: Keep font style and size consistent with the course site, and within the page.
   **Explanation:** Consistent font styles and sizes will keep the page looking cleaner, more professional, and will not hinder the student’s visual focus.

4. Pictures/Objects: Resize images before uploading them to the CMS to keep pages loading fast.
   **Explanation:** The visual editor will let you select the size you want displayed, but this does not change the size of the actual image. Rather, it tells the browser what size to display, which can slow page load. Students access the web on a variety of devices with differently sized displays; keep images minimal and sized smaller.

Basic Web Development

1. Email: Hyperlinked (MailTo:) email contacts should include the librarian’s full email address.
   **Explanation:** MailTo links will not work for users without a properly configured email client on their computing device, or who are working on a public computer.

2. Images: Always add a descriptive “alt” tag to images.
   **Explanation:** Accessibility for visually impaired users.
3. Hyperlinked Images: Add a “0” Border to remove the hyperlinked lines around the picture.
   **Explanation:** They are not visually appealing.

4. Images/Text: Add in at least a “5” for both HSpace (horizontal) and VSpace (vertical)
   **Explanation:** This provides spacing between the image and any nearby text and keeps the text readable.

5. Embedded Videos: Include a direct link to the video file.
   **Explanation:** Browser settings may not allow the embedded content to display; including a link provides an additional access point for the resource.

6. Headings: Use headings (H1, H2, etc.) to divide and describe content
   **Explanation:** Headings provide a visual clue that the information is different or important and draw the user’s eye. Do not simply enlarge the text! Screen readers utilize headings to help visually impaired users navigate the page.

7. Horizontal Rules: Inserting an `<hr>` between content areas will add a visual line of division.
   **Explanation:** Divided content helps users skim the text more effectively.

8. Hyperlinks: Name links appropriately by action or by resource title and avoid terms like “click here”. Check that links work from both on and off-campus.

9. Anchors: If page content requires much vertical scroll, use page anchors at the top of the page and include “Return to Top” anchors at least midway and at the bottom of the page.
   **Explanation:** Anchors help users navigate to the most relevant portions of the page.

10. Copy from the Code: When copying content, always switch from the visual editor into the source code. Same applies for pasting.
    **Explanation:** If you copy from the visual editor, there is a risk of not getting all of the hidden code you need; if you paste code into an existing site, you risk copying over existing code.

**Further Reading**

   Explanations of how users read on the web & advice for improving usability.

   Tips for writing on the web and customer-focused design.

3. W3C: [http://www.w3.org](http://www.w3.org)
   Standards for web design, web architecture, and web building (HTML, CSS).

   Includes information architecture, Web design, HTML codes, and more.
How to Implement a New Search System and Make Friends While Doing It!

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American InterContinental University Online

What could bring more change to an online library than going from a federated to a discovery search system? Not much! This paper will share what was learned about initiating and implementing an important change that ultimately impacts a variety of stakeholders, and the importance of collaboration between library personnel at all levels of an organization. All involved in implementing change must learn from the process. The authors will discuss what went well, what important information was overlooked, and what new tools, techniques, and skills they acquired to assist with planning for future change. It is the objective of this paper to share valuable insights, as well as tools and tips when it comes to decision making, collaboration and change management.

Introduction

Career Education Corporation (CEC) owns and operates over 10 schools with more than 90 campuses, some operating online and others as traditional ground schools. American InterContinental University (AIU) is one of CEC’s schools. AIU has 5 campuses, with AIU Online serving as the main campus. CEC offers centralized library services to AIU Online and several other CEC campuses. For several reasons, AIU was asked to be part of the planning process of a new library search engine and to be one of the first schools launching the new system. AIU Online was one of two CEC campuses already using a multiple database search engine, WebFeat. Having had experience with a multiple database search engine, AIU Online would be able to contribute a wealth of ideas and could also incorporate user feedback about the current search system into any discussion of a replacement. This was invaluable as the new system would eventually be rolled out to all schools at CEC, most of which did not have experience with a multiple database search engine. AIU Online and the centralized library team would draw upon their shared experiences with WebFeat and work collaboratively to implement the new system in an effort to ensure a smooth transition for AIU Online library users. This paper will examine the process of how AIU and CEC planned for, selected, and implemented the replacement search system.

Background

AIU Online began considering a new library search engine in August 2010, over a year before WebFeat’s November 2011 retirement date. This need came at an opportune time, as CEC was also going through a project to update and unify content across online and ground campus portals. In their current state, the ground campus libraries did not have a multiple database search engine. The timing allowed the CEC Dean of Library Services, Indu Aggarwal, to advocate adding a new search engine to the ground school library websites.

This change meant two things. First, Aggarwal and AIU Online Director of Library Services, Rhonda Contreras, had to convince the administration that a multiple database search engine was necessary, as many were asking why students could not just search each database individually. Second, the administration had to be convinced that the cost of adding the ground campus libraries to the license agreement for the new search engine was justifiable. The argument was easy on both accounts. The statistics demonstrated that library database usage nearly tripled after the implementation of the federated search engine in 2006. Providing a consistent student experience across all campuses was a strong counterargument to administration’s concern regarding the cost of offering ground campus libraries access...
to the new search engine. If one campus library provided access to a multiple database search engine while another did not, students’ experiences with the library and its resources would be inconsistent from campus to campus. This would be an inconvenience to hybrid students taking both ground and online courses, as they would have to apply different search strategies depending on the library they were using. It would also prevent the librarians from sharing resources, such as tutorials, research guides, and recorded instruction sessions, with their colleagues at other campuses.

Once the administration was on board and support was garnered for the acquisition of a new library search engine, a planning team was established. Initial discussion included Aggarwal and Contreras, representing CEC libraries, and several members from the IT architecture and software development team. Early conversations centered on whether or not CEC should seek out another federated search product or whether the library should move to a discovery search engine. In their quest for a new search engine, the planning team’s wish list contained a few crucial items, including more front-end search options, an intuitive search interface, and the ability to provide the “Google like” experience that so many students request in their suggestions and feedback to library staff.

**Discovery Systems and Federated Systems Compared**

The aim of a federated and a discovery system is the same: to allow users to search multiple databases or resources at once. However, they accomplish this goal in different ways. One difference is the way results are grouped. As Wisniewski (2010) points out, “federated search results are delivered to the user in sets of a predetermined number” (p. 56). This means that without a good amount of digging on the user’s part, they are never going to get a complete sense of the results for their search. For example, when searching through WebFeat, results from each database appeared in a box with only the twenty most relevant results listed. If students wished to see additional results from a database they would need to click a button. While this would show additional results from that particular database, other database results would no longer be visible. This loses much of the value of having a multiple database search engine. Another difference had to do with the order in which results were displayed. As Boss and Nelson (2005) explain, “…the speed with which results are returned also influences the display order” (p. 155). This means a database displaying the message “No Results Found” could be the first thing a student saw, and being new to using electronic resources, would not know to scroll further down the page to see relevant results. Even databases that appeared first on the page with results may not have been the most useful.

In comparison, as Vaughn (2011) notes, discovery systems are “huge, centralized, preaggregated indexes searched by the end user” (p. 5). The search engine is not communicating with each database in real time. Instead, the discovery system is searching “across a vast range of preharvested and indexed content quickly and seamlessly” (p. 6). Since database functionality does not influence the order of results in a discovery system, it offers a more accurate ranking of results by relevancy. Results are not grouped by a particular database, allowing users to view a wider variety of findings germane to their search. The team felt that these features unique to a discovery system allowed students to experience the full benefit of an integrated multi-database search engine.

After meeting with several vendors and demoing a variety of library database search solutions, the planning team agreed that EBSCO Discovery Service (EDS) would best serve the needs of students and faculty at the university. Several factors contributed to the decision. First, EDS operates in EBSCO’s native interface, with which students, faculty, and staff were already familiar. A benefit of using a database’s native interface is the range of options available when setting up a search. These options include the ability to choose between simple and advanced searches and the ability to limit results based on document criteria such as full text and peer reviewed. Native database interfaces also provide alternate search suggestions and thesaurus terms, ultimately taking into account both how users “will want to search and the content of the database” (Warren, 2007, p. 267). Second, the EDS “Ask-A-Librarian” feature allows users to contact the library staff directly from its search page. The emails sent through the “Ask-A-Librarian” link not only provide users the ability to contact a librarian as they conduct a search, it also allows users to include their search history. This is a benefit in the online environment as it gives library staff context and helps them begin the reference interview with a bit more knowledge of the student’s topic or needs before they even reply to the email. Third, EDS also provides users an option to create a personal
Users can create multiple folders based on any criteria they need, such as assignment or class. An additional benefit of the folder system in EDS is that it allows users to save items regardless of the database or its vendor. The planning team definitely saw these features as benefits to library users.

**Faculty**

One of the similarities between an online academic library and a face-to-face academic library setting is the importance of faculty support. As one of the biggest drivers of library usage, faculty play an integral role in ensuring library resources are used and valued. In their 2000 article, Mullins and Park point out that student use of the library is strongly correlated to “faculty expectations, assignments and recommendations” (p. 113). The more faculty are aware of the library resources, the greater the likelihood they will encourage use of the library (Thomsett-Scott & May, 2009). It was therefore important that the faculty not only be made aware of the implementation of the new search engine but feel comfortable using the library and continue to recommend the library to their students. Because of this, Contreras knew it was necessary to begin disseminating information about the new library search engine as soon as a product was chosen.

As a member of the program committee for each school within the university, Contreras was able to share information about the selection and implementation process with deans and program chairs from all AIU campuses. She did not simply inform faculty that a new search engine was being put into place. Members of each program committee were also consistently reminded of the enhancements the new search engine would bring and how they could benefit faculty. The folder feature in EDS, which allows users to save items to a folder and share those items with others, was a key selling point as faculty could use this feature to create reading lists to share with their students. While they appreciated many features of the new database search engine, this feature alone was enough to get program chairs and deans excited about EDS, as they saw the ability to share items with students a great way to provide students examples of scholarly resources that could be found through the university’s library.

In addition to updating program committees on the upcoming transition to a new library search engine, Contreras also shared information throughout the selection and implementation process with AIU’s Faculty Library Committee (FLC). The FLC, consisting of faculty members from each program offered at AIU, discussed the new search engine and the benefits it would provide to faculty. FLC members from each program took the information provided about the new search engine and shared it at their program meetings ensuring information about the upcoming change and the additional features the new search engine would provide would be disseminated to all faculty.

As part of preparation for the launch, Contreras created a short guide to introduce faculty to EDS and explain how to use some of its more advanced features. In addition, the same week as the EDS launch, training sessions geared specifically towards faculty were offered. Contreras and Aggarwal presented together and demoed the new search engine and its features. A large part of the presentation focused on how the folder feature in the new search interface could help faculty teach their students how to identify relevant, scholarly information.

**Staff Training**

Staff training was done formally and informally throughout the implementation process. Prior to the launch, permissions were given to the staff to access EDS. The staff was encouraged to play with the system, ask questions, and submit feedback to Aggarwal, who referred any necessary issues to EBSCO. EBSCO offered online classes on EDS on an almost monthly basis. While staff was not required to attend, all were encouraged to participate. Lastly, prior to the launch an EBSCO representative held an online tutorial specifically for the CEC centralized library staff.

As one could imagine, the staff was looking for several items during this time of training and preparation:
Were all the databases accurately showing results in EDS? Doing repeated searches common to the users of the library, staff compared results in EDS to results yielded by the soon to be ex-federated system, and to results retrieved by going directly into the databases.

The federated system in place had three search boxes which defaulted to the Boolean connector “and.” How would search strategies differ in EDS?

What were the visual differences? While the staff was very familiar with the EBSCO interface, what differences, if any, were in EDS?

Which new features were going to be available in the EDS system? The library was going to take advantage of the “Ask-a-Librarian” feature in EDS. As explained previously, this would allow users to email the library from within EDS, and send a copy of their search history. During training there was also discussion of the availability of permalinks, which are links that lead the user back to the item whether or not they are logged into the system. Also, library staff learned more about users’ ability to create an account, which would give them access to the folder feature discussed earlier and other personalization options.

Library staff was not just learning to use the system; they were consistently reviewing EDS to gain a better understanding of EDS from a library user’s point of view. During training, librarians focused on how EDS would provide students with what they want and need, while also trying to determine what would be confusing and where users were most likely to get stuck. The librarians used this perspective to begin creating tutorials and other materials to aid users once the system went live.

Library Reference and Instruction

It is important to understand a little bit about the set-up of the reference work in the library to appreciate the full impact of this change. Email is the most popular form of communication. In 2011, the library answered approximately 700 emails a month for AIU Online. All email replies are saved so that previously provided answers can be reused. For example, one librarian on the phone with a student can find the answer given for the same question by another librarian saved in our email folders. This system is effective and efficient for a couple of reasons. First, it saves time when repeating the same answer for the same question, which is done a lot in an academic environment. Next, it allows the library staff to build on previously given information ultimately producing the best answer for a query. Given the impending change to the search engine it is not difficult to understand the sense of enormity felt by the staff: thousands of saved email searches would no longer be reusable. To help prevent the backlog that may have occurred with needing to write each email from scratch, the library staff wrote email drafts for the most common questions that would require an EDS search.

The library has almost 60 tutorials in the form of PDF guides and Captivate videos for AIU Online students. These resources are all available on the library’s website and are also sent to students in emails. Many faculty members also post relevant guides directly in their online classrooms. Due to their heavy use it was very important to the Manager of Library Services, Michelle Powers, that the guides be ready for students immediately upon the launch of EDS. To ensure that the guides would be ready for students, library staff first divided the guides among themselves by subject area. A revised guide was created in advance of the launch of EDS. On the day of the launch, guides showing WebFeat searches were removed and the new guides with EDS strategies were posted. This system worked very well. It gave staff a feeling of readiness as the launch date for EDS was drawing near and it also provided staff the opportunity to become more familiar with how EDS would be used in actual searches. At the time prior to launch, the library staff in place was unfamiliar with Captivate software. Therefore, they could not edit existing Captivate tutorials for EDS content as they were able to do with the PDF guides. Because of this, approximately 15 video tutorials had to be deleted from the AIU library page. In the months following the launch of EDS the necessary training for Captivate was conducted and staff began creating and replacing the lost videos.

The library offers instruction at the start of every AIU session, which occurs every five weeks.
These classes demonstrate how to conduct library research, and focus heavily on using the databases. A main strength of these classes is that they are recorded and recordings are available for up to six months. Links to recordings may be sent to students, faculty members also post them in their classroom, and for classes not offered every session, archived links from previous library tours are shared on the library homepage. Naturally, with the change to the EDS system, these recordings would no longer be useful. To help alleviate the problems of not having usable archived library tours, Contreras offered several instruction sessions focusing on the use of EDS the week of the launch. To ensure all students had an opportunity to learn more about the new system, every active student was sent an invitation to these instruction sessions and links to their recordings were available on the library and campus homepages. These EDS-specific library classes were conducted as a stopgap until the next session’s tours incorporated EDS.

Launch Day

On the morning of August 1, 2011, EDS went live to the 17,000 students at AIU Online. The library team was familiar with the system, library research guides were updated and made available, EDS would allow users to retrieve results more successfully, and new features would enhance the user experience. While these were all very positives there was a strong initial backlash by students. Unfortunately, due to circumstances beyond the control of Contreras, Powers, and Aggarwal the launch was done in the middle of the session. Students having started to use the library to research assignments found a new system in place when they returned to the library on Monday. Although EDS had many positive features, students under pressure to complete assignments, and already struggling with using an online library, were not pleased. Here are some examples of negative AIU student comments in the first two days of the launch:

“[I] am really lost.”

“I found the new set up difficult to use.”

“…had an article I was working on last night [and I] went into [the] library and it’s different…”

“Hello, I have been a student here for nearly three years. So you might understand my consternation when I went to find some literature, in a specific field, only to find that my favorite library has somehow done away with the usual construct that I have been so used to navigating.”

Reference staff quickly began to lose enthusiasm they had for EDS, lamenting the change, and wishing for the old system. Though they knew EDS was a vast improvement, they were familiar with the workarounds for WebFeat and knew how to lead students through the process to get results. Now, they were faced with angry students, the necessity of addressing each new reference question from scratch, and figuring out new ways of explaining how to do a search and access results. Technical problems, to be expected with the implementation of any new system in an online environment, did not help matters. Some databases were inaccessible for a few days, and some features of EDS were not working properly at the time of launch.

Within a few days however, staff attitudes improved and student feedback became more positive. Here are some examples of positive AIU student comments in the first few weeks of the launch (August 5, 6, & 11, 2011):

“Love it! Love it! Love it! The new look and how easy it is. Thank you!!!”

“I just took a look at the new search tool and I need to say THANK YOU! It is incredible and I love it! Before the change I hated to use the library and avoided it as much as possible; but now I love it. Again, thank you so much.”

“It is easy to use and easy to find what you need rapidly.”
“I would like to comment on the new library search features. I have been taking courses for over a year and very rarely used the library because of the difficulty in finding information. The new search feature is wonderful - I typed in my keywords and what I was looking for came up. The new user friendly site will help me much more with my studies. Thank you for making this change - I am very happy!”

“I just wanted to say that I like the new system better than the old. It is much easier to me to find what I’m looking for.”

By this time the staff had learned better methods for explaining the search process in EDS. Students were noticing the benefits of EDS such as better results, ease of use, and new features. Also, technical problems were resolved, and student and faculty training was being conducted.

Approximately three weeks following the implementation of EDS the staff had a gathering to celebrate the success of the launch. Powers wanted to reward the staff for their hard work, appreciating the anxiety and frustration that was dealt with, make an apology, and play a little game. Powers had been with the library for four years at the time of the EDS implementation, while members of her team had been there ten months or less. Because the majority of the staff had been with the library for such a short time, Powers realized she failed to share stories of previous change that would have better prepared them and provided them a point of comparison. She also apologized for not anticipating the negative feedback encountered by the students.

The game was to have each staff member name two items, either positive or negative, about WebFeat or EDS. The one rule was that they could not repeat what someone before had said. There were two anticipated outcomes to this exercise. One, it was a means of saying “goodbye” to the old system. Any transition, no matter how positive the outcome may be, still means there is a loss. In this case, the library was losing WebFeat, and though the staff didn’t always like it, they knew it. In his work Managing Transitions, Bridges (2009) explains, “…it does little good for you to talk about how healthy the outcome of a change will be. Instead, you have to deal directly with the losses and endings” (p. 24). Powers’ second anticipated result of the exercise was that the staff would identify more positives about the new system than the old system, reminding them of the value of the work they had put in. Indeed, this was the outcome. At the end of the go around there was a nice long list of positive things about EDS and a clear list of the drawbacks of WebFeat. The few items that were felt would be missed in the old system were discussed as possible implementations, or determined to be impossible. Acceptance of EDS, with its changes, its benefits, and one or two drawbacks was on its way to being complete. Though the library would continue to learn more about using and promoting EDS, it was no longer the “new system,” it was “our system.”

What Was Learned

“Experience is the name everyone gives to his mistakes.” Oscar Wilde

No process of change would be complete without considering what could be done differently in the future. The authors have identified three things that would be given more attention when implementing future changes to the library:

Earlier outreach to students

The library staff was so long-involved with the planning and testing of EDS that for them it was a culmination of a year’s worth of preparation. For students, however, it was a sudden change. The library had been afraid of announcing a change too early. In the future, this would be balanced a bit more on the side of saying too much rather than too little. Perhaps the library would have gotten a better response from students had they, like the staff, been excited by the new system rather than surprised by it.
Remembering fear of change

Working in an online environment where information and resources quickly change, and also working in a fast-paced academic environment, the CEC library staff is extremely accustomed to change. However, being open to change is not the norm. For our students, the majority of whom are adult learners returning to school, dealing with any change is a big thing. The library needs to keep in mind that a negative reaction is to be expected and be better prepared to quickly move students from their feelings of fear and incompetence to acceptance and understanding of any new library tools.

Playing “the game” earlier

While the game of listing the positives and negatives of the old and new systems seemed to help the team, it probably would have been better to perform this earlier. For one reason, it would have been more appropriate to say goodbye to the old system prior to its departure; for another reason, it may have been more beneficial for members of the team to have a clear list of the positives regarding the new system before experiencing any negative user feedback.

From the beginning, Contreras, Aggarwal, and Powers continually communicated and collaborated to ensure that the needs of various library users were met. All involved in implementing this change learned from the process. Through this experience they made sure to make note of what went well, what important information was overlooked, and what new tools, techniques, and skills they can utilize when planning for future change. Although AIU Online and the CEC library have the unique challenge of working in a completely online environment, the lessons learned about faculty involvement, staff training, and student reaction were beneficial to prepare library staff at ground campuses as well as other online campuses. In conclusion, the library has benefitted not only by having a discovery search engine, but by working successfully through the process of change.
References


A Model for Designing Library Instruction for Distance Learning

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Providing library instruction in distance learning environments presents a unique set of challenges for instructional librarians. Innovations in computer-mediated communication and advances in cognitive science research provide the opportunity for designing library instruction that meets a variety of student information seeking needs. Using a systematic and dynamic model when designing library instruction can increase student search proficiency.

Introduction to a Systematic Library Instruction Model

Distance students often interact with instructional and research librarians through computer-mediated communication (CMC). The body of research enumerating and exploring variables that exhibit a potential influence on computer-mediated communication is growing. The increasing incidence of online learning has prompted a plethora of studies on how to design instruction that learners will engage with and that will prompt higher order learning. Research supports an expanded role for librarians in this situation. Engagement and learning strategies that promote productive inquiry in learners, minimizes distractions, attends to affective skills, and promotes the continual development of information search skills are some aspects of good online instruction.

The library instruction model (LIM) proposed in this paper is based on systems and cognitive learning theories and principles typically used by instructional designers when designing instruction for a variety of academic domains. Additionally, when delivering information services to students in distance learning environments, a model that incorporates a process approach will best serve students and instructors (Kuhlthau, 2004). Inherent in all of these theoretical propositions is astute attention to the affective perception, or attitudinal engagement, of the student.

Engaging the attention of distance learning students can be challenging. Providing them with appropriate levels of library and information instruction online can be daunting. Students approach research activities cloaked with two distinct conditions that impact their success: They lack experience in conducting research and they are frustrated in their attempts to produce work that aligns with the parameters of assignments. These are skills and attitude issues respectively, and the failure to address both can impede progress toward competency in research. The distance learning student’s feelings of isolation exacerbates both conditions. Instructional and reference librarians can incorporate the LIM into classroom and reference services to provide students with resources they need at the point of inquiry.

Librarians can learn to recognize motivational aspects that affect student’s progress in information seeking activities. A design framework is suggested for distance learning students and the design of relevant instruction that maps appropriately to the various stages of information seeking is proposed. The LIM design framework suggests a way of designing the presentation of instructional interventions to use when students become uncertain of how to proceed in a research project.

Often library instruction is considered from a perspective of available resources and ways in which to point students toward accessing those resources. The LIM design framework considers the student’s needs first then points them toward appropriate resources and at the same time acknowledges and validates the impact of affective responses operating in the student.

Background on Student Cognitive Functions and Motivation

Vygotsky proposes that dialogue leading to learning is processed through two kinds of interconnected communications (as cited in Wells, 2007). One’s inner thoughts comprised of meditative
thinking such as reflection, propositioning, and conceptual questioning are one kind of communication. These are the unseen active processing activities often referred to anecdotally as cogitation. A second kind of thinking is in externalizing these ideas, propositions, and conceptual beliefs and negotiating meanings through debate, discussion, and synthesis in purposeful public dialogues. In the classroom these externalized parts are represented in coursework by the presentation of written documents, and they constitute what is considered to be evidence of learning. Together these two kinds of communication constitute an episode of learning. Dewey refers to this process as introspective learning within a common cognitive enterprise (as cited in Hawkins, 2002). Active processing of personal knowledge representations and concomitant social discourse usher higher order thinking skills. Scardamalia and Bereita (1999) propose thinking as an active process characterized and operationalized through inquiry, debate, and explanations. Socially mediated dialogue assumes a pronounced role in operationalizing higher order thinking skills. The LIM incorporates student to instructor communication as a major aspect of online library instruction.

Communication theory has important implications for designing library instruction. The basic components of sender, receiver, message, and medium engage collaterally with the biological, cognitive, and social-psychological perspectives of instructional design. Communication theory compliments instructional design’s philosophical, scholarly, and practical concerns when designing, developing, and providing instruction. There are two basic philosophical perspectives of communication. Rational-empiricism contends that knowledge acquisition is a logical process based on data consumption and reasoning. This reflects the transmission and behavioral perspectives of communication. The constructivist philosophy places emphasis on the human aspect of knowledge building. This philosophy sees communication as a social process influenced by environment and culture. The LIM relies upon the constructivist philosophy and views discourse as an important component of library instruction.

The communication channel proposes a mediated aspect of communication (Richey, Klein, & Tracey, 2011). A channel is mediated through visual images, sound, and text, and the learners’ concomitant ability to use information presented in such messages is a concern when designing instruction. Attention characteristics and cognitive load impact learning. When designing instruction, designers manipulate mediated aspects of the communication channel to optimally meet learning needs. Good practice of this skill results in library instruction that is usable and effective. Additionally the capacity to develop individualized instruction can be leveraged through attention to cultural differences and the use of customized content that is suitable for deployment in global learning environments. Computer-mediated communication presents an opportunity to design “a la carte” instructional modules that are reusable and easy to update.

**Multimedia Design**

Computer-mediated communication is broadly seen to be any human communication that takes place during the process of engaging with other humans (Thurlow, Lengel, & Tomic, 2008) and email and online discussions are a type of CMC. Videos, texts, blog posts, and images comprise multimedia content that are routinely sent through computer networked systems in order to communicate with other humans. This type of communication has increasing implications for how teaching and learning are conducted. Clark and Mayer (2008) have written an entire book on e-learning that provides scientific evidence supporting the efficacy of using multiple forms of CMC when designing instruction. These multiple forms of communication enable elaborate and effective ways of communicating beyond the traditional in-class instruction. The LIM makes good use of the nine principles of multimedia instruction found in Clark and Mayer (2008).

Inventions and innovations in computer technology have improved accessibility to programs and products that facilitate human communication processes and that can be enlisted into teaching and learning scenarios. Today instructors, learners, and content interactions are mediated through computer technologies such as personal computers, cellular phones, and mobile computing devices. Innovations in technology have borne new ways of communicating that can be visual, vocal, or textual.

The complexity of the human brain in the process of learning is not so easy to harness into the role
of active learning. Regarding online learning Clark and Mayer (2008) acknowledge three e-learning architectures coupled to three types of learning: (a) a receptive architecture supports information acquisition; (b) a direct architecture supports the strengthening of performance responses; and importantly for this study, (c) guided discovery supports knowledge construction through interactive collaborations. Guided discovery for facilitating knowledge construction can be supported through the use of multimedia. Multimedia artifacts leverage the dual channels for processing visual and verbal materials which lessens cognitive load for learners (Clark & Mayer, 2008). The nine principles of multimedia learning provide a map for designing effective online instructional modules that reduce cognitive load.

Regarding online learning Verhoeven and Graesser (2008) ask, “How can cognitive overload be minimized during processes of information search, document comprehension, knowledge integration, and written documentation?” (p. 292). Online communications serve the two functions of community development and individual cognitive processing function. Individual cognitive processing is comprised of several cognitive component processes: Students read the materials to gain comprehension; they engage in an internal rhetorical process when writing about what they comprehend; and finally, through reflection they take a greater understanding of the materials away. Various outcomes are expected from the use of online communications, such as support for various learning styles; the development of a learning community as the course progresses; the exertion of higher order thinking skills in the pursuit of problem solving; and the elaboration of cognitive schemas through argumentative, discursive, and reflective writings.

A Library Instruction Model

This model is derived from the philosophies and activities found in Merrill's First Principles of Instruction (Richey, Klein, & Tracey, 2011), Reigeluth's Elaboration Theory (Reigeluth, 1999), and the author's own experience with developing instruction for and teaching undergraduate information literacy skills. It is a theoretically driven model based on a cognitive constructivist framework. It is learner-centric and focuses on interactions that contribute to developing a strong knowledge base and eliciting higher order thinking skills.

Learner Characteristics and LIM

To solve the complex issue of providing instruction at various knowledge levels to students with multiple levels of experience and knowledge, LIM integrates some aspects of the model structure from Reigeluth's Elaboration Theory (Tennyson, 2005). Elaboration Theory proposes that students should be first presented with a signal representation or product that is an exemplar of what they will be learning. Reigeluth calls these products epitomes. As such, in LIM, epitomes are learning episodes and an overview of the instructional objective is presented to show students what they will be learning. In this manner learning is focused on achieving a version of the represented epitome. Kuhlthau (2004) describes a behavior pattern often found in students seeking information: Students experience a range of feelings, thoughts, and actions during the process. They range from feelings of confusion to confidence and satisfaction in a recursive pattern that changes according to the stage of information searching. Instructional librarians familiar with these stages, and cognizant of the student's level of experience and knowledge, can provide appropriate and timely interventions.

The Affective Aspect of Learning

Learning engagement is enhanced when instruction is presented with attention to creating an experience that is coherently connected to the overall learning goal (Parrish, 2008). LIM is concerned with developing a learning experience that is aesthetically charged in the design phase so that learners anticipate content, are impelled to learn, and gain a feeling of satisfaction from completion of the course. These are all motivational concerns and a motivational component should be considered for each information seeking stage (Parrish, 2008). Motivation can often be instilled through common discourse and questioning between the student and the instructor.

The LIM subscribes to those guidelines presented by Keller (1987) for aligning instruction with positive emotional outcomes that lead to motivation. Keller's ARCS model of motivation is concerned with
gaining the attention of the student, presenting instruction that is relevant to the learning needs, encouraging feelings of competency, and promoting a level of learning achievement that corresponds with student's expectations for satisfaction in learning. Byrnes (2001) further suggests that the role of emotions is important to learning, a significant theory that supports the importance of developing instruction that pairs positive emotions and achievable goals. When learners experience positive emotions as a result of having accomplished goal oriented work they will persist in replicating the experience.

**LIM Analysis Phase**

Analysis of the LIM is conducted in two phases in which the problem analysis phase describes the nature of the problem and the instructional content phase in which instructional components, subcomponents, and activities are identified (Davidson-Shivers & Rasmussen, 2006). During problem analysis, the nature of the instructional problem is delineated. The librarian should try to discover the information needs of the course. Some data that can provide information about the problem are grades, tests, and interviews with instructors and students. A design document should be developed starting with the first phase of analysis. The design document serves as a collection point for the questions asked, organizes sources and supports for using the LIM, and documents a proposed solution. The design document becomes a valuable instructional tool and can be used to track improvements in the instruction.

In the problem analysis phase it is important to establish the stakeholders, available resources, instructional setting, and what changes precipitated the need for instruction. For instance, a new or revised course offering may have prompted a request for specific library instruction. The instructional librarian should conduct interviews and obtain documents that will expose course design needs. Some attempt should be made to discover and explicitly identify the desired information literacy needs.

The librarian should affirm that the LIM is an appropriate model for use in the course by asking questions about the learning environment. What knowledge, skills, and attitude does the student possess? Is a student-centered approach appropriate and is the librarian comfortable using such a style for teaching? Time constraints regarding the design and development of learning modules and the collection of content should be considered during analysis.

**Implementation of LIM**

The increase in online learning is changing the way that librarians provide information literacy instruction. Brown, Murphy, and Nanny (2003) suggest that traditional librarian instruction models no longer suffice to provide the kind of instruction that students today require. They cite student's technological sophistication as one characteristic that is changing information literacy needs. An expansion of the body of knowledge regarding cognitive load and multimedia learning are making an additional impact on how instruction is designed for face-to-face and for online learning (Sweller, 2005). Instructional models in most academic domains in the U.S. have changed as a result of research progress in these areas. Library instruction models should be developed to coordinate with new modes of providing instruction.

Kuhlthau (2004) proposes that what is relevant to students when they begin an information inquiry may not be relevant at other points in the process and will almost certainly be different as the process is exited. This kind of inquiry process is best served through a system that allows for dynamic instructional assistance and that supports student motivation. When students and library instructors are at the same point of inquiry, when discussing information needs, there is a greater chance that students will use the instructional model because it is relevant to their needs.

The LIM considers the student's need at the moment, the available instructional resources that will satisfy that need, and the communication flow between student and instructor. This communication channel is engaged for ascertaining student inquiries, providing instructional input, and for feedback and motivational support. The librarian's role becomes one of designer, bibliographer, counselor, and presenter of epitomes, in a manner that is sensitive to phases of information seeking.
The librarian facilitates information instruction by directing students to pertinent modules so that each learner attains optimal cognitive understanding and elaboration. The instructor points out contextually appropriate scaffolded instruction available in knowledge bases, tutorials, guidelines, and instructional components that incorporate faded instruction. Faded instruction includes instructional modules wherein a fully worked out example is provided and followed by practice examples in which students must complete the work. This type of online learning provides optimal opportunity for learning to occur (Clark & Mayer, 2008). In this manner students begin with high assumptions for their own cognitive engagement which is persisted through structures of the LIM.

The instructional librarian should consider the cognitive and affective state of the student. For some students there will be a need for motivational modules with many faded instructional modules. Other students will be self-motivated and therefore need access to direct instructional modules. Students enter specific cognitive phases that include information seeking, information gathering, and information giving (Krikelas, 1983). Concomitant with these phases are the intersecting roles played by the instructional librarian: designer, bibliographer, instructor, and facilitator. Kuhlthau (2004) refers to this intersection as a zone of intervention and points to the importance of the librarian as a mediator for helping students progress through the information search process.

Librarians acquire high levels of expertise in conducting information searches. Time constraints play a part in the difficulty of making these skills explicit to students. Approaching library instruction through a process model such as LIM maps skills instruction to immediate student needs so that time constraints are averted. Effective instruction in library search skills relies on the intuitive teaching practices of expert librarians. The unstructured problem environment in which library search skills are taught calls for the “reflective practitioner who understands the dynamic process of learning from information and incorporates that awareness into all aspects of intervening with users” (Kuhlthau, 2004, p. 202-203). Three components are employed in Kuhlthau's information search process model: realization that searching is a faceted prospect, the communication process upon which the teacher/student interaction depends, and instructional sensitivity capable of mapping interventions in a timely manner to instructional needs. An additional component in the LIM is recognition of appropriate CMC or multimedia applications to meet instructional needs. These four instructional components are the proposed interventions that instructional librarians can deploy.

Conclusion

Effective instructional models are systematic, dynamic, purposeful, and useful. The usefulness of a model should be ascertained through periodic summative assessment. In the LIM learners produce many artifacts that can be used for both summative and formative assessment. Summative assessment provides an opportunity to improve the model and the instructional affectivity of the instruction. Formative assessments show instructors how well students are learning. They serve as touchstones for goal setting. Assessment in LIM is systematic and perpetual with learning outcomes assessed on artifact characteristics and the consequential adjust of sequence and design that lead to improvement of the model.
References


Real Time with the Librarian: Using Web Conferencing Software to Connect to Distance Students

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A pilot program to provide real-time library webcasts to Regis University distance students using Adobe Connect software was initiated in fall of 2011. Previously, most interaction between librarians and online students had been accomplished by asynchronous discussion threads in the Learning Management System. Library webcasts were offered in targeted courses in addition to asynchronous interaction through discussion forums. Students had the option to attend the live webcast or view a recording of it later. Students were surveyed about their webcast experience and results indicated that despite experiencing occasional technical difficulties, they found the library webcasts helpful and relevant to their research assignments. Encouraged by the feedback from students, the authors are looking to expand the use of library webcasts into other aspects of their work serving distance students.

Introduction

Regis University distance librarians have been asynchronously embedded in online classes for a number of years, but we have wondered if we could do a better job reaching and instructing distance students if we were able to offer real-time instruction. Our experience online has varied from forums that are lively with student-librarian interaction to others where it’s difficult to generate much discussion or engage students at all; it seems that not all asynchronous interaction is successful or even satisfactory in accomplishing learning objectives related to library instruction. Although the ground-based classes follow the same syllabi as their online counterparts, we have noticed a significant difference between providing library instruction face-to-face and what we are able to provide asynchronously through posting content and links to library tutorials (Betty, 2008). We embarked on a pilot project in the fall semester of 2011 to promote and provide real-time webcasts using Adobe Connect web conferencing software to online students. Web conferencing allows us to meet and communicate with students in real time through audio and text-based chat, and provide demonstrations through online screen sharing so that we can do the same kind of instruction we would normally do in the classroom.

Background

The Regis University Library Distance Services department consists of two librarians charged with providing instruction and other services to distance students at six extended campuses (five in Colorado and one in Las Vegas, Nevada), and to students in online courses. The students we serve are primarily working adults enrolled in the Regis College for Professional Studies (CPS). Due to successful marketing on our part and an increase in online course offerings, the number of library instruction sessions provided by the department has increased 300% in the past ten years—both a measure of our success as well as an indicator of how close to the breaking point we are. Our marketing scheme has been to review CPS course descriptions in the university bulletin and identify likely undergraduate and graduate courses to target for library instruction, then contact course instructors directly to offer our services. The target courses represent the best opportunity to introduce relevant library and research instruction in a timely manner at the point of anticipated need. Instructors are identified and contacted in advance of each 8-week session, which allows us to maintain established relationships with known collaborators, bring new instructors into the fold—especially when they realize that our presence in courses is the standard among their peers—and to balance workloads and avoid many of the last-minute requests that we would normally receive.
In the spirit of the ACRL Standards for Distance Learning Library Services (ACRL, 2008), we wanted to provide the same level of service to online students through webcasts that we provide face-to-face to students at our extended campuses, even though it would mean adding more real-time commitments to our already crowded instruction schedules. We had previously offered a few chat sessions within the Learning Management System (LMS) at the request of instructors, which required giving students detailed instructions about opening a second browser window to mirror the searches we were describing while continuously enabling chat, as well as having the course instructor standing by to offer technical assistance via phone. We were unable to share screens, so blindly plowed ahead and hoped that students were navigating on their own to whatever search screen we were discussing.

As we started to receive more requests for synchronous online instruction, we became aware that our university licensed Adobe Connect web conferencing software, which promised to provide a robust tool to meet real-time instructional needs outside the LMS platform. In the summer of 2008, we received basic Connect training. Each of us was set up with our own Connect “meeting room” so that we could schedule and provide meetings/instruction, and then, along with two other librarians, we tested our skills and the system by conducting a few practice sessions with each other. We used Connect intermittently, at the request of instructors, in addition to the asynchronous discussion forum before deciding to formalize offering and providing library webcasts.

Beginning in the fall of 2011, our marketing messages to online instructors included the offer for real-time library instruction. The response was overwhelmingly positive, with most instructors signing on for both asynchronous participation and a library webcast. Our aim was to schedule library webcasts mid-week when we are embedded in the class forum, so that students can be alerted early in the week in the discussion forum and via course e-mail to give them access information, and then allow us time to follow up with them afterward (see Appendix A). At Regis University, given the geographic dispersion of our online students, synchronous activities cannot be made mandatory in the online classroom, so we record each session and make it available online for streaming shortly after the webcast by posting a link in the discussion forum.

The Library Webcast Experience

In the fall of 2011, the two of us presented 11 webcasts for a total of 22 course sections, and had real-time attendance of about 21% of the students (54 out of 260) enrolled in the courses. The courses included introductory courses in business, communication, and adult education, an upper division undergraduate finance class, and pre-capstone research courses in social science, criminology and business. Webcasts were presented at 7:00 p.m. Mountain Time, since we normally see more traffic in the class forums in the evening hours, suggesting that that time allows reasonable accommodation for most working adult students in U.S. time zones.

Connect meeting rooms are configured to allow webcast participants to enter as guests. When logged in as a presenter, a notice appears each time an attendee requests access, and at that time the presenter can allow the attendee entry in to the meeting room. As suggested by Anderson et al. (2006), the promotional messages sent to students encourage them to log in 15-30 minutes before the start of the webcast, so that they can become familiar with the meeting room interface, and giving time for the presenters to make sure there are no technical issues. In order to maintain privacy, we ask that students log in using only a first name, since recorded sessions include chat conversations. When new students enter the meeting room, we ask them by name if they can hear us, and ask them to respond using the chat feature. The ice can further be broken by asking students where they live, which usually evolves into a discussion of comparative weather conditions. We make use of a polling module in Connect that allows us to ask a simple question with multiple answers. A preferred one that we use at the beginning and end of the presentation, in effect a simple pre- and post-assessment, is how comfortable students feel finding academic journal articles using the Regis Library, with response choices ranging from very comfortable to not at all comfortable.

As presenters, we have used headsets, webcams and stand-alone microphones for narration. We use webcams at the beginning while students are logging in to the webcast and when we are making
introductory remarks, believing it is useful to put our human faces on the session. Once we begin the presentation, we pause our webcam video streams, clear the chat window of any ice-breaking conversation, and begin recording. We made the decision early on, based on advice from our Information Technology Services trainer, to have students communicate with us using the meeting room chat feature rather than a webcam or microphone so that we can simplify communication and minimize bandwidth. Even though other institutions have successfully used two-way screen sharing as well as enabling student audio (Barnhart and Stanfield, 2011), we were concerned that too much time could be consumed trying to configure and troubleshoot microphones and webcams for multiple attendees, assuming they have access to such technology. We also believe that using chat levels the playing field so that all attendees communicate in the same way.

Our library webcasts largely mirror what we cover during in-person classroom presentations, but we preface our online presentations with information provided in our first post to the class forum, directing students to relevant library subject guides (LibGuides) and tutorials. Library webcasts are typically 45-60 minutes in length, and address subject-specific resources relevant to the course and its assignments, selecting resources through our LibGuides, search strategies in a relevant database, the library catalog for online books, and services such as interlibrary loan. However, in an online meeting room that relies on chat for communication, a presenter cannot rely on communication via non-verbal cues that convey understanding or confusion. We have found that the absence of face-to-face dialogue means more time needs to be dedicated toward communication between librarian and students to assure that the points of emphasis are understood. As a result, we have noted that in our initial library webcasts we were not always able to cover the desired amount of material, an observation shared by other librarians engaged in similar practices (Barnhart and Stanfield, 2011).

As students enter the meeting room at the start of the webcast, we use the discussion mode meeting room set-up, which is one of three default meeting room set-ups (discussion, sharing, collaboration) included in the Adobe Connect software. During the webcasts, we utilize the sharing mode to broadcast our computer desktop or specific software applications, but we make a practice of pausing and returning to the discussion mode every so often for reflection and a brief period of questions and answers. We reactivate our webcams and return again to discussion mode at the end of the presentation for final questions and debriefing.

Although real-time attendance is not usually high relative to total course enrollment, conversation is usually lively and students seem very attentive and appreciative of the presentation. Sessions normally end with students typing in their thanks, and their un-prompted observations of how helpful the presentation will be in helping them complete their research for the class. Some students return to their class forums and post their observations and recommendations to fellow students after we post the link to the recording: “I just wanted to say if you missed this, please watch the recorded version. I wish I had this information at the beginning of my program. It would have made things much easier to research!”

**Challenges and Observations of Conducting Single Presenter Library Webcasts**

In conducting regularly scheduled library webcasts, we have encountered some challenges that are specific to our institution, but others that are likely to be shared by any librarians undertaking similar services using any web conferencing software. As sole presenters and moderators for each webcast, each of us must cover the needed library instruction and perform the duties of meeting room moderator, which include monitoring participants and chat, operating the various applications associated with the meeting room, and troubleshooting technical issues. One drawback to the Connect software is that once the presenter enters screen-sharing mode, the chat module is no longer visible on the presenter’s screen, a situation we have mitigated by logging in separately as a student on a second monitor so that we can be aware of exactly what the students are seeing and hearing. This modification is especially important since in some early webcasts a software glitch caused the audio to cut out as soon as we started screen sharing. Connect allows sharing of desktops or of applications, but the disadvantage of sharing the application—even though it has other advantages in terms of navigation—is that messages entered in chat do not pop up on the presenter’s screen. Therefore, if the presenter is sharing the application and the audio goes out, there’s no way to know unless a second monitor is displaying the webcast as seen by the students. The
library literature suggests that when conducting webcasts, the best practice is to have the presenter focus solely on presenting, and have a second person logged in to the meeting room acting as moderator, although in situations such as ours, this model would not allow for us to cover all of our real-time commitments (Anderson et al., 2006; Bell & Shank, 2006).

To continue to offer library webcasts under our current model raises concerns about the long term sustainability and scalability of the project. In general, librarian participation in online courses is well received by both instructors and students, which leads to frequent and additional requests for our services. We may face a time when we have to cap the number of webcasts our department can offer unless we can recruit additional librarians to adopt the practice. One potential time-saving benefit of webcasting is that we can include students at remote campuses in meetings along with online students taking the same course, therefore combining together even more sections and reducing the time we currently spend on the road.

Another potential concern is that an increasing number of students are using tablet PCs and smartphones in the classroom and online, which leads to questions about interoperability of the meeting room software across multiple platforms. For example, the Adobe Connect meeting room utilizes Flash technology, but streaming Flash media is not natively supported by the Apple operating system used on iPhones and iPads, so students using Apple devices need to download a separate app. Presenters also need to consider issues related to display (screen resolution), bandwidth, and audio/video configuration, although good preparation doesn’t always prevent problems. For example, one evening’s webcast was stymied by university network issues, resulting in students being repeatedly disconnected from the meeting room. To their credit, they kept coming back! Lietzau and Mann (2009) noted that in a webcast involving students abroad, over 50% reported some degree of technical problems, so it’s likely that network problems on one end or the other will likely continue to present a challenge to real-time instruction. A few non-technical issues to consider include identifying the best time to schedule webcasts for maximum participation, how to better promote participation and interaction in the meeting room, and privacy.

Although we had received real-time positive feedback from students participating in the webcasts, we wanted to hear more from them about their experience, as well as from those who might have watched the recordings later, and those who didn’t participate or watch at all.

Survey Analysis

A brief survey was developed and administered using the online survey tool Zoomerang (see Appendix B). We solicited participation by posting to the class forums in the last two weeks of the term, encouraging everyone—even those who did not attend the webcast or view the recording later—to participate, and held a drawing for a $25 Amazon gift certificate as an incentive. There were 47 responses to the survey, representing 18% of the total number of students enrolled in the courses, although 79% of the respondents had attended a webcast or viewed the recording later. Of the 47 respondents, 24 indicated they attended the webcast in real time, 13 viewed the recording afterward, and 10 did not attend the webcast or view the recording. Of the 10 respondents who did not attend the webcast or view the recording, five indicated they were already comfortable with finding library resources while the other five experienced technical problems that prohibited them from either attending or viewing the recording afterward.

The overwhelming majority of students who attended the webcast or viewed the recording did so from home; one participated from a hotel room while on a business trip. Nearly two-thirds attended the webcast using a laptop computer and the remainder used a desktop computer, suggesting that our initial concerns about the display and accessibility of the webcasts on tablet and hand-held mobile devices have not yet come to fruition. Regardless of the devices used, save for the few respondents who indicated technical troubles, our online student population seems to possess the necessary technology and bandwidth to participate in the webcasts.

Four features of the online meeting room were evaluated using a five point Likert scale (very good, good, okay, bad, very bad): signing in, visibility, audio, and chat. No one who either attended a webcast or viewed a recording afterward provided a rating of “bad” or “very bad.” In fact, the meeting room sign-in, visibility, and chat features were mostly rated as “very good,” while the audio feature was
more likely to be rated as “good.” Only a small percentage of respondents rated the meeting room sign-in, audio, and chat as only “okay.”

Nearly 70% of respondents rated the usefulness of the webcasts as “very good,” with most of the other replies falling under “good.” At the end of the survey, students were asked to submit any other comment or suggestions. Most of the 26 students who supplied comments had positive feedback, such as one who stated: “I found this webcast to be extremely informative for me - with this being my first experience with online classes and Regis, it truly provided me with the information I needed to succeed.” Another praised the interactivity of the presentation: “I thought it was a good presentation. Lots of questions were answered as the material was presented. The chat feature was good.” The ability to watch a recording later elicited this comment: “It is hard to know what to ask, so I like that the webcast could be pulled back up to watch again.” A small number of students indicated they experienced technical issues related to the meeting room sign-in process and audio quality. Even so, technological challenges did not seem to negatively impact their overall impression of the webcast: “There were some audio bugs during the session but it really did not affect the overall presentation.”

Once the survey was launched, we thought of a few questions we would like to have asked and will ask in future surveys. Foremost, we would like to know more about the nature and severity of the technical problems experienced so that we can be more proactive in preventing them or assisting students who are having problems. It might also be useful to know the time zone of the respondents and whether there would have been a better time for the webcast, although unless students were responding that they would prefer to have the webcast during our regular business hours, it’s unlikely we would be able to do much more than we currently do to accommodate them.

What Next? Advancing the Use of Library Webcasts

The positive feedback we received has emboldened us to consider how we might further utilize library webcasts. Web conferencing software holds the potential to help meet several of the goals outlined in the ACRL Standards for Distance Learning Library Services (ACRL, 2008), particularly those sections that address “designated space for consultations,” “electronic communication tools,” and “promotion of library services to the distance learning community.”

The use of online meeting rooms to facilitate regularly scheduled “open house” library orientations or hands-on research workshops is one use we are considering. Regardless of how library instruction is delivered, students frequently indicate they would have benefited from receiving it earlier in their academic careers. For example, one student commented in the webcast survey: “It needs to be done in more classes. That information would have been very helpful a few semesters ago!” Optional online workshops that mirror a similar well-attended one we offer on campus twice a semester might be one way to reach distance students closer to their perceived point of need. One feature of the Connect meeting rooms we have yet to utilize that could be useful in this context is the collaboration mode, which offers the ability to create breakout groups. We are also aware of librarians and teaching faculty who are using online meeting rooms as a way to provide “office hour” consultations with remote students (Handler, Lackey, & Vaughan, 2009).

We plan to use the online meeting rooms as a back-up to regularly scheduled on-site instruction sessions held at satellite campuses, located from 12 to 70 miles from the main campus, particularly during hazardous driving weather. In addition to achieving efficiencies with little change to current practices, virtual meetings have the potential to conserve travel funds. Even though expansion of services using the online meeting rooms could create increased workloads and concerns about sustainability, their use could result in time and money savings when applied to existing services, and negate some of the challenges associated with expansion.

Another possibility would be to use webcasts as a marketing tool, not only for the library, but more specifically for the library’s role within the College for Professional Studies. We have had a discussion with the CPS Director of Marketing and Communications about the use of the library’s digital video tutorials and online meeting rooms as potential marketing materials. The positive feedback from
students regarding the library webcasts suggests that this service could be a means by which the college can distinguish itself from competitors.

**Recommendations**

While we have been providing students with written instructions via course email and discussion forums for connecting to and navigating library webcasts, based on our experience and the feedback we received from the survey we believe those instructions should include a link to a video demonstration of the online meeting rooms. We hope that having a video tutorial will diminish some of the technical issues encountered by some attendees and that it would enable a greater degree of interaction during the webcast since less time will be needed for students to familiarize themselves with the online meeting room interface.

As noted earlier, we recommend logging in to the online meeting room using a second monitor, laptop or tablet PC using the same log-in process as the attendees. Viewing the online meeting room from the attendee’s perspective can help the presenter quickly identify and address technical or usability issues in the absence of a second presenter or meeting room moderator, and has the added benefit of allowing to test the compatibility of the meeting room configurations across different platforms.

We are also mindful of protecting student privacy. The names of webcast participants are prominently displayed on the Attendees List module in the online meeting room for all to see, and remain part of the meeting recording. Even though the instruction we deliver and the discussion associated with it rarely, if ever, touches on sensitive subjects or divulges personal information, we believe it is important to de-identify real people from the comments they make or questions they ask. Even though we request that attendees use only their first names when logging in to the webcast, some students still use their full names. We recommend that any recording that includes student-identifying information not be archived beyond the duration of the class.

**Conclusion**

Library webcasts have proven to be a very effective means to provide library instruction to our online students, both from our perspective as instructors and on the high level of satisfaction expressed by students who have attended. Access to the necessary technology and bandwidth needed for a productive library webcast experience does not seem to be an issue among our online student population. As a result, we are examining how we might expand the use of library webcasts beyond instruction in a way that is scalable and sustainable based on our current library organizational structure.
References


Appendix A
Webcast Notices to Students

First Notice:

Invitation to library webcast, Wednesday September 14th, 7:00 P.M. MDT

This Wednesday evening, September 14th, 7:00 P.M. Mountain Daylight Time, I will present a webcast to introduce you to effective use of the library web site for research. I’ll walk through a real-time library database search and offer tips and strategies for getting the best search results with the least amount of stress! All you need is your internet-connected computer with your speakers turned on. You’ll have the opportunity to interact and ask me questions via chat. If you’re able to join me, just point your web browser to http://connect.regis.edu/triedel at the appointed hour. Once you have connected, you’ll be prompted to type in your name, and then I’ll add you to the meeting. I look forward to seeing you!

Second Notice:

If you are able to join me for the library webcast this evening, please log in just before 7:00 Mountain Standard Time. I'll be available by 6:45 if you'd like to log in early and test your connections. If you’re unsure or would like to double-check the time for your time zone, try this time zone converter: http://www.timeanddate.com/worldclock/converter.html.

To join the webcast, point your browser to http://connect.regis.edu/triedel and select the “Enter as a Guest” option. Use either your first name, or first name and last initial—no need to enter your entire name. Once you log in, a message is sent to me indicating you want to join the meeting, and I will grant you access to the meeting room. Turn up your speakers and sit back and watch as we tour the online library!

During the presentation, I will be sharing my computer desktop as I demonstrate some of the online library services and resources. I will be using my microphone as I give my presentation, so you will need to use your computer’s internal speakers, some external speakers, or headphones to hear the presentation. To keep things simple, we will use the built-in chat feature as a means for you to communicate and share questions.

If you are planning to use an iPad to attend the meeting, you’ll need to download the free Adobe Connect app in advance.

If you are not able to attend, I plan to record the webcast and make it available afterward. I'll post more instructions to the discussion forum tomorrow about accessing the recording. However, please join us if you can, as this represents a chance to share questions and answers with others.

I look forward to "seeing" many of you this evening!

Tom
Appendix B

Student Survey

Survey invitation, posted to class forum:

Hello everyone,

I trust your class has gone well and that you’re well on your way to submitting your final projects! If I could add one more thing to your plates, I’d be grateful if you could take five to ten minutes to answer a few questions about the library webcast that I did during the third week. (The webcast was the real-time presentation rather than my interaction with you in the class forum). I’d be interested in hearing from you whether you attended the webcast or not. By participating in the survey, you have the option of entering your name in a drawing for a $25 Amazon.com gift certificate. You’ll find the survey here: http://www.zoomerang.com/Survey/WEB22DFHVX2F. Thanks for participating!

Survey questions:

1. What is your course number?

2. Did you attend the library webcast for this course?
   a. I attended at the scheduled time
   b. I watched the recording later
   c. I did not attend the webcast or watch the recording
   d. Other, please specify

3. If you did not attend or watch the recording, which of the following best describes your reason?
   a. I am already comfortable with finding library resources
   b. I did not see any value attending the webcast to fulfill the assignments for this course
   c. I tried to attend, but had technical difficulties
   d. I did not know about the webcast
   e. Other, please specify

4. If you attended or watched the webcast, please rate the following features of the online “meeting room.” (very good, good, OK, bad, very bad)
   a. Signing in
   b. Visibility
   c. Audio
   d. Chat

5. Which of the following aspects of the presentation did you find beneficial? (check all that apply)
   a. Research guides
   b. Database selection
   c. Database searching
   d. Interlibrary loan
   e. Research assistance (reference desk, virtual reference)
   f. Other, please specify

6. What kind of device did you use to participate in the webcast?
   a. Desktop computer
   b. Laptop computer
   c. iPad or similar tablet computer
   d. mobile phone or other handheld device
   e. Other, please specify
7. Where/how did you watch the webcast?
   a. In a classroom or lab on an individual computer (you logged in as yourself)
   b. In a classroom or lab with the presentation projected (only the projected computer was logged in)
   c. Home
   d. Work
   e. Other, please specify

8. Overall, how would you rate the usefulness of the library webcast?
   (very good, good, OK, bad, very bad)

9. Do you have any other comments, or recommendations for future library webcasts?

10. If you would like to enter a drawing for a $25 Amazon.com gift certificate, please enter your name and e-mail address below. This information will not be connected to your responses above.
In it for the Long Haul: Lessons from a Decade of Assessment

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University of Illinois

This paper analyzes student evaluations of library orientation and information literacy instruction over a ten-year period, 2002 to 2011. The survey respondents were five hundred students who were taking or had just completed their first course in LEEP, the distance education option of the M.S. program at the University of Illinois. This case study describes the LEEP program and library services for it, focusing on the librarian-led information literacy activities that are integrated into the students’ initial ten-day on-campus residency. Student-centered assessment data has informed decisions to modify, replace, or retain components of the information literacy program, as several examples illustrate. This case study re-visits three factors identified in an earlier analysis as influencing both the demand for library services and their successful provision. Finally, this study examines the assessment process itself and shares insights about response rates, multi-year data, small-scale evaluation, and the pros and cons of self-reporting.

Background

By now everyone has heard the mantra: assess, assess, assess. No one engaged in the provision of academic library services, especially information literacy services, can fail to appreciate the value of systematic program evaluation and sustained cycles of continuous improvement. However, as budgets tighten, staffs shrink, and workloads increase for those who remain, systematic assessment—especially the gathering and analysis of feedback from users—may suffer in the face of other priorities. Yet paradoxically, with fewer resources to support library services, assessment is more critical than ever to assure the best use of those limited resources, including the finite supply of librarians’ time and attention.

This case study demonstrates how a cyclical assessment process generated data for improving library instruction within one academic department. Annual student evaluation data for the decade of 2002 through 2011 from a small-scale, multi-faceted information literacy program at the University of Illinois, Urbana-Champaign (UIUC), reveals trends and anomalies in the reception and effectiveness of the program. The program serves online students pursuing a master’s degree at the Graduate School of Library and Information Science (GSLIS). Analysis of the evaluative data by the Library & Information Science (LIS) Librarian at UIUC has affirmed the program’s instructional goals and prompted modifications to the content and delivery of both face-to-face and web-based teaching. In short, the survey data has empowered the LIS Librarian to experiment confidently with instructional strategies that directly respond to students’ experiences and expressed needs.

(The library program under scrutiny in this case study is actually a cluster of orientation and information literacy activities and materials that are targeted at a specific population of distance learners in an online degree program called LEEP. The individual components of the library program evolved and coalesced over time, and thus the construct of “program” is somewhat artificial. For this reason, and to avoid confusion between the library program and the academic program which it supports, the information literacy program will be referred to herein as “LibLEEP.”)

The challenge of collecting data over time is, obviously, that the objects of study are constantly changing. The M.S. program which LibLEEP supports was, and is still, evolving. Its curriculum, student population, educational technologies, and internal culture have all changed in the ten-year period discussed here. These changes will be summarized in a subsequent section. This case study documents a parallel evolution both in LibLEEP and in the content and mechanics of assessing it. Although student evaluation
surveys have been conducted since 2002 and have generated valuable data, there are only a few variables
for which a full decade of continuous data exists, because the survey instrument has been modified over
time to reflect changing circumstances.

This paper will briefly review the relevant literature on the assessment of information literacy
instruction, provide basic background on the LEEP program at UIUC, and explain the goals and design of
LibLEEP. Distinct elements of LibLEEP will be evaluated in light of student survey data. Observations
about LIS distance education that were reported in an earlier article (Searing 2004a) will be re-visited to see
if the evaluative data support them. Finally, insights about the assessment process itself will be shared.

Literature Review

There is a vast amount of published information relevant to the topics touched upon in this case
study. The author’s thinking has been formed by reading about the genesis and evolution of distance
education in LIS, the information needs of graduate students, the development of library services for distant
users (especially online users), approaches to assessing library services generally, and broader discussions
of the role of subject librarians in fostering discipline-specific information literacy. Unfortunately, very
little was published in the past decade about library services to support LIS education in particular, and
even less about services for LIS distance education programs. Latham and Smith’s descriptive study
(2003) stands alone. They surveyed academic libraries at universities with ALA-accredited LIS programs
and examined the libraries’ websites to determine what services were in place to support LIS distant
learners. They pointed out the under-utilization of needs assessment and evaluation techniques, and they
asserted that “more libraries need to provide feedback mechanisms for their distance learners” (p. 130).
Hensley and Miller (2010) surveyed distance learners in nine departments and schools at UIUC, including
students in the LEEP program, to gather baseline data about their library use, preferences, and attitudes;
their report did not break down their findings by academic program but nonetheless yielded useful
information for planning and service provision. Most participants in the study were graduate students,
reflecting the demographics of UIUC’s online learning population, and many were unaware of the library
services available to them. Other institutional studies of library services for distance education have
likewise focused on graduate students, but not LIS students specifically.

Most germane to the present study, therefore, are works about the assessment of library
information literacy services and instruction. Recent literature about assessing library instruction focuses
overwhelmingly on measuring students’ information literacy and the impact of library instruction on it.
“To be information literate, a person must be able to recognize when information is needed and have the
ability to locate, evaluate, and use effectively the needed information” (American Library Association,
1989). This basic definition encompasses the notion of disciplinary information literacy—in this case,
knowing the resources and possessing the searching skills to successfully retrieve and use information in
the field of library and information science.

The current emphasis on assessing student learning represents a decisive shift from approaches to
evaluating library instruction that were common at the end of the 20th century. Surveying academic
librarians in the mid-1990s, Ragains (1997) discovered that evaluation tended “to focus upon attendees’
perceptions of the librarian’s performance.” He criticized such “reaction data” as “inadequate to measure
student learning, guide programmatic improvements in library instruction, or be used as a basis for
librarians’ performance appraisals” (p. 159). Ragains’ indictment echoed through the literature. Similar
emphases on student perceptions were uncovered in an analysis of library instruction assessment forms
(Kapoun, 2004). Today, one is hard-pressed to find guidance in the current literature for evaluating the
nuts and bolts of instructional practice through student evaluations. Summarizing their survey of ARL
libraries, Walter and Hinchliffe (2005) did acknowledge that “student feedback is an important component
of instructional improvement” (p. 14-15) within a wide array of instructional improvement activities.
Veldof (2006), in her guide to one-shot library workshops, borrowed a four-part classification from
professional trainers, who distinguish among reaction evaluation (did they like it?), learning evaluation (did
they get it?), behavioral evaluation (do they apply it?), and results evaluation (does it make a difference?)
(p. 70-71). Over the years, the evaluation of LibLEEP included all four elements, but with a strong slant
toward reaction evaluation.
Radcliff, Jensen, Salem, Burhanna, and Gedeon (2007) explain nine techniques for assessing college students’ information literacy, along with reasons to use or not use each one. Though a few examples of affective measures are evident, the emphasis is on documenting students’ acquired knowledge and skills—“learning outcomes”—rather than perceptions or opinions. A great many case studies and research efforts have found the ACRL “Information Literacy Competency Standards for Higher Education” to be a useful framework for measuring information literacy, as well as a scaffold for designing programs and scripting individual class sessions and tutorials (Association of College & Research Libraries, 2000). Neely (2006), for example, employs the standards as a framework for teaching and testing information skills. Oakleaf (2010) maps the ACRL standards to other organizations’ standards for student learning outcomes. For those who assert that genuine assessment must be student-centered, not teacher-centered, the ACRL standards offer a suitable framework with the learner in the spotlight. The author of the present study always introduced the concept of information literacy and the ACRL standards in her presentations to LIS students, aiming to instill in them a meta-awareness of themselves as information seekers. However, the LibLEEP assessment instrument was not structured to measure student progress vis-à-vis the standards, but to measure students’ opinions about the relevance and effectiveness of the instructional program. In this sense, the feedback constitutes subjective reaction data, but it has nonetheless proved valuable for analyzing and enhancing LibLEEP.

Librarians engaged in information literacy work have progressed from measuring inputs, to measuring outputs, and finally to measuring outcomes, in order to document the library’s vital contribution to the teaching mission of the college or university. Outcomes-based studies serve many purposes. They may be used to justify resource requests, inspire greater collaboration between librarians and academic faculty, and impress stakeholders. Overshadowed in the rush to communicate the library’s part in producing information literate graduates, however, is the original purpose for evaluating library instruction: to improve librarians’ teaching skills and to keep instructional goals and strategies relevant. This prior focus is exemplified by the practical guide, *Evaluating Library Instruction: Sample Questions, Forms, and Strategies for Practical Use* (Shonrock, 1996). In this compilation, very few of the hundreds of sample survey questions assess actual information literacy. Rather, most of the questions address practical matters like the perceived effectiveness of classroom presentations, usefulness of handouts, and librarians’ teaching proficiencies. Merz and Mark (2002) and DeFranco and Bleiler (2003) also compiled model evaluation forms. There have been no similar compilations published in the past decade.

Most writings have emphasized not just the gathering of assessment data, but the uses to which it may be put. In addition to recommending assessment methods, for example, Radcliff (2007) gives advice on analyzing the results and applying them. Likewise, Holliday, Davis, and Martin (2010) emphasize using data to improve teaching and learning. An entire issue of *Public Services Quarterly* was devoted to the assessment of information literacy programs with an emphasis on “telling the story of the teaching library” in order to create campus-level awareness of the library’s role in teaching and learning (Walter, 2007). In the context of this thematic issue, Searing (2007) analyzed the first four years of assessment data from the LEEP information literacy program; the present paper extends that analysis.

Despite widely available models for evaluation, a study of ARL libraries reported that only 62% of them had a formal mechanism for assessing their instructional programs (DeFranco & Bleiler, 2003). The situation was worse among ARL libraries providing instruction for distance education students; only 11% conducted formal assessment in this area (ACRL, 2005). However, data from a 2009 survey of librarians involved in support for distance education shows a brighter picture. Asked “What is in place now to assess effectiveness of distance instruction through libraries?” over half of the 155 respondents indicated some type of assessment activity, either originating within the library or included in broader assessments of distance education. Student surveys and feedback forms were commonly mentioned (ACRL, 2009). Still, published articles on the evaluation of information literacy efforts specifically in the distance education context are rare. Whitehurst and Willis (2009) reviewed the literature on library services for distant learners, with a particular focus on library instruction. They credited anecdotal evidence, along with the quantitative results of a LibQUAL+ survey of distance education students, as drivers for improvement of instruction for distance learners at East Carolina University. They concluded, “In the future, as we meet with more students, physically or virtually, our intention is to illustrate the use of
research tools, provide practice opportunities, build confidence, and make them feel comfortable using the library effectively” (p. 27). These objectives mirror those of the information literacy program for LEEP, which is described below.

The LEEP Program

GSLIS offers both on-campus and online courses leading to the Master of Science degree in Library and Information Science (M.S.) and to the Certificate of Advanced Studies (C.A.S.). The M.S. program requires forty hours of coursework in two required courses and eight or more electives. While there is a significant amount of cross-enrollment, students are admitted to and are primarily identified with either the residential or the distance program. In 2011, approximately half of the incoming Masters-level students were formally enrolled in LEEP, the distance education option. LEEP (originally an acronym for Library Education Experimental Program) is a blend of learning environments. The weekly, synchronous online classes are supplemented with asynchronous communication and face-to-face on-campus sessions. Every July, approximately 120 new LEEP students enroll as a cohort and spend an intensive ten-day orientation period on the UIUC campus. Students find this introduction to the program to be both intellectually stimulating and physically exhausting. The first cohort labeled it “LEEP boot camp,” and the name stuck.

LEEP boot camp comprises a highly condensed required course (LIS502: Libraries, Information and Society) and several sessions of hands-on training led by instructional technologists and librarians. In LIS502, students acquire a basic knowledge of LIS principles and current issues within the field. To that end, LIS502 incorporates assignments that require the use of library- and internet-based information resources. After LEEP students complete their summer boot camp they take courses on the normal semester calendar using the Elluminate virtual classroom platform and the Moodle learning management system. In addition to the weekly online meetings, each class holds one day-long, face-to-face session in Champaign-Urbana midway through the semester.

Now in its sixteenth year, the LEEP program is the most successful online learning program at UIUC. Moreover, GSLIS is one of the preeminent graduate LIS programs in the world (Graduate School of Library & Information Science, 2011). LEEP is also distinguished by the degree to which it has been an object of research by faculty and Ph.D students. Smith, Lastra, and Robins (2001), Estabrook (2003), Haythornthwaite and Kazmer (2004), and Montague (2006), among others, have derived groundbreaking insights about online education from studying LEEP. GSLIS students, teachers, and administrators share a belief that LEEP’s success stems in large measure from the sense of community that is born during the boot camp and nurtured by mid-semester campus visits. Short-term residencies are required by some, but not all, online M.S. programs in LIS. Kazmer (2007) compared LEEP to the M.S. program at Florida State University, which does not require time on campus, and delineated the advantages and disadvantages of each model. Her interviews did not touch upon library access or library instruction, unfortunately.

Library Services for LEEP

Within the UIUC library, subject specialists and departmental libraries are the cornerstones of service to faculty and graduate students. The full-time LIS Librarian has primary responsibility for collection development, reference, and library instruction for the GSLIS community, both on and off campus. However, centralized library services also serve GSLIS. Several units cooperate to provide LEEP students and faculty with general reference, interlibrary loan, access services (including course reserves), and an increasing array of technology-based scholarly support services. LEEP students and faculty are encouraged to use the centralized, multidisciplinary live chat reference service but also to pose LIS-specific reference questions directly to the LIS Librarian by email or phone. The LIS Librarian and her assistant maintain daily office hours at the GSLIS building, including on weekends when LEEP students are on campus. Upon request from faculty, the LIS Librarian demonstrates specialized resources during class sessions, hosts web boards within course Moodle sites, and develops LibGuides for specific courses or assignments.
In all the ways listed above, the discipline-focused services provided to LEEP students and faculty are nearly identical to those provided to on-campus students and faculty, who likewise avail themselves of virtual reference, drop-in consultations, and course-integrated instruction. The only domain in which discipline-based services for LEEP students differ noticeably from on-campus students is library orientation and information literacy instruction. Every fall and spring, during the general orientation session for new on-campus students, the LIS Librarian communicates basic information about the library. Approximately two weeks later, the librarian delivers a 30- to 45-minute guest lecture and resource demonstration in a required course which most on-campus GSLIS students take in their first term. This is the extent of the systematic library instruction for resident students, although the LIS Librarian also leads optional library tours “with an LIS flavor,” of which a small number of students take advantage, and one optional workshop on LIS databases, which is also lightly attended. Admittedly, on-campus students have more opportunities for informal learning from peers; in addition, many work in the University Library and receive in-depth orientation to the library as part of their employee training. The formal library instruction components of LEEP boot camp (LibLEEP) are more intensive and are described in detail in the next section.

Changes in the LEEP Program and Library Services, 2002-2011

Successful programs do not remain stagnant; they change, grow, and improve over time. This is certainly true for programs that depend heavily on computer technologies, as both libraries and distance education do. In 2002, when student evaluations of LibLEEP were first collected, the program consisted of three activities. First, a tour acquainted the students with the physical layout and service points of the Main Library, including the separate, full-service Library and Information Science Library within the Main Library building. Second, a hands-on workshop in a GSLIS computer lab introduced them to numerous resources, including the online catalog, electronic course reserves, the LIS Library website, the University Library’s gateway site, and major journal finding and indexing tools for the discipline. A final workshop focused on using library resources from a distance, including how to log in through the proxy server, how to request book and article delivery from the print collections, and how to obtain reference assistance by telephone, email, and online chat. Particular emphasis was placed on differentiating the document delivery services provided by the Academic Outreach Librarian and the reference services provided by the LIS Librarian and central reference department, as these were accessed from different websites.

Between 2002 and 2011, a number of major changes occurred both to the LEEP program and to the UIUC library:

- **Enrollment growth** - LEEP’s enrollment grew from 78 incoming students in July 2002 to a peak of 172 in July 2010, an increase of 120%. In order to sustain a sense of community and to make the best use of existing facilities, entering cohorts were split in two in 2002, and divided again in 2010. By 2011, the LEEP boot camp involved three overlapping sessions for sub-cohorts of about fifty-five students each.

- **Instructional software** - In 2007, LEEP’s original web-based platform, which was developed in house, was replaced with Moodle, an open-source learning management system. In 2008, the Elluminate web conferencing service was adopted for the synchronous class sessions, replacing another homegrown product.

- **Classroom facilities** – In the early years of LibLEEP, all workshops were held in a basement computer lab at the GSLIS building. When a state-of-the-art electronic classroom opened in the Undergraduate Library (UGL), adjacent to the Main Library, some of the workshops relocated there. The UGL classroom facilitates the use of clickers and other technologies.

- **Electronic reserves** - Early in LEEP’s existence, GSLIS developed an e-reserves service hosted on a GSLIS server but maintained by the LIS Librarian’s assistant. By 2005, the University Library
had instituted a general electronic reserves service, and e-reserves for LIS courses were migrated to it.

- **Library staffing** - In 2009, a fundamental change occurred in the organization and staffing of library services for distant users. For many years, UIUC’s Division of Online and Continuing Education had employed an Academic Outreach Librarian. The position was eliminated and the librarian’s responsibilities were integrated into existing University Library workflows. The interlibrary loan department, for example, assumed responsibility for home delivery of books.

- **Subject-specific library services for LIS** - In 2009, the separate LIS Library closed. Its collections were merged into the central book stacks and other departmental libraries. Library personnel with a designated responsibility for LIS were reduced to a full-time faculty librarian and an almost-full-time staff member. The LIS Library’s website was transformed into the LIS Virtual Library, with enhanced search and browse features.

- **Online catalog** - The VuFind interface to the online catalog was launched in 2009, which complemented but did not replace the existing ExLibris WebVoyage interface. Distance students still needed to use the old catalog interface to request home delivery of books.

- **Other library resource interfaces** - A makeover of the UIUC Library website’s architecture and visual design was undertaken in 2007. The new design prominently included a federated search program, Easy Search, which was developed locally to cross-search the most common full-text article databases used by undergraduates. Over time, specialized Easy Searches were developed for ten subject areas, including LIS.

- **LibGuides** – In 2007, the UIUC began using Springshare’s LibGuides to host both general and course-related library resource guides. LibGuides prepared for distance education students by the LIS Librarian and the central reference department (University Library, 2011) are among the most frequently accessed.

- **Other library instructional materials** - Over the past decade, many short videos were produced and placed on the UIUC Library website to provide anywhere, anytime training in the use of specific resources. In 2010, the LIS Librarian worked with a student to create a library welcome video for LEEP students, which they viewed prior to their arrival on campus.

This partial list of changes that impacted students and library users over the past decade is a reminder that information literacy instruction takes place within a wider context of academic innovations and library service improvements. Constant updating of workshop scripts, web-based guides, and library tour routes was required to keep LibLEEP relevant. By 2011, the configuration of the librarian-led boot camp sessions had changed in several ways. Because incoming students were divided into three sub-cohorts, three overlapping boot camp sessions were scheduled; LibLEEP was repeated in each one.

The LibLEEP workshop on online resources was split into two workshops. This change responded to persistent feedback from students that the workshop induced a severe state of information overload. In the new format, the first workshop followed immediately after the tour of the physical building, on the first full day of boot camp, and was conceptualized as a complementary “virtual tour.” Just forty minutes long, it emphasized learning one’s way around the UIUC Library website, including special features of the LIS Library website and, later, the LIS Virtual Library (The LIS Virtual Library, a portal site for disciplinary information, came into prominence when the LIS departmental library closed [Searing, 2010]). On the following day, a workshop concentrated on finding LIS journal articles using the major disciplinary indexes as well as the local holdings database and federated search tool. Because the student evaluations indicated that this content was redundant for students with well-developed research skills, the database workshop was optional; about half of the students chose to attend it.
Another optional workshop was designed to assist students with research for the information policy “tracking paper,” which was assigned in LIS502 from 2004 to 2010. The students had to choose a topic from a short list, prepare a summary of the issue in the format of an executive briefing, and devise a strategy for keeping current. Over the years, the topics for the tracking paper ranged from specific legislation, such as the Patriot Act, to new directions in the profession, such as digital curation. Controversial topics such as outsourcing of library operations and copyright reform also appeared on the list. For many students, this was a daunting assignment, because they needed to venture beyond books and journals to extract information from the websites of advocacy and research organizations, blogs, news sources, government documents, and more. Many were not familiar with the genre of the executive briefing, and their anxiety was exacerbated by the time pressure. Although the tracking paper information workshop was listed as optional, it was strongly recommended by the professor and teaching assistants and attendance was high (The professor replaced the tracking paper with a different assignment in 2011, one which exposed the students to multiple information sources in LIS but did not require independent information-seeking, so the workshop was discontinued).

The LibLEEP workshops are the only information literacy instruction opportunities that are systematically offered to all LEEP students. However, additional library instruction does occur after boot camp. Most new LEEP students register for LIS501, Information Organization and Access, in the fall term following boot camp; the LIS Librarian is usually invited to deliver a “refresher” lecture to the class during its mid-semester on-campus session. This half-hour lecture/demonstration is framed around an upcoming group project. Some students receive additional exposure to library resources and research techniques within elective classes. A librarian who is an expert on citation management software has offered a workshop on RefWorks for LEEP students through Elluminate; this was arranged by the LIS Librarian as a direct response to student feedback via the evaluation process. Lastly, the LIS Librarian has prepared various asynchronous resources to support independent learning, including LibGuides and instructional videos. The assessment data do not address the effectiveness or popularity of any of these other instructional opportunities – only the LibLEEP program that takes place during the boot camp.

LibLEEP was the focus of assessment because it forms the foundation for subsequent formal and informal development of discipline-centered information skills. Following a description of the assessment method, several responses from the student evaluation survey will be analyzed to illustrate how the data were used to affirm, modify, or eliminate components of LibLEEP.

Purpose, Method, and Timing of Assessment

In the literature of assessment, some writers make a distinction between assessment as an objective act of gathering data and evaluation as the subjective act of making judgments based on the data. In practice, the two terms are often conflated. A further distinction is typically made between formative and summative evaluation. These modes differ in purpose rather than methods. Formative evaluation seeks information that will drive program development or improvement. Summative evaluation seeks to determine if a program met its objectives. Tancheva, Andrews, and Steinhart (2007) explored the nuances of formative versus summative evaluation and stated that one study may encompass both purposes. Like many experienced evaluators, they also applauded the use of multiple methods. The assessment strategy described in the present article incorporated informal feedback from professors and teaching assistants as well as the librarian’s own observations, but it relied most heavily on formal feedback from students through a web-based questionnaire. The assessment strategy did not hinge upon objective measures of students’ knowledge or skills but on self-reporting. Many of the questions measured perceptions or preferences. Although some data from the feedback form could be interpreted in summative ways, the general flavor of the assessment activity was formative. Its purpose was to discover lacunae in the content or other problems in LibLEEP, in order to correct them in future sessions.

From 2002 through 2005, student evaluations were gathered via a paper-and-pen survey, which was administered during the final library workshop near the end of the boot camp. A survey of ARL libraries at that time revealed that paper forms were the most commonly used formal assessment method for face-to-face instruction (DeFranco & Bleiler, 2003). Starting in 2006, the evaluation form for LibLEEP
was converted to a web-based questionnaire using survey templates provided by the university. Students received the URL via email approximately a week after they returned to their homes. The web evaluation form proved to have distinct advantages. First, it did away with the task of transcribing data from paper forms to a spreadsheet or database, thus saving time and eliminating the potential for introducing errors. Second, the web survey did not need to be administered in the rushed final minutes of an instructional session. Instead, the evaluation could be conducted after students had the opportunity to use their new knowledge and to gain perspective on the instruction they received. Third, the web survey could reach students who were not present at the final workshop.

Over the course of the decade, five hundred students completed the LibLEEP survey. The tidy total is pure coincidence.

Findings and Applications

Student-centered assessment data has informed decisions to improve, replace, or retain components of the information literacy program, as the following examples illustrate.

Improving instructional components

Practical learning outcomes that were formulated for LibLEEP in 2000 still pertain today. One states that students will be able to navigate to and use electronic resources that the University Library provides through its website. Survey questions related to this learning outcome were of two types. From 2002 through 2005, a question listed specific online resources which were introduced during the workshops and asked students whether they used those resources to complete their assignments. It was gratifying, but hardly surprising, to learn that students did indeed consult the resources which the librarian demonstrated (Searing, 2007, p. 207). In 2004 and 2005, students were also asked to list other resources they used for their LIS502 assignments. The responses highlighted students’ use of legal and governmental information sources, including Lexis-Nexis and Thomas. In subsequent years the LIS Librarian invited colleagues with experience in teaching such resources to participate in LibLEEP. This arrangement continued until the course assignments were revised to focus less on specific policy initiatives and laws and more on broad trends and movements that affect the profession.

The ultimate intent of LibLEEP is two-fold: to equip students for course-based research within the discipline of LIS and to empower them to find information for ongoing professional development in their future careers. Understanding how the LIS article indexes work, how a major library organizes information, how key concepts like Boolean searching and vocabulary control operate across disparate resources, when and how to use Google Scholar—this is knowledge that will be of lasting benefit to them. The students, however, are intensely focused on the assignments they must complete during boot camp. If the new knowledge doesn’t have an immediate application to the research tasks at hand, they may view the library workshops as a waste of time. The evaluation questionnaire aimed to discover whether the workshops met the student’s needs, not the librarian’s, by measuring its success as perceived by the students. Obviously, students cannot evaluate longer-term impacts when the assessment occurs on the heels of the boot camp. Therefore, the questions on the survey emphasized the near-term effects of the workshops.

Students were asked to indicate their degree of agreement with the statement, “The online resources workshop prepared me to do research for LIS502 assignments.” For this and other questions that used a 5-point Likert scale, the results were analyzed by assigning weights to each response: Strongly disagree=1; Disagree=2; Neutral=3; Agree=4; Strongly agree=5. A weighted average was then calculated for each year. Across the decade, the weighted scores were remarkably consistent, ranging from 3.9 to 4.3, and only once dipping below 4.0. Most students agreed that the workshop was relevant to their immediate needs. There was variance from year-to-year—the combined “Strongly agree” and “Agree” scores ranged from a high of 94% in 2005 to a low of 75% in 2007, for instance, but the value of multi-year data lies in the recognition that these highs and lows are not indicative of trends.
When quantitative measures are consistently positive, there may be little motivation to make improvements or to experiment with content or pedagogy. In the case of the online resource workshop, the open-ended comments lent important context to the numerical findings and shined a light on areas where minor improvement would be worthwhile. Over the ten-year period, the percentage of respondents who contributed comments about the workshop ranged from 32% to 69%. The average for the decade was 47%. Because close to half the respondents commented on the workshop, careful attention was paid to those comments.

Students’ survey comments frequently mentioned the large amount of content covered in a short amount of time, which led to a sense of being overwhelmed. Many comments displayed empathy for the librarian faced with squeezing so much necessary information into one or two workshops. Quite a few students expressed a wish for more hands-on practice time. While incorporating more self-guided exploration into the brief online resources workshop proved unfeasible, the follow-up optional workshop on LIS databases now sets aside significant time for hands-on practice. In addition, aware that many students suffer from information overload, the librarian acknowledges this fact in her presentations, reassures students that their anxiety will fade as they gain experience with searching, and reminds them about the ongoing availability of reference assistance.

Survey comments starkly depicted the variance in entering levels of information literacy among the new LEEP students. Some students arrived at boot camp with well-developed research skills:

“This workshop is redundant for someone who already works reference in a library.”

“I felt that it is a great workshop if someone is unfamiliar with researching online. I however did not feel as though I took that much away from it, as I have done much research work before.”

While others were novices:

“That workshop was helpful because I think I wouldn't have a clue on where to start for the assignment in LIS502.”

“It felt like an intro to someone like me who has not done any online research in a very long time.”

“It was helpful but I feel like there is still a lot I have to learn.“

Information literacy instruction should benefit students with both strong and weak information-finding skills, and therefore the LIS Librarian perennially seeks the ideal balance between too much and too little workshop content. A survey question gauges students’ perceptions of the amount of information presented (see Figure 1). The responses put the contradictory comments into context by revealing that a large majority of students, averaging 80% over the decade, were satisfied with the amount of information. Substantiating complaints about information overload, those who were not satisfied were more likely to feel that there was too much information rather than too little. Because the data indicated that the workshop covers the right amount of information, the librarian conscientiously drops or abridges some older content whenever she adds new content.

Handouts and ancillary guides are another facet of LibLEEP that was modified based on student evaluations. The earliest feedback included complaints about the lack of handouts:

“It would be great to get a handout of resources and what they are.”

“I would like a handout listing major databases, a short description, and any special log-in requirements.”

The following year, handouts were provided, and the feedback turned positive:

“Thanks for the great handouts – they helped a lot!”
“Thanks for putting the research guide together; it saved me.”

Figure 1. Student opinions regarding the amount of information presented.

From 2004 to 2008, incoming LEEP students received a collection of library-related handouts, assembled in a folder with the librarian’s contact information on the cover. The folder’s contents, which varied slightly from year to year, included: a brochure about the Academic Outreach Library’s services, a general brochure about the University Library, an agenda for the library orientation sessions during LEEP boot camp, brief explanations of key concepts for online searching (controlled vocabulary versus keywords, truncation, Boolean logic), a matrix comparing the major LIS online indexes, several single-page flyers treating various features of the online catalog, instructions for requesting books from other libraries in the CARLI consortium, instructions for accessing e-books, an annotated list of major LIS reference tools, and a list of departmental libraries with their summer hours. Some of these handouts were standard materials used throughout the University Library, while others were created specifically for the LEEP students. A question about the handouts, posed in 2007 and 2008, provided quantitative proof of their usefulness. The 5-point agreement scale for the statement, “I have used or anticipate using the handouts in the library packet,” yielded weighted scores of 4.0 in 2007 and 4.3 in 2008.

Again, however, students were given an opportunity make comments as well, and the comments reveal a more polarized view of the handouts’ importance. Some students praised the handout packet:

“The packet is very informative and has great material I will be needing!”

“The packets are a good reference. It is nice to have something that tangible that I can take home with me.”

However, other students were frank about the inadequacy of printed handouts:

“While they were very useful, I have a hard time keeping track of all the papers we were handed.”

“A link to resources on Moodle is much more important than a physical packet.”
Several students, while expressing appreciation for the packet, admitted that they had not looked at it.

Although the assessment affirmed the continuing value of paper handouts for some purposes, it also supported a gradual migration toward web-based presentations of the same information. In 2005, the LIS Librarian created a web page to support the information policy tracking assignment and to serve as the jumping-off point for the optional workshop on the same topic. The web page was instantly popular with LEEP students, as evidenced by survey comments as well as web access statistics. Meanwhile, the LIS Librarian observed that LIS students acted less and less enthusiastic when presented with a packet. In fact, the plethora of printed material seemed to contribute to the sense of information overload for some of them. Today, LEEP students are no longer presented with a packet of handouts, but one or two handouts with key information are distributed at each workshop. This seems to ease some student’s anxieties and gives them something on which to make notes. Although a specific question about handouts no longer appears on the survey, students still volunteer positive comments about them.

When the University Library implemented LibGuides in 2008, the tracking paper resource page was converted to a LibGuide, and it quickly became one of the most frequently accessed UIUC guides. Judging by the use statistics, which track month-by-month access, students continued to link to this assignment-specific guide after the class ended. It seems likely that students bookmarked the assignment guide and then resorted to it as a familiar shortcut to library resources. By so doing, they bypassed both the Library’s gateway page and the LIS Virtual Library and thereby forfeited opportunities to discover resources beyond those that were pre-matched to that particular assignment. This realization spotlights an old dilemma in academic librarianship, that between helping students meet immediate course-related needs and encouraging them to become independent information seekers.

In 2009 a question about LibGuides replaced the question about handouts on the evaluation form. With only three years of data in hand, the findings are suggestive but not conclusive (see Figure 2). Presented with the statement, “The LibGuides were useful for 502 assignments,” no students chose “Disagree” or “Strongly disagree.” However, the portion of students choosing “Strongly agree” has steadily trended downward, from 61% in 2009 to just 26% in 2011. Although the portion choosing “Agree” increased—signaling a less enthusiastic but still positive response—overall the combined “Agree” and “Strongly agree” responses dropped by eighteen percentage points in the three year period. The number of students who felt “Neutral” about the LibGuides’ usefulness rose from 5% to 9%. Most tellingly, the percentage of students who reported that they did not consult the LibGuides jumped from 2% to 15%.

The cause for declining use of LEEP-oriented LibGuides (which is corroborated by usage statistics) may have less to do with changes in student behavior or attitudes than with the revision of the LIS502 syllabus that eliminated the tracking paper. The results suggest that, unless a web guide is closely aligned with an immediate, imposed information need, students are less likely to consult it or find it useful. As more annual data accumulate, more conclusive evidence may emerge for fine-tuning both paper handouts and web resource guides.
Replacing an instructional component

Another desired outcome for LibLEEP is that students will be able to discover and access library resources when they are away from campus. Because the mechanisms by which students request materials from print collections changed significantly in 2009, this component of LibLEEP has undergone the greatest change. From a hands-on workshop format, it has been transformed into a largely asynchronous, time-of-need approach embodied in a LibGuide. Evidence from student evaluations helped shape this major change.

The training module to prepare students for remote use of the library was originally structured as a required workshop and was scheduled near the end of the boot camp. Since the objective was to explain to students the step-by-step processes for accessing library resources from a distance, the workshop was scheduled close to the time they would leave campus. The LIS Librarian and the Academic Outreach Librarian co-led the workshop and demonstrated how to log in through the Library’s proxy server, how to find and download electronic reserves, how to use the virtual chat reference service, and how to request delivery of books and articles from the print collections. The last was a complicated process that differed for in-state and out-of-state students.

From the first survey, student feedback on this workshop identified problems. In 2002 and 2003, the survey simply asked for students’ comments on the workshop and for topics to add or delete. Most comments were positive or neutral but some, like the following examples, stood out:

“Very informative. Unfortunately, too many people are too tired due to completing the 5th assignment last night.”

“I personally was too tired to get much out of it.”

These comments echoed verbal statements made by students as they arrived for the workshop. When the librarian asked, “How’s it going?,” students often described themselves as “fried” or “brain-dead.” Beginning in 2004, the survey added a second question about the remote access workshop, aimed at
quantifying students’ perceptions of its impact. A majority of students between 2004 and 2010 agreed or strongly agreed with the statement, “After this workshop, I feel confident about accessing UI library resources from home.” The annual weighted scores varied only slightly, from 4.0 to 4.4. Once again, however, the comments conveyed a less rosy assessment and often implied that the lessons of the workshop were not absorbed:

“It came at a bad time... I was so tired and worried about the test that I couldn’t focus.”

“By this time I was feeling pretty exhausted and overwhelmed by all the library resource information. I'm not sure I've got this one mastered.”

Attendance at this final boot camp workshop never matched attendance at the earlier ones, and it grew sparser as the years passed. Although it was not labeled “optional,” students behaved as though it were. By 2009, 43% of the survey respondents checked “did not attend.” Comments on the evaluation form gave reasons for non-attendance:

“I would have liked to attend but ran out of time completing course assignments.”

“I misread the schedule and thought it was optional and also because we were at the tail end and pressured for time with our finals due.”

“Too pressed for time at this point in boot camp. The other online tutorials were good and hoped I could find this information with them.”

Furthermore, out-of-state students expressed frustration with sitting through instructions that applied only to in-state students and vice versa. Other students commented that the workshop was redundant. Despite self-reporting by students that the workshop made them confident about using the library remotely, the uptick in negative comments and the diminishing attendance led the librarian to consider whether a different instructional strategy might be more effective.

Organizational change also forced the re-examination of this workshop, which was co-led by the LIS Librarian and the Academic Outreach Librarian. The elimination of the Academic Outreach Librarian’s position and the absorption of her services into the general library workflow raised a question about the ongoing necessity of holding a workshop devoted to remote library use. One welcome outcome of the transition to the new service model was a comprehensive LibGuide prepared by the reference department for distance students, which spells out, step by step, the process of requesting materials from the print collections, as well as accessing online licensed content (University Library, 2011). The LibGuide contains nearly all the information that was contained in the workshop. In consultation with the LEEP instructors and planners, the LIS Librarian concluded that students would be better off consulting the LibGuide when they actually needed such information. The remote access workshop was discontinued in 2010 and students gained an hour of flexible time during boot camp.

Confirming the value of instructional components

A tour of the Main Library is a key component of LibLEEP. A pragmatic outcome that was formulated for LibLEEP is that students will be able to navigate the physical library. This may seem an unlikely objective for a distance education program, yet the students themselves affirmed its importance. The survey prompted respondents to comment on the library tour. The following are representative of recent comments:

“I found it very interesting. …[H]aving seen various parts of the library will make me feel more comfortable using it.”

“Tour was very informative. A great way to learn where services were and a little history too.”

“Amazing building, informative tour. Would have happily spent the whole day there.”
Explanations were advanced in an earlier paper for the enduring popularity of the LibLEEP library tour (Searing, 2004a). First, the walking tour is a lively contrast to the series of sedentary workshops in dimly lit computer labs during the first days of boot camp. Second, students use the physical library’s organization as a touchstone for later explorations of the library’s virtual space. Third, the banter-filled tour is entertaining as well as informative; it begins the process of relationship-building between the librarian and the students. In the context of the tour, a great deal of information about library collections and policies is imparted. A GSLIS faculty member has suggested that the walking tour may evoke kinesthetic learning (C. Jenkins, personal communication, December 12, 2011).

Few modifications have been made to the tour over the years, except to accommodate larger LEEP cohorts and to reflect relocated service points within the building. The consistently positive student feedback begs the question, what are the most useful parameters on which to evaluate it? With continual improvement in mind, students were asked for feedback regarding the tour’s length and content. Length was an issue because, over the years, the original one-hour tour was lengthened to an hour and fifteen minutes and then shortened to its current length of 45 minutes. Regardless of the length, most participants judged the tour to be just long enough (See Figure 3). In seven of the ten years, dissenters judged it too short rather than too long.

![The tour of Main Library was...](image)

*Figure 3. Student opinions about the length of the library tour.*

What did students who will seldom visit the library want or need to know about its physical layout? On the tours, LIS students displayed an interest in library architecture and organization that transcended their own research needs. As the tour script evolved over the years, it blended practical information (Where’s the information desk? How do I print from public computers?) with gossipy historical tidbits and commentary on the quirks of the building. An open-ended survey question generated answers that influenced the content of the tour. The first iteration of the question prompted students to recommend “topics or locations to add or delete.” Subsequent surveys simply asked for comments about the tour. Following up on student suggestions, a brief excursion into the massive, semi-closed, central book stacks was added to the route. Last year, an optional tour of the Rare Books & Manuscripts Library was offered at a separate time, to accommodate the increasing number of students who expressed an interest in rare books librarianship. An optional tour of the high density storage library is also popular.
during boot camp. Students often suggest more trips “behind the scenes” to library work spaces, but in the interest of time these have been kept to a minimum.

The tour is intriguing from an assessment viewpoint for two reasons. First, because a full decade’s worth of data exists about it, it provides a compelling positive example of service continuity. Only minor changes have been made to tweak what is clearly a successful endeavor. Second, without data that so definitively confirms the value of the tour, it probably would have been abandoned long ago, on the (false) assumption that it was of decreasing relevance to distant users. Of course, a questionnaire cannot test whether students actually can find their way around the Main Library after the tour; it can only prove that they perceive the tour as a valuable experience.

Teacher effectiveness is another dimension of LibLEEP that students evaluate. The original 2002 evaluation form posed three questions about the LIS Librarian’s effectiveness in the classroom. Students were asked to indicate their level of agreement with the following statements: “The instructor was knowledgeable”; “The instructor handled questions well”; and “The instructor was approachable.” In subsequent years, as various librarians and staff members were recruited to assist with LibLEEP tours and workshops, a single open-ended question simply invited comments on each individual’s teaching style. In this way, the students were free to mention aspects of teacher performance that mattered most to them. These comments proved particularly useful to graduate assistants and others with minimal teaching experience who were tapped to lead tours, as they occasionally pinpointed problems like poor vocal projection and uneven pacing that can be resolved with practice. The comments were also a rich source for divining the characteristics of a teacher’s style that make an impression on students. The adjectives “helpful,” “patient,” “friendly,” “clear,” and “knowledgeable” appeared frequently, suggesting that LEEP students learn most readily and happily from a teacher who behaves as a friendly, other-oriented expert. In general, students were quite positive in their feedback and gentle in their criticisms, with the result that the librarians and staff members involved in LibLEEP felt appreciated and motivated. Importantly, consistent positive feedback in this area meant that teacher development could take a second place to content development.

**Thought on the Assessment Strategy**

Assessment data informed modifications to several components of LibLEEP, as the examples above illustrate. Lessons were also learned about the assessment process itself. Understanding the causes for fluctuating response rates is important. Close examination of the data has also reinforced the author’s views, some contrarian, about longitudinal research, small-scale evaluation, and so-called “reaction data.”

**Survey response rates**

The declining response rate is worrisome. Over the course of the decade, the response rate to the student survey has varied from 74% of the target population to just 23%. Figure 4 shows the number of students enrolled each summer in boot camp compared to the number who completed the LibLEEP evaluation survey. Figure 5 shows the annual percentage response rate.

There is no hard evidence about why students do or don’t participate in the evaluation, but one may speculate. Although it trended downward, the rate of response remained above 40% for the first four years, 2002-2005, when the survey was administered as a paper questionnaire at the conclusion of the final LibLEEP workshop. The students who attended the session were a captive audience, so the downward trend was a sign of declining attendance at the workshop. It was feared that the students who attended the workshop might not be representative of the population overall; perhaps those who stayed away did so because they were dissatisfied with the earlier information literacy activities. For the first time in 2006, a web-based survey instrument was administered shortly after the students returned home. The number of respondents dropped precipitously in the first year that the survey was offered on the web, which was disappointing but should not have been surprising. Hernon and Altman (2010) cite research that documented routinely lower response rates for web surveys than for mailed paper surveys. They nonetheless assert that library evaluators should “do all that they can to achieve response rates no lower
than 60 percent” (p. 104). Except in its first year, 2002, the LEEP survey has never achieved a sixty percent response rate. Fortunately, after the low point of 2006, participation gradually climbed again, hovering around the 30-40% rate that is typical of web-based surveys (Office of Quality Improvement, 2010, p. 14).

Figure 4. Survey response compared to enrollment.

Figure 5. Survey response rate.
The conversion to web delivery of the questionnaire is a probable cause for the reduced response rate, but it might not be the only cause. The low response rate may reflect a decline in students’ perceptions of themselves as pioneers in online LIS learning. A “breakdown of the distinction between teacher and taught as well as the collective construction of the course” characterized the early years of the LEEP program (Smith, Lastra, & Robins, 2001, p. 356). Students felt that they were partners with the faculty and technical staff in designing a new model for online LIS education. The first LibLEEP survey, in 2002, took place during the seventh year of the LEEP program. LEEP was no longer new, but online LIS degree programs were still somewhat unusual. Students who saw themselves as innovators believed, perhaps, that they could make important contributions to the further development of LEEP by providing their feedback. The leveling off of the response rate paralleled the LEEP program’s transition from the cutting edge to the mainstream. Today online master’s programs in LIS are widespread, and students may feel that they have less of a stake in their design and improvement.

**Multi-year research**

Uninterrupted multi-year user feedback, particularly at the granular level of discipline-based services, is rare in most academic libraries. Powell quotes Griffiths and King (1991) on the principles of sound evaluation research, which include the admonition that “evaluation should not be sporadic but be ongoing and provide a means for continual monitoring, diagnosis, and change” (Powell, 2006, p. 105). While the present case study does not meet the strict definition of a “longitudinal” study as it is normally understood by social scientists—that is, the observation or collection of data about individual people over a period of time—it does collect annual data about a specific program over time. This case study shows that data can be collected year after year with minimal effort and can prove quite useful in both the short and long terms.

Continuous gathering and analysis of student feedback is facilitated by stability in personnel. In this case study, the same subject specialist librarian has been serving the LIS faculty and students since 1997, and the same staff member since 1984. The teaching and support personnel at GSLIS have also experienced low turnover. Assessment is deeply embedded in their work culture. The regular cycle of LibLEEP student surveys and debriefing sessions with boot camp instructors and advisors has fostered an environment of mutual striving for improvement.

A commitment to collecting and using multi-year data can be a trap, however. For perfectly accurate comparisons over time, the survey questions must be worded in the same way and administered in similar circumstances each year. Yet “ongoing evaluation should be dynamic in nature, reflecting new knowledge and changes in the environment” (Powell, 2006, p. 106). This case study demonstrates that the year-to-year consistency required of a rigorous scientific survey is not necessarily desirable in the field. Modifications to the survey instrument were necessary in order to reflect new program elements, take advantage of new technologies, and address emerging areas of concern. Texts on survey design caution against long questionnaires, so over the years some questions were dropped. The number of questions has never exceeded nineteen. This case study argues for a practical balance between the consistency needed to gather comparative data from year to year and the flexibility needed to keep the assessment process relevant.

**Small-scale evaluation**

When students evaluate LibLEEP, they provide data that is detailed enough to be actionable. Broader assessments may convey a general sense of a program’s effectiveness, but not enough information to drive change. For example, graduate-level distance education programs at the University of Illinois are reviewed every five years by the Graduate College’s Committee on Extended Education and External Degrees. According to an internal report of LEEP’s last such review in 2006, satisfaction with library services is high among both faculty and students. A general question about library services, however, does not provide meaningful data for reviewing the information literacy components in particular. Similarly, the UIUC Library undertook several institution-wide surveys during the decade covered by this case study. A survey of graduate and professional students in 2004, for example, provides some evidence for the assertion that LIS students make relatively heavy use of the library, compared to other graduate professional students.
in fields like business and social work. However, the survey did not differentiate between on-campus and distant graduate students (Services Advisory Committee, 2004). Similarly, demographic variables for LibQUAL+ surveys conducted at UIUC in 2000, 2001, and 2008 did not break out users at a distance.

Broad surveys of academic library users are not designed to generate micro-level data, but rather to pinpoint broad service areas that need attention or to provide evidence of the library’s impact on institutional goals. Despite the almost total focus now within the library assessment literature on the big questions that drive institutional priorities and resource allocation, there is a clear and compelling need for small-scale evaluation at the level of departments, majors, and even individual classes. Through such efforts, librarians become better teachers, and library instruction becomes more responsive to student needs and preferences. As Ariew and Lener (2007) point out, “teaching evaluation forms ideally needed to be tailored to specific classes, teaching objectives, and learning outcomes” (p. 512). This case study affirms the value of small-scale evaluation.

**Self-reporting and “reaction data”**

Student evaluations of library instruction have been criticized because self-reporting is highly subjective. Perceptions may not mirror reality. Just because a student is satisfied with a library instruction session does not mean he or she actually learned what the librarian intended to teach, nor does it mean that the student can put that knowledge to effective use. For these reasons, reaction data may be dismissed as a poor basis for making changes to a program. Over the past decade, thinking in the field has shifted toward measuring learning outcomes in substantive ways and student feedback through surveys or focus groups has been devalued compared to more rigorous methods, such as pre-tests/post-tests, student portfolios, and annotated bibliographies. Trustworthy assessments of instructional success and students’ information literacy, the experts assert, are better achieved using objective techniques (Oakleaf, 2010, p. 15).

Its deficiencies notwithstanding, the survey method for gathering student feedback has certain intangible benefits. First, students are often grateful and surprised when their opinion is sought. By soliciting feedback from students about their recent experiences, a librarian affirms that their opinions matter. This helps to cement a relationship between the librarian and her users, which in turn may increase students’ comfort in asking reference questions. Second, by including open-ended questions on a survey, the librarian allows students to speak in their own voices and share their individual concerns. This can lead to the discovery of strengths or weaknesses in the program of which the librarian was not previously aware. Although reaction data cannot tell the entire story, this case study shows that student feedback can provide motivation for substantive improvements.

**Revisiting Earlier Lessons**

When the LIS Librarian first began collecting student feedback and pondering its meaning, she observed that LEEP—and probably online graduate LIS education overall—had characteristics that set it apart from most distance education (Searing, 2004b). First, the LIS curriculum is information-intensive and makes heavier-than-average use of library resources. Second, the library as place is surprisingly important. And third, librarians responsible for serving LIS students are perceived as professional role models.

Have these factors remained salient? Certainly LIS students’ hunger for information is as intense as ever. Information retrieval and use are at the heart of the discipline and students demonstrate their knowledge by creating information products. In their comments on the evaluation survey, students often complain about information overload—“too much, too fast”—yet they also express disappointment about subjects that were not covered. The information-intensive nature of the field is corroborated by quantitative data, such as reference and document delivery statistics. For example, LEEP students initiated 77% of the article delivery requests made by distance education students in the 2010-11 academic year (C. Weible, personal communication, December 9, 2011), although they constituted only 25% of the total students registered in UIUC online programs (K. Gustin, personal communication, December 12, 2011).
As already discussed, students’ enduring fondness for the library tour is evident in the survey responses, confirming the earlier observation that the physical library still matters to LEEP students. The tour of the Main Library, an impressive edifice built in the 1920s, seems to instill in the students a sense of belonging on the campus and connects them, as aspiring information professionals, to the long and respected tradition of librarianship. The perennial fascination that the physical library holds for LEEP students confirms the value of the “library as place” even among technology-savvy online learners.

As Latham and Smith (2003) stressed, there exists an “obvious connection between the provision of library services and the education of future information providers,” and “it would be especially ironic and vexing if students enrolled in LIS distance education programs were receiving limited and/or inferior services” (p. 122). The perception of the LIS Librarian as a role model is occasionally made explicit in students’ survey comments, which have described the librarian as a “consummate pro” and a “role model for us all.” However, since none of the survey questions deal directly with this topic, the evidence is largely anecdotal. Their obligations as role models motivate the LIS Librarian and her assistant to provide exemplary service and to model best practices—including user-centered assessment.

Future Directions

Because students’ time is a scarce resource during LEEP boot camp, an honest assessment of the library components must explore the possibility of alternative approaches to information literacy instruction. As described above, the face-to-face workshop on remote use of the library was discontinued after a LibGuide was created that served the same purpose. Should the time allotted during the boot camp for library-related instruction be further reduced? According to two survey questions which uncovered student preferences for the timing and mode of library instruction, the answer is no.

Since 2006, the evaluation survey has gauged students’ preferred mode for delivery of library instruction (see Figure 6). The data revealed a clear and continuing preference for face to face training. They also pointed to a sizeable minority who prefer online tutorials and guides, and an even larger minority for whom delivery mode does not matter. These results are mildly surprising. It was assumed that, as the years went by, entering students would be increasingly comfortable with online asynchronous learning tools and would express less and less desire for face-to-face sessions. Perhaps LEEP students, who have chosen to enroll in a blended program that requires brief on-campus residencies, are naturally inclined toward face-to-face learning. Until the trend shifts, the data argue for maintaining a visible and active library instruction program during boot camp. The data also support the continued development of alternative and supplementary instructional resources that are delivered online.

In 2009, a question was added to discern student preferences for the timing of library-related instruction (see Figure 7). LEEP students clearly prefer the intensive, in-person information literacy training during boot camp. The trend lines confirm the librarian’s decision to stop holding poorly attended face-to-face workshops during the mid-semester on-campus session; instead, she holds daily office hours in the GSLIS building during the on-campus period so that students can drop by for reference help. She has also experimented with live online instruction via Elluminate, since distant learners at UIUC expressed an interest in library-hosted webinars (Hensley & Miller, 2010). By using email and Moodle web boards to share links to LibGuides, online tutorials, and instructional videos, she responds to students’ desire to learn about the library throughout the year.

Although to date the survey has not addressed marketing issues, one take-away from the assessment data is the need to promote the optional workshops and LibGuides more assertively before and during boot camp. Moreover, the declining response rate makes clear a growing need to promote participation in the evaluation itself. Since distant learners at UIUC prefer email for communicating with librarians (Hensley & Miller, 2010)—a finding that mirrors the LIS Librarian’s experience—it will be a priority to improve email communications rather than ramp up the use of social media, at least in the short term.
As the yearly assessment of LibLEEP continues, some survey questions will inevitably be retired and new ones substituted. The purpose of the assessment, however, will stay the same: to gather evidence and opinions to improve the program. Past successes in using data from student evaluations to drive instructional improvement are the strongest reason to continue the annual LibLEEP surveys and to analyze the results in a multi-year framework.

*Figure 6. Students’ preferred learning mode.*

*Figure 7. Students’ preferred timing of library instruction.*
References


Notes

1 The official description of LIS502, Libraries, Information and Society, reads: “Explores major issues in the library and information science professions as they involve their communities of users and sponsors. Analyzes specific situations that reflect the professional agenda of these fields, including intellectual freedom, community service, professional ethics, social responsibilities, intellectual property, literacy, historical and international models, the socio-cultural role of libraries and information agencies and professionalism in general, focusing in particular on the interrelationships among these issues.” Retrieved from http://www.lis.illinois.edu/academics/courses/catalog

2 For LEEP students, LIS502, Libraries, Information & Society, is the entry course, and LIS501, Information Organization & Access, is taken after it. For most on-campus students, LIS501 is the entry course, and LIS502 is taken in the second semester. These are the only two required courses for the basic M.S. degree; thus they are the obvious target for course-integrated information literacy instruction.

3 A copy of the 2011 survey instrument is available at https://illinois.edu/sb/sec/5493439
Aided and Embedded: The Team Approach to Instructional Design

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Arizona State University is the largest public university in the United States with an enrollment of 70,440 in 2010. ASU’s online offerings are also expanding rapidly with a target of 30,000 students by 2020. In one program, growth and transformation from hybrid to 100% online demanded scalability to handle large enrollments. Thus an instructional designer joined the faculty/librarian team to facilitate the creation of brief, scenario-based modules that were embedded in an online course and assessed within the course management system. The instructional designer assisted in removing many of the traditional barriers associated with embedded librarianship by helping the team record and edit the modules, inserting them into the courseware, and linking module quizzes to the course gradebook. This paper describes the barriers for librarians in providing online instruction and highlights how the team roles, processes, and outcomes removed the traditional barriers and resulted in successful, embedded, and reusable modules.

Embedded Librarianship

Embedded librarianship offers many advantages for enhancing library instruction, but also presents many barriers for librarians. This paper describes how technological, instructional, and assessment barriers were eliminated through a collaborative team made up of an instructional designer, a faculty member, and a subject librarian. The team created reusable modules that are in their fourth use at this writing. They were produced without the usual problems that plague librarians when embedding modules and assessing student learning within the learning management system (LMS). Team members also avoided some of the more common dysfunctional dynamics in their planning, collaboration, and implementation.

Shumaker (2010, p. 9) describes characteristics of embedded librarianship as the following:

- Customer centric not library centric
- Located in their workplace not our workplace
- Focused on small groups not entire populations
- Composed of specialists not generalists
- Dependent on domain knowledge not only library skills
- Aiming for analysis and synthesis not simply delivery
- In context not out of context
- Built on trusted advice not service delivery

For librarians seeking to support increasingly prevalent online courses, embedded librarianship is an ideal model. Embedded librarians focus on integrating information literacy into online courses, providing seamless integration of information literacy modules into the curriculum through the course LMS (Held, 2010). Though other terms like “blended librarian” “course librarian”, “lurking librarian” and “collaboration by infiltration” have been used to describe similar tightly integrated instruction (Markgraf, 2004, pp.17-18), in this paper the authors use the term to focus on instruction that is embedded within the LMS in an 100% online course.
The advantages of embedded librarianship in the LMS have been noted over the past decade. Advantages include a cohesive and self-contained learning environment for students (Bell and Shank, 2007; York & Vance, 2009), the ability to develop rapport with students over a period of time, and the integration of research skills within the course curriculum. With library modules embedded within the LMS, students don’t have to negotiate a library system that they may view as complex. To encourage module use, librarians supporting online courses must take searching skills modules to students within the course structure (Lippincott, 2005; York & Vance 2009).

One key element for librarians is access to the course shell. When librarians act as a co-instructor or a teaching assistant (TA) within the course, they feel more tightly integrated into the instructional process (Shank & Dewald, 2003). For example, a health sciences librarian that is assigned a teaching role within the course shell can post messages, respond to student concerns, and e-mail resources to students, and view quiz results (Dinwiddie, 2004). The librarian can also create modules that are placed within the course in the correct sequence and that are utilized by students at the appropriate time to facilitate the search experience.

Bell and Shank cite three benefits of using the LMS: “resource sharing, communication, and assessment” (pp. 84-86). In particular, the ability to create assessments that are automatically graded simplifies the integration of information literacy goals into the course and simplifies the grading process for both librarians and instructors.

One of the biggest advantages for embedding the modules is the convenience of re-usability. Short self-contained modules can be quickly revised when they become outdated. Students can return to them at will and view them as many times as necessary to reinforce learning.

**Barriers for Embedded Librarians**

Despite the obvious advantages, librarians often face challenges while seeking to embed instruction within online courses. These include technological barriers, instructional barriers, and assessment barriers.

**Technological Barriers**

Technological barriers can be some of the most daunting barriers librarians face when supporting online classes. Librarians are rarely trained in video production technology and instructional design, though Bell and Shank (2007) advocate for that in their “blended librarian” manifesto. There may not be facilities, staff, or software dedicated to video or module production, and developing these resources may become a bootstrap operation with self-taught skills and loads of frustration along the way. Many librarians lack the software or hardware to produce online modules, and lack access to servers where video files may be stored and retrieved. As librarians take on new roles, convincing administrators that software and equipment need to be purchased can be challenging.

There are many problems with video production that can be frustrating. Schroeder (2010) described time-consuming problems with microphone quality and variations in sound quality when producing videos in Camtasia. Tutorials often needed to be re-recorded to correct problems in sound quality. Graphic and content design can be an issue where the tools used are either too complicated or too simplistic. Guillot, Stahr and Meeker (2010) also noted that videos must be posted to the web and tested before deploying.

**Instructional Barriers**

Sherwill-Navarro and Layton (2006) noted that librarians had a “knowledge gap” in instructional design and had underestimated the time needed to convert written handouts into online tutorials. In turn, librarians discovered that the instructional design team member didn’t understand database index searching or other information seeking skills. Team members became frustrated over differences in expectations on
the level of sophistication of modules, and became aware that library modules are different than the semester-long courses the instructional designers traditionally support.

Morrison and Anglin (2006) highlight the practice of taking information from one source and simply putting it on the web without regard for e-design principles. They call this practice shovelware and give numerous examples of creating online courses with already existing materials. Though a lot of content can be presented this way, if instructional design principles are ignored, the instruction may be ineffective or boring. Guillot et.al. (2010) note that “knowledge of the courseware is essential” (p. 60). Even getting access to the course shell may be difficult. Once in, librarians may not be able to function in an unfamiliar instructional environment.

The role of co-instructor in an online environment can also be a challenge for librarians. Librarians need confidence to face an instructor as an equal and must convince faculty that library instruction is valuable for student learning (Schulte, 2008). Schulte presents four challenges to the process of teaching online: time to meet with instructors, become familiar with the textbook, write scripts for the modules, and produce the videos.

Assessment Barriers

Lo and Dale (2009) studies “students’ expectations of and satisfaction with” tutorials using pre- and post assessments but didn’t assess knowledge of content. They also had problems getting students to complete librarian created tutorials and reported that only three students had “used the tutorials in full” (p. 156).

Librarians have also encountered the problems of verifying that a student has completed a quiz and then seeing that quiz results are reported to an instructor. Dando (2005) describes how an LMS solved the problems of instructional support and assessment with her high school students. By utilizing the test and survey functions of Blackboard, she had hard data illustrating student gaps in information skills in a matter of minutes. Having access to the course shell greatly adds to the ability to assess library modules effectively. Unfortunately, not all librarians have access to the LMS course shell.

Background

The College of Nursing and Health Innovation at Arizona State University (ASU) is a national leader in Evidence Based Practice (EBP). Within the baccalaureate completion (RN to BSN concentration), three major components shape the curriculum: the critical use of research, community health, and management/leadership. All are based upon the principles of EBP.

The key course focusing on EBP research skills, titled “Methods and Critical Appraisal for Evidence Based Practice” is the second course in the concentration. Earlier, the students learned basic library skills and how to write a PICO (T) question as the foundation of searching for evidence relating to a practice question. The PICO(T) question consists of the population of interest (P); intervention of interest (I); comparison of interest (C); outcome of interest (O); and an optional timeframe (T) of interest (Melnyk and Fineout-Overholt, 2011).

The components of EBP include the utilization of evidence from research, theories, and expert panels; evidence from patient history and physical assessment; clinical expertise; and patient preferences regarding their care (Melnyk & Fineholt-Overholt, 2011). Key to this philosophy is developing searching skills for finding the best evidence for practice decisions.

Nursing faculty within the RN to BSN concentration have been early adopters of technology for online users. Over time, the nursing faculty have been willing collaborators and innovators using technology as it has evolved. This includes using video transmission of courses to remote students, group consultations using Adobe Connect, and adapting to new features in the LMS.
Due to the college’s focus on EBP research skills, Health Science Librarians at ASU quickly established rapport with faculty through face-to-face sessions and then in scheduled instructional sessions with students. As the course moved from face-to-face to hybrid, technological issues became a challenge as librarians struggled to impart skills to students using online models, conducting Adobe Connect sessions and crafting tutorials without basic skills and software. Many of the issues left students, faculty, and librarians feeling library sessions were frustrating and ineffective due to the limitations of the technology.

**Student Demographics**

The students enrolled in the RN-BSN concentration vary from new graduates savvy in online learning to mid-life returning nurses who have only participated in face-to-face classes. Many of the students are graduates from an associate degree program. With a curriculum that is now 100% online, students come from all over the United States and international countries, though the majority live in the Phoenix metropolitan area.

While time zones can present barriers to synchronous learning activities, most nurses work in 24 hour settings, so even the local students have challenges when attempting any synchronous work. In the ASU Online course environment, deadlines are set according to Mountain Standard Time (US) and the students must understand the necessary calculations pertaining to their particular time zone. Most students have both family and work obligations in addition to their coursework requirements. All of these factors make scheduling synchronous online library sessions difficult and favor student-centered modules contained within the course shell that are available round-the-clock.

**Online Students and the Library**

In a 2010 survey of an online user group, the librarian serving ASU Online campus discovered that a high percentage of responding students were either unaware of or had never used library resources. Though these students reported being comfortable with tasks like connecting a peripheral device to their computer, downloading and uploading images or files, and submitting assignments online, they were not particularly comfortable using library resources. Results from this survey reinforce the need to embed library resources within the course shell where they are integral to students’ success in the course.

Students who believe they are adept at finding information on the web may fail to think of the library or a librarian as an information source for research (see Figure 1). In fact, only 5.8 percent of students in our survey would think to ask librarians for help with their courses, slightly higher than the percentage that would ask their children for help! More than half of our respondents either did not know about library services, and resources, or knew about resources, but had not used them. Librarians have speculated about the reasons students avoid using library resources. They may be reluctant to go outside of a self-contained online course shell to negotiate unfamiliar and complex library databases without the structure and guidance that an LMS provides.
Librarians at ASU wanted the library to be visible within the LMS. In 2010, we succeeded in getting a link to ASU Libraries in every BlackBoard course shell. That year librarians also negotiated the inclusion of an ASU Libraries search widget in the BlackBoard course shell and used a group process to decide what features the search widget should include. Though these achievements helped the library be more visible, the tutorials librarians had created were still located outside the individual course LMS. Faculty who wanted to use them asked students to take the quizzes and self-report on their success, an awkward and inexact arrangement at best.

**The Team Approach to Instructional Design**

With the final evolution of the course to a 100% online scalable format, an instructional designer from ASU Online joined the faculty/librarian team. With this addition, the technological and instructional barriers fell away. The newly composed team agreed on the course learning outcomes and method of delivery. The authors began scripting the content for four basic and four advanced video modules. The library modules were scripted, recorded, edited, and loaded into the course shell. Most importantly, the modules were assessed with quizzes in the LMS. Amazingly, the process was stripped of all the former anxiety and produced successful modules in record time.

**Figure 1.** When you need assistance with coursework, who do you ask for help?
Team Roles

Listed below are common roles for an instructional development team:

- **Faculty Course Coordinator (Coordinator)** is the faculty member that is responsible for the content of the course and the establishment of student assessments, often, also the instructor of the course. With the increased enrollment and scalability efforts, this person also serves to coordinate the efforts of other faculty who work with students on a 1 to 30 ratio within the course shell.

- **Embedded Librarian (Librarian)** sets learning outcomes for the library modules with faculty and then provides the scripts and quizzes. This person also collects screen shots, prepares slides, and does narration for the modules.

- **Instructional Designer (Designer)** is responsible for ensuring that a sound instructional strategy based on learning theories and best practices is used for the design of the course. Often the designer takes on the roles of the instructional technologist and multimedia producer.

- **Instructional Technologist (Technologist)** is responsible for understanding the goals of the course and recommending and implementing appropriate technologies for meeting these goals.

- **Multimedia Producer (Producer)** is responsible for creating multimedia elements, graphics, and videos as specified by the faculty course coordinator and instructional designer. In this case, the designer was able to fulfill the roles of the technologist and the producer.

Principles of Modular and Visual Design

The designer incorporated the research by Dr. John Medina (2008) into the module design; the modules follow his ten minute rule for lecture design. Many faculty attempt to squeeze as much information as possible into a fixed amount of time, however, it is more effective to focus on one core topic for no more than ten minutes. This technique works because learners process meaning before detail. Students need to understand the general concept of what is being presented before they begin to grasp the details. Segmenting instruction also reduces complexity and facilitates learning (Tempelman-Kluit, 2006) and allows for quick revision of individual modules when needed.

Dr. Medina (2008) declares that “Vision trumps all other senses” (p. 221). Pictures communicate more effectively than text. Instead of describing what the students will see, showing them what they will see is more effective. The tutorials focused on showing how the screens and results appear as a search is being conducted.

A principle from Made to Stick is that stories will help make certain ideas more memorable. Simple stories can take a credible idea and invoke an emotional response that motivates the student to focus on learning and applying skills (Heath & Heath, 2008). We included a scenario in the demonstration tutorials that provides context.

Production Process

The coordinator and designer developed the following student learning outcome: “Find the best evidence to answer the clinical questions through the search of existing health care databases and other sources of valid and reliable evidence.” This outcome is assessed through a high-stakes assignment when the students submit an evidence-based practice paper that includes a literature search based on a PICO (T) question that the student has developed.

The team met to discuss how best to provide instruction on the health care related databases to which the university library has subscribed. The designer suggested creating focused mini-lectures that incorporated a video-based demonstration of a research database. The team decided that a low-stakes assessment be implemented to encourage the students to view the mini-lectures and to test knowledge and understanding of the research databases prior to conducting their own literature search. The team selected the topics and databases that would be presented to the students (see Table 1), and the librarian created the scripts and storyboards for the eight tutorials.
The librarian first brought a script that was too ambitious to be practical. It included graphics, interactive practice, and video. After a brief consultation with the designer, the librarian realized the complex script could not be produced in the allotted time and revised the script to bring it in line with the team’s expectations and time allocation. The team decided that two of the tutorials would be voice-over PowerPoint presentations due to their explanatory nature, and the remaining six tutorials would be recorded as voice-over screen capture recordings since they were demonstrations of how to use the database tools.

Prior to recording, the team reviewed and edited the slides to ensure that they were highly visual and that they did not contain a “screen full of text.” The first recording session was conducted with the entire team present and focused on the “basic” tutorials. The designer provided a studio-quality microphone connected to a computer. The librarian brought completed scripts and did the narration. The coordinator provided content consultation throughout the process. Each tutorial was recorded once as a draft so that the design team could make final edits to the script and visuals. Afterwards, a final recording was made.

Two of the tutorials were recorded with Camtasia Studio from TechSmith (http://www.techsmith.com/camtasia/) and were scripted with screen shots in PowerPoint. The remaining tutorials were recorded using ScreenFlow from Telestream (http://www.telestream.net/screen-flow/). The tool records the display of a computer while the audio is recorded, allowing what the speaker is saying to be synchronized with what is on the screen. During the post-production process, it was possible to zoom in on key locations and highlight where the mouse was located on the screen in order to focus the student’s attention to what the speaker was describing.

These tutorials were compressed into MPEG4 videos and uploaded to Vimeo, a web-based video service that allowed for the embedding of video into the LMS. The basic skills tutorials were introduced in the second week of a seven week course and the advanced skills tutorials were introduced in the fifth week of the course.

The design team included a discussion board with the tutorials to facilitate a dialog between the students and the librarian about using the databases for researching a PICO(T) question. For students taking online courses only, the LMS, Pearson LearningStudio, allows for the embedding of content in the introduction of a discussion board, with the discussion area directly below the modules. A key factor to success is that the librarian was given access as a partner in the course and was able to respond to student questions directly on the discussion board.
Finally, the librarian created two eight-question multiple choice quizzes, one for the basic skills tutorials and another for the advanced skills tutorials. The design team reviewed and edited the quizzes. The quizzes were implemented in the LMS, and students were limited to one attempt to complete the assessment. In addition, automatic grading was enabled to reduce instructor workload and provide automatic feedback to students. The two quizzes combined accounted for 10% of the course grade.

Re-usability

To date, these modules have been used for the four instances that this course has occurred. In addition, the videos have been made available and used in other courses including a nutrition course.

Student Assessment Data

Over the first four course offerings 186 students completed the basic skills tutorial quiz with a mean score of 7.19 out of 8 (sd = 0.91). The results are reflected in Table 2.

Table 2

Frequency Distribution for Basic Skills Tutorial Quiz

<table>
<thead>
<tr>
<th>Points Achieved</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>85 (45.70%)</td>
</tr>
<tr>
<td>7</td>
<td>62 (33.33%)</td>
</tr>
<tr>
<td>6</td>
<td>29 (15.59%)</td>
</tr>
<tr>
<td>5</td>
<td>9 (4.84%)</td>
</tr>
<tr>
<td>4</td>
<td>1 (0.54%)</td>
</tr>
</tbody>
</table>

182 students completed the advanced skills quiz (see Table 3) with a mean score of 6.38 out of 8 (sd = 1.05). When analyzing the student performance, we discovered that the concept causing the most difficulty relates to what happens when you “explode” a subject heading in CINAHL; 55 (30.22%) students answered this question correctly. Another concept that students had difficulty with related to when to use PubMed’s Advanced Search Builder feature “Show Index;” 105 (57.69%) students answered this question correctly. When revisions are made, both concepts will be emphasized to correct student misunderstanding.
Table 3  

*Frequency Distribution for Advanced Skills Tutorial Quiz*

<table>
<thead>
<tr>
<th>Points Achieved</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>23 (12.57%)</td>
</tr>
<tr>
<td>7</td>
<td>66 (36.07%)</td>
</tr>
<tr>
<td>6</td>
<td>61 (33.33%)</td>
</tr>
<tr>
<td>5</td>
<td>23 (12.57%)</td>
</tr>
<tr>
<td>4</td>
<td>7 (3.85%)</td>
</tr>
<tr>
<td>3</td>
<td>2 (1.10%)</td>
</tr>
</tbody>
</table>

**Conclusion**

Several key factors have emerged as critical when developing library assistance for an online student:

First, the embedded librarian must be a member of the instructional team and an equal partner in the collaboration process. While the librarian may not be a technical or instructional expert, the librarian can rely on those on the team that are in order to ensure that the appropriate message is conveyed to the student. When the embedded librarian is not a full member of the team and is only called upon when needed, many opportunities can be missed.

Second, modules must be designed as small reusable learning objects in order to be more conducive to student learning. Students are also more willing to review a six-minute tutorial on a single topic than a thirty-minute presentation on multiple topics. In addition, this design allows for rapid revision of the modules when searching interfaces and tools change.

Third, embedding the assessments of the learning modules and making them count toward the final grade sends a strong message to the students that the topic is important and should not be overlooked. While each assessment separately was a low-risk activity, the two assessments combined would impact a student’s course score by one letter grade.

Finally, the librarian must be present in the online course to directly interact with students. Students tend to not reach out beyond the course environment, even when doing so can preserve their academic success. Having a librarian as part of the instructional team removes this barrier.

The team approach eliminated the barriers of technology, instruction, and assessment so that the library and the embedded librarian are an integral, visible, and accessible part of the course. Using this approach, the students are more likely to contact the embedded librarian to assist them in their library searches. The reusable nature of the learning objects led to a consistent experience for the students in the course since they were allowed to revisit the modules at any time. Comments by students and instructors indicated that the modules were highly effective. Students noted that they only wished they had had this type of instruction earlier in the curriculum. Plans are in place to revise the modules as needed and continue to employ them in the RN to BSN program and other parallel nursing tracks.

ASU has given priority to student success and retention. The University has also committed to providing university degrees to increasing numbers of students in Arizona, the nation, and the world. The
online modules are both effective and scalable to growth in online students planned for the future. They are an effective solution for incorporating information competency skills in online courses. Team members credit their success partly to the team’s collaborative approach. When all team members are open and share the same goals for student learning outcomes, the stage is set for a synergistic process that reduces barriers and increases the likelihood of success.
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Embracing a Customer Service Mindset: A Fresh Examination of Services for Distance Learners

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Library literature and blogs frequently discuss customer service and user experience in physical libraries and websites, but little is said about this mentality toward services for distance learners specifically. This paper takes customer service best practices from well-known thinkers of the business world and makes connections to services for distance populations. A literature review establishes the current state of discussion in libraries regarding customer service and a directed self-reflection of the reader’s own customer service approach sheds light on personal current practices. The paper presents a number of thought-provoking business ideologies and concrete applications in services for distance learners such as reference, web presence, and interlibrary loan, ultimately showing the value of venturing out of library literature to gain a fresh perspective, evaluate, and improve interactions distance learners have with the library.

Introduction

Academic librarians are an integral part of the learning experience in higher education, promoting inquiry, information evaluation and use, and lifelong learning. At the same time, library patrons, the students, are paying to learn. Institutions of higher education are nothing if not for the students who attend them. As much as librarians support students’ academic endeavors, they are just as much present to provide services to the students, the customers. Librarians must walk a thin, yet critical line, of engaging teachable moments and promoting information literacy while also providing excellent customer service. Positive experiences keep students coming back and word-of-mouth-marketing in the library’s favor, while a negative experience may cause the complete opposite.

Providing a positive user experience among distance students, where direct interactions are often few and far between, is even more imperative. As such, the experience should be positive and powerful both synchronously and asynchronously, providing an additional challenge. Though discussion of customer service is prevalent in library literature and inherent to examinations of user experience, little is written about the relationship between good customer service practices and services for distance learners. It is worthwhile for librarians to examine their own customer service mentalities and practices towards distance learners and consider where there is room for improvement. Looking outside of librarianship to top business thinkers is an excellent way for librarians to reflect on current norms, gain a fresh perspective, and enhance services for students learning from a distance.

This paper begins with a literature review establishing the current state of discussion in libraries regarding customer service. Readers will then be lead through a guided self-reflection and assessment of their own customer service practices. Finally, a number of ideologies from great business thinkers will be presented. The first will provide a broader context for connecting business-centric thoughts to library services. The author will then use these ideologies to examine and reflect on specific ways services for distance learners may be enhanced or changed to provide better customer service.

Literature Review

Providing customer service in libraries is a long standing topic of discussion. A simple search in Library and Information Science Technology Abstracts (LISTA) for “customer service” yields over 1,000 results. This literature varies in focus, but provides a framework for the elements of customer service ideology that are already pervasive in libraries. The broad principles of customer service and their relationship to libraries are simple enough. As Brannon (2006) asserts: “[w]onderful customer service
increases customer satisfaction, which in turn makes them come back to the store and buy more. Being nice to customers also makes certain they don’t tell their friends how horrible your store is, thus causing you to lose a few more potential customers. Customer service is also the number one priority in libraries” (p. 7).

Multiple authors have made connections between retail and librarianship. Brannon (2006) spent time in retail prior to entering the field of librarianship and lauds the former field’s value for teaching librarians the ropes of good customer service. He ties the benefits of providing a positive customer service experience to the reference interview, usage statistics, and branding (p. 7). Fry (2009) connects retail, specifically book selling, and libraries. She notes “libraries’ service-oriented attitudes,” fulfillment of expectations, provision of “personal interaction and personalized service,” and building of relevant collections (pp. 33-34). Through her observations, Fry shows librarianship is not so far from the ethos of “selling” in retail.

A large amount of the literature discussing customer service in libraries examines the correlation to reference services. Brannon (2006) equates helping customers in retail’s customer service-driven environment with the reference interview: “[i]n both retail and library settings, open-ended questions are best. Repeating what the customer has said to demonstrate you understand is absolutely necessary. Going back to check on a patron to get feedback and make sure they understand will help you determine if you are on the right track” (p. 7). Moysa (2004) describes implementing evaluation of customer service behaviors at the reference desk, specifically: approachability, interest, and positive attitudes (p. 61). Through the creation of these evaluations for all reference staff, Moysa notes her library now recognizes long-standing inadequacies and has increased expectations for staff (pp. 62-63). Reed (2009) looks at what makes a good reference service great and indentifies establishing best practices (including getting to know the community being served), positive attitude, and staff buy-in as simple steps to success. Kocevar-Weidinger, Benjes-Small, Ackermann, and Kinman (2009) even studied the benefits of mystery shopping the reference desk, an exercise in which “a proxy acts as a shopper and then rates his/her experience, based on criteria provided by the employer” (p. 29). As a result of their study, the authors assert “library patrons will be judging our efforts not just on accuracy but on customer service. Using mystery shopping provided each university with detailed results about our staffs’ professional behaviors on the reference desk” (p. 39).

Virtual reference is occasionally discussed in the literature as a mechanism for building customer relationships. Back in 2003, Cichanowicz discussed adding chat reference as a means to increasing customer satisfaction: “Suffolk librarians …see [chat] as a mechanism to achieve greater customer satisfaction by desktop delivery of information” (p. 28). She also notes specifically the value of chat for “[bringing] meaningful interactivity to an increasingly chaotic online environment...[and branding] the library as a provider of personalized information delivery” (p. 32).

Balas (2008) noted how customer service now goes beyond just our personal interactions onto the web, specifically website design. She states: “we must evaluate the design and functionality of the library website to make sure the customer service it delivers is as good as or better than the service provided within the library itself” (p. 37). Balas then goes on to list various resources on web usability testing and ensuring accessibility. Similarly, Wilson (2004) recognizes “building a sound technological infrastructure of customer-oriented services helps to level the playing field” (pp. 94-95). She points specifically to web portals, library catalogs with self-service, customer-orientated service features, discovery services, and RFID technology for improved efficiencies.

In 2010, Hillyard culled together perspectives on customer service from five public librarians. The collection of essays connects many of the ways to ensure “everyone associated with the library” practices good customer service and reflects that “impetus comes from the top, but the effect spreads throughout the organization” (p. 13). Concepts discussed in these essays range from building customer service into policies to the power of being happy, positive and nice to creating an organization culture around great service. All of the concepts presented are far from obtuse, but critically reliant on buy-in from all parties. Providing good customer service is more than good practice, it is a state of being.
Spinning off many of these thoughts are the discussions of user experience in librarianship. Perhaps the best known voice in this movement is Steven Bell. Bell frequently writes about the power of user experience in the literature and blogosphere. Though his writings originate in design thinking, Bell (2009) more recently delved into applications of the WoW experience for libraries, noting the five major areas that cultivate a great shopping experience (“engagement…executional excellence…brand experience…expediting…[and] problem recovery”) all have direct applications for user experience in libraries. In this vein, Bell later replicated the Study of Great Retail Shopping Experiences in North America in two academic libraries for an ACRL 2011 Conference Paper. In the study, Bell found academic librarians are actually doing much better than they likely perceive, but should still “…look for ways to improve processes to make using the library more seamless, convenient and time saving” (p. 121). As evidenced by Bell’s work, the core concepts of customer service discussed throughout this review are the building blocks of a positive user experience, a concept that will be reinforced as this paper delves into the minds of some great business thinkers.

Finally, the key off shoot of customer service is the free marketing that results. When it comes to word-of-mouth, the power of customer service, good or bad, cannot be overstated. In reference to public libraries, specifically, Brannon (2006) asserts “through a campaign including word of mouth, print advertising, and excellent service, the library effectively makes it known that they are the go-to place for the community’s informational, recreational and computer needs” (p. 7). Word-of-mouth marketing is an inevitable piece of the customer service experience for all user populations, whether a library is focusing on providing a good experience or not. Knowing the effect word-of-mouth may have on user perceptions (positive or negative) should be motivation in and of itself to foster of culture of customer service.

As evidenced by this overview, libraries have long thought about how a focus on good customer service can improve their services. Though this literature well covers reference, and in small faction virtual reference, as well as the role customer service plays in website design, overall, discussion of customer service lessons applicable to library services for distance learners is quite limited. In 1996, Wehmeyer et al. recognized what corporate literature had to offer academic libraries, and documented implementing a customer service plan. Key takeaways were: “front line staff are the vital link…service is a product…understand your customer…and there is no quick fix” (p. 174). Fifteen years later, librarians can and should still look to business thinkers for inspiration. Embracing customer service ideologies can help libraries provide a better user experience, foster positive word-of-mouth marketing, and work toward additional ways to prove their value. By looking directly at discussion of customer service from the perspective of great business thinkers, librarians serving distance learners can reflect on lessons that may be applied to the unique body of services inherent to serving those who never come to the physical library.

**Self-evaluation Based on Jeffery Gitomer’s Customer Service Test**

In *Customer Satisfaction is Worthless, Customer Loyalty is Priceless*, Jeffrey Gitomer (1996) proclaims: “[e]very time a customer calls or you call a customer – you have an opportunity and a choice….Treat every customer as though they were your favorite celebrity, hero, friend, neighbor or your grandma” (pp. 47-48). Gitomer’s book is packed full of ideologies, probing questions, and a plethora of ways for anyone in the position of serving customers to be better. One of the most valuable elements of Gitomer’s book is “The Customer Service Self-evaluation Test.” In the introduction to the test, he notes: “[t]his test will hurt if you take it honestly. This test will help if you use it as an evaluation tool (as it is intended to be). This test is the basis of your personalized plan to achieve greatness in serving others” (p. 145). It is worthwhile for any librarian in public service (and those not, for that matter) to read through many of these questions and honestly assess where they fall on a 1 to 5 scale, with 1 being Poor/Never and 5 being Greatest/Always. The self-evaluation consists of over 50 questions, but here are some to facilitate a bit of self-reflection:

- “I act like today (every day) is my first day on the job. Impress everyone” (p. 145).
- “I’m friendly all the time. I show enthusiasm. I stay positive all the time” (p. 146).
- “The first line I deliver sets the tone. Mine is friendly and reassuring” (p. 146).
- “I make sure the customer knows my name” (p. 146).
- “I use words of encouragement” (p. 147).
• “Even though it’s the 10,000th time I have to say it, I say it as if it’s the first” (p. 147).
• “I know what my ‘favorite’ products are and how they are used” (p. 147).
• “I empathize with the customer’s problem first” (p. 149).
• “I know it’s not about what I say, it’s how I say it. I always say it in a positive way” (p. 150).
• “I substitute the words, ‘so we can be fair to everyone’ for the word ‘policy’” (p. 151).

These ten questions should all evoke something in a librarian evaluating his or her own customer service skills, as well as the overall service provided to patrons. Distance students are immediately thought of, as so many of these questions easily apply to virtual communication. How does one approach email and chat reference questions? Is the opening line reassuring or trite? Does one always make sure the student calling knows who they are speaking with? Is a positive tone consistently used in conversation? Is one encouraging? When the seemingly 10,000th student asks how to find a known article, does one grumble or happily provide directions…again (or better yet, already have step-by-step instructions available through a tutorial or guide)? Does one know the library’s products, the databases, how to use them well, and which databases have the best content for the different subject areas served? Does one discount why a student may be struggling, or empathize and work through things with them? Is the word policy thrown around or is Gitomer’s seemingly genius, but so terribly obvious, substitution used? It is easy to start thinking of simple ways to change behaviors and provide a better customer service experience.

Making Connections Between Customer Service Theories and Services for Distance Learners

The Customer Service Self-evaluation Test is a great ice breaker for thinking about personal customer service practices and attitudes towards service, but it is worth sticking with Gitomer a bit longer for his “12.5 Principles of customer service success.” His book is rooted in these principles and they can help one move beyond personal customer service practices to connections between customer service and services for distance learners. Upon presenting each principle, Gitomer offers a tangible way to make it part of one’s daily practice. These “JustTryThis” prompts offer continued value for assessing the current state of things and readers are encouraged to look at the text to consult them. A number of the 12.5 principles will be discussed here to offer a general overview of how customer service ideologies provide a reality check and may assist in enhancing library services.

Gitomer’s first principle is: “[y]our customer is your paycheck.” In academic libraries, these customers are the students who pay tuition and become alumni that make donations. As Gitomer states: “[d]on’t be fooled by the signature at the bottom of your payroll check – the guy who signed the check didn’t put the money there – your customer did. No customers, no money” (p. 73). Though a little painful to accept sometimes in academic bubbles, this is simple truth, and librarians need to recognize and accept students are, in fact, customers. As also brought out through the Self-evaluation is Principle 2: “[y]our attitude (the way you dedicate yourself to the way you think) determines the degree of excellence of services you perform” (p. 74). Librarians who visibly enjoy their work and present an air of enthusiasm are more welcoming: students can tell.

The third principle really resonates as soon as one considers library anxiety: “[c]ustomers call, contact, or visit for one reason – they need help!” (p. 75). Library anxiety is well-documented in the literature and with distance students being physically disconnected from the campus and library one cannot underestimate the significance of a student writing or calling for help. Librarians should value every interaction that occurs with distance students and provide the best possible customer service experience. When that great experience happens (or does not happen), Principle 5 comes into play: “[a] customer ready to repeat his purchase is a powerful business advantage” (p. 77). For libraries, the more services and resources are used, the greater an arsenal can be built for proving our worth and justifying maintained budgets and the needs for staffing and resources.

A chunk of the principles harkens back to the discussion of word-of-mouth marketing in the literature review of this paper. “When you’re done speaking with a customer or the transaction is over, that’s when they start talking” (p. 80). Are students going back into their online classrooms and telling their colleagues how helpful the librarian was, how they feel so much better about their research now that they asked for help? Or, on the flipside, are students sharing that contacting the librarian was a waste of
their time? All the while one must keep in mind principle eight: “[w]ord-of-mouth advertising is 50 times more powerful than advertising” (p. 81). The last few principles speak to a customer service ideology well-established in the literature review: positivity. “Your friendliness and willingness to help is in direct proportion to your success” (p. 82). Finally, pulling all of the other principles together, is principle 12.5: “[t]he customer’s perception of good or bad service is the measure of your success or failure” (p. 87).

**Using Customer Service Theories to Improve Library Services for Distance Learners**

With the self-evaluation complete and Gitomer’s Principles translated from the business world to libraries, specifically services for distance learners, one can now look deeper at Gitomer and other business thinkers and apply customer service ideologies directly to services. Starting by thinking back on Gitomer’s 12.5 Principles, the application to communication with students is most prevalent. Resulting questions from these principles thus include:

- Do patrons have a consistent experience each time they contact the library for help?
- Are emails written professionally? Is the style consistent?
- Is a turn-around time guaranteed and maintained?
- Are services provided (like interlibrary loan or book delivery) consistent in quality and presentation?

How can librarians serving distance learners ensure the above customer service driven elements are happening? A number of possible adjustments and best practices come to mind. Perhaps the most tantamount element of providing good customer service to distance students is the experience students have when contacting the library for help. Many of the concepts brought about by Gitomer’s Self-evaluation and Principles come about here, but how does one guarantee students are consistently greeted warmly, know who they are speaking with, hear an overarching positive tone, and feel their questions and concerns are being understood and addressed? In respect to virtual reference interactions specifically, having established and practiced virtual reference standards is an excellent first step. The Reference User Services Association (RUSA) provides high-level guidelines for this through the Provision of Service section of their **Guidelines for Implementing and Maintaining Virtual Reference Services**. Specifically, Section 3.3 on Service Behaviors highlights interpersonal skills, professional competency, and the reference interview, among other important essentials. All librarians serving distance students should be familiar with these standards and have an active application in place at their own library.

Feeding off of virtual reference standards is the importance of style guidelines, specifically for written communication. In chat virtual reference interactions, a more casual tone is typically acceptable, but email should likely be treated as more formal correspondence. Basic email templates used by all librarians with consistent greetings and signatures are a simple way to facilitate regularity and provide a common thread. Style guidelines built into virtual reference standards should also emphasize proper grammar and punctuation, as well as appropriate tone. In those somewhat more informal chat reference interactions, where the discussion can often feel disconnected despite the synchronous communication, one specific tool does an excellent job of facilitating high-quality customer service. **LibraryH3lp** (http://libraryh3lp.com), a chat reference system created specifically for libraries by librarians does come at a nominal cost but is arguably worth every penny when it comes to potential return on investment in positive word-of-mouth marketing. **LibraryH3lp** allows for the creation of custom queues, putting users at specific points in the online environment in touch with an appropriate librarian or staff member. This robust tool also presents the ability to transfer active chats between librarians or staff members, sending students to experts or the appropriate person or department as needed. Referring URLs at the top of each chat box allow for more effective service, as the librarian can see exactly “where” the student is (a database, inside the learning management system, a specific page on the website, etc.). Perhaps one of the best features of **LibraryH3lp** is the level of customization available, which includes the option for custom tailored offline messages. No orphan questions that impossible to answer with this chat service!

Through all of the above (virtual reference standards, style guidelines, templates, and utilization of appropriate tools), little can be accomplished or ensured without proper communication of expectations and training. If librarians work in silos there is no feasible way consistent answers can be provided. Not only
training on standards for communication, but also policies (does everyone know what is “fair,” per Gitomer’s words) is imperative. This goes beyond reference staff to anyone who communicates with distance constituencies, including Circulation and potentially Interlibrary Loan staff. In addition, keeping lines of communication open regarding recurring issues, questions, or assignments all works toward providing consistent answers. An excellent way to facilitate the latter without necessarily sending flurries of emails is to maintain qualitative reference statistics. There a number of ways this can be accomplished: document or spreadsheet living in a shared drive, Google Docs setup using custom forms and a spreadsheet, ZoHo (http://www.zoho.com), and others. No matter the tool, having a repository that all service personnel can look to for insight on questions being asked and answers provided is invaluable.

Beyond consistency in communication and shared common knowledge by all having contact with distance students are the higher level service pieces. Are appropriate service hours maintained for distance students? Even if synchronous reference cannot be available for students in every time zone, is e-mail checked daily? Is there a guaranteed and maintained turnaround time for answering student questions? Are these hours, service points, and turnaround guarantees clearly communicated both to staff and constituencies? These elements should be established as appropriate for each library’s user population and staffing abilities and built into standards and policies.

One final element stemming from reflection on Gitomer’s 12.5 Principles is related to the above point, but looks beyond reference communications. Other key services for distance students beyond reference help are frequently interlibrary loan of articles and book delivery. Are articles and books delivered in a consistent manner (e.g. always electronically delivered in the same format or shipped and packed the same way)? Are their options or notifications in place for students to track the status of their requests? Are the procedures and system for this clear to students so they have realistic expectations? Though the quality of these services can be maintained through homegrown, local solutions and practices, a for-cost option many libraries have adopted is ILLiad (http://www.oclc.org/illiad). ILLiad allows for streamlined and user friendly requests and delivery, from auto-completing forms to electronically delivered articles to request tracking and beyond.

Moving away from Gitomer, one of the greatest business thinkers of this time is Seth Godin. Godin philosophizes regularly in his many books and on his personal blog, offering thought snippets that can quickly have one reexamining their own services and attitude. Godin frequently connects customer service with marketing. In Small is the New Big (2006), Godin states: “[c]ustomer service…is the cheapest form of marketing” (p. 61) and “functionality is the new marketing” (p. 100). Thinking about services for distance learners specifically and the word “functionality” here, customer service is most definitely more than just the personal interactions librarians have with students, whether synchronous or asynchronous. Customer service also includes to the ability to find what one needs, when it is needed. This relates to many pieces of services for distance learners, causing one to ask:

- Are library resources and services virtually positioned for high visibility?
- Is there point of need assistance?
- Is web copy clearly and concisely written with easily digestible content?
- Are asynchronous instructional materials presented to accommodate varying learning styles? Do they meet accessibility standards?

Providing good customer service to patrons at a distance is innately connected to being where the students are. In many ways this is more challenging when working with online constituencies, but there is still a world of opportunity. Thinking more about the value of customer service as a marketing piece, as well as the role of pure functionality in marketing, one of the first things that comes to mind is visibility: how noticeable is the library to distance learners? In the disconnected world of online and distance education, librarians cannot expect students to “remember” the library and immediately come looking. Library services and resources should be as visible as possible, and this can be accomplished in many ways. Library presence in the learning management system (LMS) is a huge boon to visibility, whether through a prominent link, an entire dynamic library page, an embedded librarian, or other means. Even just links to Ask-a-Librarian in places where students are most likely to have research questions, like assignment pages, are a step towards greater visibility.
Presence in the LMS, particularly the last point of Ask-a Librarian links at the point-of-need, speaks to a large piece of functionality. Students searching library databases or utilizing other resources will likely not naturally think to look for a tutorial or help page to guide them along the way. Placing links to how-to-guides and/or video tutorials where students are mostly likely to ask questions is far more likely to prove helpful than all guides/videos being centralized in a Research Guides section of a website. Linking to tutorials as part of a database description and embedding video tutorials in databases are two possibilities. Further, as in the LMS, Ask-a-Librarian options should also be available at the point of need. It is hard enough to get students to ask for help without also asking them to dig for the options. Embed chat widgets inside databases and the catalog. Put links to send an email in tutorials and guides: anywhere that makes sense.

In addition to resources and services being visible, it also needs to be accessible. Web copy should be free of library jargon that students are not likely to understand. One should write guidance or instructions on the web as they would explain it to someone standing in front of them. Further, follow the words of Ranganathan and “save time of the reader” (http://en.wikipedia.org/wiki/Five_laws_of_library_science). The longer and more text-laden a guide gets, the less likely a student is to read it. Beyond basic understanding of the audience and readability, librarians should also consider learning styles, as well as disabilities. Are asynchronous instructional materials provided for visual, auditory, and kinesthetic learners (e.g. text with screenshots allowing a student to follow along step-by-step, videos with audio, and videos or guides with built in quizzes/activities)? Further, are these materials accessible? If possible, videos should have closed captioning, and at the very least text equivalents or scripts available. Images need to have alt tags so they may be used by screen readers. In her 2011 article on screencast accessibility, Joanne Oud provides comprehensive context for this important consideration, as well as tangible methods for ensuring accessibility. Her article is an excellent resource for librarians creating asynchronous instructional materials. Though many of the practices just discussed are already well-practiced among librarians serving distance learners, reexamining them in the vein of customer service sheds new light on motivations for functionality. Students are more likely to use and speak positively of well-functioning library services and resources than the opposite.

The Harvard Business Review Blog (http://HBR.org), is a valuable subscription for any librarian, providing insights on management, leadership, and innovation. Though one must make the mental connection between business and libraries, as this paper is working to, there is much to be learned from the writings of HBR bloggers. Many of these bloggers make reference to customer service fairly frequently. Reflecting on the efforts of companies like Zappos and Apple, Rob Markey (2011) wrote a post mirroring somewhat similarly the self-evaluation prompted earlier in this paper. Markey notes the connection between employee engagement and financial performance, but cites via Gallup research that: “more than 70 percent of employees in the typical company are ‘not engaged’ or ‘actively disengaged.’” He then notes a “disconnect between how companies try to promote engagement and what truly inspires and motivates employees.” To bridge this disconnect, Markey suggests surveying employees regularly (potentially every few months) to measure engagement and ideas for improvement. This would then be followed by employee focus groups led by front-line staff/managers “with built-in procedures for closed-loop learning.” Markey argues this can create “passionate employees” who feel invested. Certainly this employee engagement tactic is applicable for librarians and could be lead broadly or in relation to specific services like those for distance learners. Pulling in feedback from all service points and involving many parties in decision making may foster engagement and consequently bettered customer service, while also avoiding librarians working in silos as mentioned earlier.

Also on HBR.org, Sarah Green (2011) shared what she perceives as the key to great customer service: “…take ownership of the next problem that lands in your lap, whether it's from a customer, a colleague, or just a frazzled, sweaty, crazy lady.” In her post, Green discusses a personal experience, as well as the service philosophy of Zappos, where “they have an army of employees who are willing to really own the problems of their customers — even if it takes all day.” The lesson for libraries here is pretty obvious. It also not only harkens back, but nearly sums up many of ideologies presented in this paper: be there, be helpful, do not make excuses or give students the runaround, whether in live scenario or via web content, and put the student’s question or problem first.
Conclusion

There are many lessons libraries can learn from great business thinkers and their perspectives on customer service. As shown in this paper, these ideologies have direct applications to service for distance learners, but librarians need to make the mental leap. Venturing outside libraries and library literature to the thoughts of Gitomer, Godin, and the HBR.org bloggers is a valuable exercise to reflect on execution of library services for distance learners. This paper provided but a few examples from prominent business thinkers in an effort to prompt librarians to think about their own customer service practices, the not-so-distant relationship between libraries and business, and potential improvements or changes that can be made to services provided for those at a distance. Making connections to successful, inspiring methods of the business world sheds light on a fresh way to evaluate and improve interactions distance learners have with the library.


Librarians offer a variety of library instruction utilizing multiple formats. Many struggle with the task of transferring instruction to the online environment. Principles of instructional design can be leveraged to effect quality change in the delivery of instruction to make teaching more effective, efficient, and appealing to learners. Although having an instructional designer on the staff of the library can be extremely beneficial in designing library instruction, for many libraries this is not a reality. Libraries can offer quality instruction without hiring an instructional designer. Instructional design is, in and of itself, a systematic way to approach learning. While it is impossible to share the breadth and scope of instructional design in a single paper, it is the goal of this paper to provide some overview of the design process and to point the reader to references and resources that serve to improve the quality of instruction given by librarians.

Introduction

In recent decades the instructional role of libraries has steadily increased, mainly because of the growing use of technology and proliferation of information. There has been a paradigm shift in higher education: to the creation of more flexible learning environments with learning anytime, anywhere. Although academic libraries have commonly had education as an integral part of their mission, opportunities and methods of presenting library instruction have also grown in college and university libraries. This shift in higher education has influenced the delivery of library instruction. As a result, academic librarians offer a variety of instruction to their students, faculty, and staff using assorted methods of presentation. These methods include learning objects, online tutorials, library guides and even credit-producing information literacy courses. Even though teaching is a major component of the jobs of many librarians, most enter the library profession without a lot of teaching experience or even coursework in the area of library instruction. For the most part, librarians learn to teach while on the job: gaining knowledge and experience through formal workshops and classes or informal means such as networking and trial-and-error.

Recently, with more emphasis on online or distance learning, librarians have also had to learn how to adapt their face-to-face library instruction to the online environment, which brings with it more challenges. One way to meet this challenge would be to adopt the principles of instructional design. These principles may be utilized to create instruction that is effective, efficient, and appealing to learners. Instructional design is a systematic way to plan and present instruction and training. As Piskuriich states, “Instructional design is a way to plan your training program from the moment you have the idea for it (or the idea is given to you) until the moment you complete your revisions of your first effort and get ready to run the program again” (2006, p. 4).

Having an instructional designer on the library staff is an extremely beneficial addition to an instructional team, but for many libraries this is not a reality. Fortunately, libraries can design and offer quality instruction without an instructional designer on their staff. Librarians can acquire the skills and knowledge inherent in instructional design without completing a formal educational program and apply the knowledge gained to the creation of library instruction, from library guides to the credit producing information literacy course. In this article, an instructional designer and a librarian have come together to present the principles that comprise instructional design, explore how librarianship and instructional design
can come together, and discuss how instructional design principles may be applied in the design of library instruction.

**Instructional Design and Libraries**

Although many academic institutions employ instructional designers and some of the larger academic libraries may have an instructional designer on the library staff, a search of the literature on instructional design in libraries produced only a few articles linking the two concepts together. Very few provided practical advice for a librarian who does not have an instructional design degree to employ in developing instruction. Several researchers addressed instructional design issues related to providing information literacy instruction to a distance learning community. In the article, *Information Literacy at a Distance*, the authors presented several factors which may influence the delivery of online instruction, such as the technological knowledge and expertise of both the instructor and the students; the technological infrastructure of the institution and the students; the relationship between the instructor and the students; the relationship between the librarian and the instructor, which impacts the relationship between the librarian and the students; and pedagogical objectives. For the purpose of this research, the significant portion of the article was the discussion of creating a collaborative relationship with faculty members teaching the online courses in order to form successful relationships with the students and develop effective instruction. Another salient point was the importance of determining clear, learner focused objectives that are linked to assessment (Dewald, Scholz-Crane, Booth, & Levine, 2000).

Lo and Dale (2009) provided information on a partnership they formed to develop an online tutorial for an Introduction to American Ethnic Studies course at Kansas State University. The subject librarian provided the subject matter for the tutorial and collaborated with the instructional design librarian who provided the technical expertise. Their article provided information on the development and contents of the tutorial along with the results of a pilot test of the modules and recommendations for the future. Information on the design and assessment processes of the tutorial proved to be useful for this project. The utilization of interactive technologies in information literacy instruction was the focus of a study at the University of North Carolina at Pembroke. This study compared the improvement in information literacy when clickers were used as an instructional aid as opposed to the less technologically savvy method of raising hands. Although both classes showed increases in knowledge, the use of the clickers during the instruction sessions allowed the students to be more actively engaged causing them to retain more information. This research emphasizes the importance of active learning and student engagement in the design of instruction (Holderied, 2011).

The instructional design principles of David Jonassen (2000) were utilized to provide information on creating instructional programs in academic libraries that meet the needs of not only individual academic programs and courses, but also the needs of the learners with diverse learning styles and experiences. The importance of developing collaborative partnerships was emphasized by Macklin (2003), “…librarians must be strategic partners supporting, developing, and carrying out educational goals both inside and outside the library” (p. 494). Through these collaborations with faculty, librarians can work with instructors to determine the best methods to integrate instruction on information literacy skills into course content by creating student driven learning objectives and activities that promote critical thinking and problem solving. In building sustainable partnerships with faculty, librarians can learn about course content and assignments in order to create relevant instruction plans; identify appropriate resources to build digital resource collections; and assess the learning outcomes. Macklin (2003) recommended that not only should librarians seek partnerships outside of the library, but that collaborations may be formed within the library. Librarians within a single library may possess different skill sets and areas of expertise such as subject matter experts, web design specialists and instructional designers (Macklin, 2003).

In *Instructional Design for Librarians and Information Professionals* (Farmer, 2011), the author presents information on instructional design including an overview of instructional design, learners and learning styles. The steps that an instructional designer takes to develop and create instruction are provided with the author helping to make the instructional design process applicable to librarians and other information professionals. Both have unique positions in academic institutions because they not only have information literacy skills, but in many cases possess subject expertise and advanced degrees. This allows
them to relate to different disciplines across campus by understanding how the various academic disciplines create and share information and knowledge. As with research mentioned earlier, librarians taking a proactive approach to developing partnerships with teaching faculty to develop library instruction was emphasized. When collaborating on library instruction, librarians may need to seek out information from subject instructors on the content of the course and the assignments along with the past experiences, knowledge, and skills of the learners. Another important point from this work was the idea that librarians can work together to create learning objects or self-contained learning aids that may be shared with colleagues and reused with other library instruction (Farmer, 2011).

The Blended Librarian

Although changes in higher education have increased the educational mission of libraries, the proliferation of information sources outside their purview has led to a feeling of marginalization of libraries on campuses and a desire to reclaim a central role in academic institutions. According to Bell and Shank (2004), “…the future of academic librarianship depends on our collective ability to integrate services and practices into the teaching and learning process” (p. 373). But as mentioned earlier, many librarians enter the profession without experience or coursework in teaching and lack knowledge of not only pedagogy, but also learning and educational theories. Skills and knowledge in how to create effective instruction, develop learning activities, and assess learning outcomes are important for librarians to acquire in order to move from a tangential role to a more integrated role in higher education. To do this, the concept of the blended librarian was developed. A blended librarian is “an academic librarian who combines the traditional skill set of librarianship with the information technologist’s hardware/software skills, and the instructional or educational designer’s ability to apply technology appropriately in the teaching-learning process” (Bell & Shank, 2004, p. 373-374). Many librarians wear a variety of hats but just having varied responsibilities, even if those involve technology, do not constitute blended librarianship. This concept is a more intentional combining of librarianship and instructional design.

To become a blended librarian, one does not necessarily have to complete a formal program of study obtaining a degree in instructional design. Many librarians learn about teaching through experience on the job or through other methods such as workshops. Learning the principles of instructional design could be another educational opportunity to expand the instructional skills and abilities of librarians (Bell & Shank, 2007). In her work on instructional design and libraries, Goodman (2009) discusses the concept of the blended librarian. The originators of the concept took the ADDIE model modifying it for librarians through the creation of the BLAAM model (Blended Librarian Adapted ADDIE Model). This model had several phases or steps to be utilized by librarians to systematically create library instruction: assess the instructional needs and situation; determine learning objectives; develop an instructional plan and activities; deliver the instruction; and measure the outcomes against the learning objectives (Goodman, 2009, p. 42-43).

Instructional Design, ADDIE and Library Instruction

Although several models for instructional design exist, at the root of all design strategies is a system that guides the designer. “A system is technically a set of interrelated parts, all of which work together toward a defined goal” (Dick, Carey, & Carey, 2009, p. 1). The goal, in this case, is library instruction. This section of the paper will explore the components of the ADDIE model as the system that underlies the instructional design effort. It should be noted here that, according to Morrison, Ross, & Kemp, “there is no such thing as the ADDIE model or even an ADDIE model”; they go on to note that, “the term ADDIE model is merely a colloquial label for systematic approach to instructional development, virtually synonymous with instructional systems development” (2007, p. 13). Regardless of its pedigree, ADDIE is widely used today as a basis for instructional design, and offers an easy-to-recall structure to guide instructional efforts. Ideas on how librarians can apply the ADDIE model are included.

The ADDIE name is an acronym for the steps in the design process: Analyze, Design, Develop, Implement, and Evaluate. “The beauty of the model is that each instructional designer can interpret the steps in the process in the way that best fits their organization; it is highly adaptable” (Colborn, 2011, p.
16). The process is intended to be circular in nature, allowing the designer to constantly reassess and improve the instructional design, resulting in a continuing cycle of effectiveness and applicability.

Using the steps designated within ADDIE allows the librarian or other instructional designer to break down the tasks required to build documentation or media, creating manageable “chunks” of content development. At each step of the process, the end user must be kept central to design considerations. “Because instructional design is learner centered, the place to start designing is the learner” (Farmer, 2011, p. 27).

**Analyze**

The first step in the process is to analyze the instructional need. Who is your learner? What is the learning context? What outcomes are anticipated? In other words, it is during this stage that a gap between learners’ current knowledge and abilities, and the desired learning condition, is identified. Morrison, Ross, and Kemp (2007) describe four outcomes of the analysis process:

1. Identify the needs of the learner relevant to a particular job or task.
2. Identify critical needs, which might disrupt the learning environment.
4. Provide baseline data from which to compare learning assessments.

Pre-tests may be used to identify current learner abilities, and faculty and instructors can be of especial assistance as subject matter experts (SMEs), naming anticipated competencies and assessments, as well as identifying those critical needs that could stall the learning process.

Another learning aspect to consider is the context for instruction. Dick, Carey & Carey note that “from the very beginning a project designer must be clear about the context in which the skills will be used” (2009, p. 25). What tools will be available to the learner? If the librarian is providing instruction on searching OCLC, will computers be available to the learners? If not, how will the search steps be replicated as part of the learning process.

In the analysis phase, the librarian analyzes the instructional need by looking at the context for the instruction, the audience and their traits and characteristics, learning needs, and other factors that will determine the instruction to be developed. For library instruction designed for specific academic courses, this is one phase where collaboration and communication with the faculty member teaching the course is vital. There are many questions to be asked and answered during this phase. Who is the audience for the instruction? Are there any assignments for the course that can be targeted through the instruction? What do the students in the course already know or what skills do they possess? In what format is the instruction needed: face-to-face, a library guide, or online? How long will the instruction session be? Working with the faculty member can facilitate finding the answers for these and other questions, and assists with the analysis phase.

**Design**

Following the analysis stage is the design phase of the instructional design model. As part of the design phase, the librarian will carefully review the performance gap and assemble the criteria appropriate to the task at hand. The instructional approach should contain three components, as described by Welty: “(1) fitting the proposed learning product into the larger curriculum, (2) outlining the proposed learning product, and (3) securing management approval of the outlined learning product” (2008, p. 13). In this case, approval might come from the library’s dean or from the faculty member serving as the SME.

During the design phase, it is important to work on the content being planned with the instructional learning objectives clearly in mind. “Simply, if instruction is to accomplish desired outcomes,
it is imperative that those designing the instruction, as well as the ones doing the instruction, have a clear picture of those desired outcomes” (Mager, 1997, p. 13). These objectives should be consistent throughout the instructional materials.

Your objectives should be clear and should get your instructional objectives across in as few words as possible. Mager (1997) lists three characteristics that will guide the development of outcome statements:

- What should the learner be able to do?
- Under what conditions do you want the learner to be able to do it?
- How well must it be done? (p. 46).

An example might be: “At the end of the instruction, biology students will be able to analyze an article abstract on a topic and determine if the article is part of the primary or secondary literature”.

Refer to the user analysis developed during the first phase. Who is the learner? Objectives must be achievable given the group’s age, technical skill, and cultural attributes. Remember also any standards in place that might affect your selection of outcomes, such as state teaching standards. In library instruction, often learning objectives are specified by the faculty member teaching the course but they may also be developed in conjunction with the instructor. Learning objectives state what the goals of the instruction are or what is to be learned during the instruction session or through use of the library guide. When developing an entire course with a variety of modules or sessions, there should be objectives for not only the instruction as a whole, but also each section or module.

Another important part of developing materials is consideration of assessment. How will you measure student success with your materials? Although it might seem intuitive to develop assessment tools later, it should really be a part of the design phase. “The major reason is that the test items must correspond one to one with the performance objectives” (Dick, Carey, & Carey, 2009, p. 133). Once again, teaching staff or faculty can be invaluable in providing guidance as instructional content development begins. Their specialized understanding of a given topic and its associated learning outcomes can help you design effective library materials. The faculty member serves as a subject matter expert. When a librarian is using the instructional design principles to develop instruction, the librarian may serve dual roles are the instructional designer and one of the subject matter experts. The librarian is the subject matter expert for library, research, and information literacy skills.

During the design phase, information gathered during the analysis phase may be used to make decisions that will guide the development of the instruction session or library guide and help in creating the design document or instruction plan. This document will contain the decisions made about the instruction to be developed. An example of an instruction plan is included (see Appendix). Once the instruction plan has been created, this is also a time when communication and collaboration with the teaching faculty member is crucial. Collaboration may take place during the creation of the document or through feedback when the plan has been created. During this phase crucial decisions are made concerning the delivery method for the instruction, the content to be presented, the time allotted for training, instructional materials to be created, and who will be involved with the instruction. It is at this stage that a topical outline for the instruction is written.

**Develop**

With instructional goals and learning objectives established, it is time to actually develop your materials. Several decisions must be made at this juncture, based on the learning objectives developed earlier. What is the best way to deploy the materials?

John Keller’s (2006) ARCS model provides a user-centric lens through which to view materials development. The model name is an acronym for Attention, Relevance, Confidence, and Satisfaction.
“These are the factors that together with effort, the outcome of motivation, have a direct influence on the quantity and quality of a person’s performance” (Keller, 2006, ARCS Design Process, para. 3).

Another aspect of course development involves how the content will be packaged. Will you plan to deliver all materials online? If so, how will users access the content? Issues of web site usability may be addressed by visiting the Department of Health & Human Services’ Usability.gov webpage, which “provides information about what usability is, why it is important, how much it costs, measurement and other basic information” (U.S. Government, n.d., homepage, para 2); also included is a usability methods section, a set of templates, guidelines for user-centered design and other resources.

Especially dealing with web-based content, rapid prototyping can be helpful in instructional development. “Rapid Prototyping can be thought of as a series of informed, successive approximations, emphasizing the word informed because this developmental approach relies absolutely on information gathered during tryouts to ensure the success of the final product” (Dick, Carey, & Carey, 2009, p. 232). In other words, designers do not wait for product completion to begin testing the design. It is tweaked and modified as part of an ongoing developmental process. “By working with the stakeholders throughout the process, you get organizational buy-in, and the final resource is more likely to be accepted and used in training and application” (Farmer, 2011, p. 98).

How will the content be organized in terms of presentation? The sequencing of your course might be based upon time, complexity, or might be world-related. Of world-related sequencing, Dick, Carey, & Carey (2007) describe approaches that might be used in developing instruction for automotive sales: “Do you start at the front of the car and move to the back in your presentation? Or, do you begin by describing what the drivers see when they approach the car” (p. 134). Fosner & Strike’s (1976) article frames the issue, “In order to properly deal with the prescriptive question, How should content be sequenced? we need first to ask the prior descriptive question, In what ways can content be sequenced?” (p. 665). The article considers alternatives to those questions.

A lesson plan is written during this phase which will contain all of the details about the instruction. For online instruction, the lesson plan may be written as a storyboard containing scripts to be used in the training. As the different components that make up the instruction are developed, communication with the faculty member teaching the course may take place or this could wait until the next phase, implementation.

**Implement**

It is during the implementation phase that learners begin to interact with the materials you have created and assembled, whether they are for online, face-to-face, or blended delivery.

In an online environment, communication is an important component. Learners who have questions need to understand what resources are available to support the learning effort. Several media choices exist for communication, such as Skype, text chatting, e-mail. If the course has been developed using a learning management system, such as Moodle or Blackboard, you may use discussions as a means for communication. As with other aspects of course design, it is important that response times are clearly communicated to the learner.

If face-to-face delivery has been selected as the delivery option, be sure to consider such details as parking, seating, and the learning environment itself. “Because libraries cross curricular lines, and promote student-directed learning, these spaces serve as models for needs-based, flexible learning spaces” (Farmer, 2011, p. 118).

Part of the implementation phase involves testing the instructional components and activities through beta tests and pilots. For library instruction, the pilot may actually be offering the instruction to the class. Feedback gained from this pilot instructional session may be used to modify it for when it is offered again. For library guides, the feedback can be used to make changes to the guide. During this phase, communication with the faculty member and even students is paramount in gathering feedback to provide
formative assessments of the instruction and learning objects. Feedback may also be gathered from colleagues within the library. During this phase of design, it is critical to measure learner comments against the materials being offered. This will aid in preparation for the final phase in the ADDIE process: evaluation.

**Evaluate**

Evaluation of instructional design is as much an ongoing process as the rest of the design approach. “Evaluation is used for the purposes of making judgments about the worth or success of people or things (e.g., lessons, programs, projects)” (Morrison, Ross, & Kemp, 2007, p. 36). Three types of evaluation are generally recognized: formative, summative, and confirmative. Using formative evaluation assesses the learning design early in the process. Dick, Carey, & Carey (2009) report that studies “have demonstrated that simply trying out materials with a single learner and revising the materials on the basis of that data can make a significant difference in the effectiveness of materials” (p. 257) and relate five questions appropriate to this activity, including:

1. Are the materials appropriate?
2. Are the materials sequenced logically?
3. Are materials clear, and can they be understood easily?
4. Do the materials reflect the user-centered motivational qualities as represented by the ARCS model?
5. Can the materials be efficiently managed?

Answers to several questions may be sought during this phase. Questions such as: Did the training or library guide meet the state objectives? Did the instruction work or do what it was supposed to do? Were the sessions any good? Information evaluating the instruction or library guide may be gathered from the faculty member or from the students. The data and information gathered during the evaluation phase can be used to modify the instruction for future sessions. A revision plan is created during this phase in which decisions about the time frame for revisions are made.

Shambaugh and Magliaro (2006) define summative evaluation as “usually taking the form of looking at student performance during an official grading period or at the end of the school year” (p. 255) or following a workshop. Although their criteria are phrased differently, the questions asked during the formative evaluation, above, offer a similar lens through which to view the results of the summative evaluation.

**Use of Instructional Design in Library Instruction**

The concepts of instructional design are included in the *ACRL Standards for Proficiencies for Instruction Librarians and Coordinators*. The standards are made up of twelve categories with category six comprised of instructional design skills, including collaboration with faculty to develop learning outcomes; presenting information in a logical sequence; creating learner centered instruction; assisting learners in assessing their individual skills and needs; designing instruction that is appropriate for the time and space allotted; producing instructional sessions that meet the characteristics of the learners involved in the instruction; and finally, integrating technology into instructional opportunities to support collaborative and experiential learning (Association of College and Research Libraries Instruction Section, 2007).

So, what can a librarian do with the skills and knowledge of instructional design? By adopting and learning the skills of instructional design, librarians can become better instructors and create more efficient and effective instruction. The principles of instructional design may be used when developing any type of library instruction such as library guides, one-shot course specific sessions, and credit producing information literacy courses. It can even be used when creating training programs introducing new
resources to staff members or training new staff. Instructional design techniques may also be used to create learning objects that can be stored in a repository and used multiple times. Learning objects can be shared among colleagues within an institution or even among academic institutions.

Conclusion

Utilizing instructional design principles in the development of library instruction in a variety of formats can not only facilitate the creation of efficient instruction, but also instruction that is more effective and meaningful for the students. Instructional design is just using a systematic method to design instruction. In order to use instructional design principles, librarians do not need to complete a formal educational program in instructional design. Becoming familiar with the skills and knowledge of the instructional design process may be enough. Using models, such as ADDIE, will facilitate the creation of user centered instruction. The ability to create relevant instruction in a variety of formats from library guides, to one-shot instruction sessions to credit producing courses, will help to keep librarians at the center or heart of academic institutions. For librarians, the steps involved in instructional design are similar to those already undertaken when designing instruction or library guides. They are also familiar to librarians, because this systematic design thinking is comparable to the steps undertaken during a reference transaction or when a library professional helps to solve the information seeking problems of library users. Since many librarians learn about teaching after they have completed their program of study, they can take time to study and learn the principles of instructional design, learning theories, and other knowledge that can help to make them better instructors or even a blended librarian.
References


Appendix

Library Instruction (Guide) Planning Document
Adapted from Piskurich (2006, 131-133)

1. Scope of Project (Focus)
   a. Course Title (For generic library guides, this may be a discipline):
   b. Course Description:
   c. Faculty member requesting instruction (if relevant):
   d. Audience:
   e. Number of students in class (if relevant):
   f. Date of the instructional session(s) (if relevant):
   g. Assignments related to the instruction:
   h. Faculty or other library colleagues involved in the instruction:
   i. For courses: time allowed for presentation
   j. Location of the instruction (if relevant):

2. Skills to be taught:

3. Concepts to be included in the instruction or library guide:

4. Objectives for the library guide or instruction:

5. Topical outline of the content to be presented (what information is to be included in the session / library guide):

6. Method (How is the instruction presented? One shot face to face, online, information literacy course, library guide)

7. Techniques to be used: (lecture, hands-on, discussion, demonstration, role play, self-instruction, video, games, other methods)

8. Problems or opportunities that may be encountered

9. For library instruction: materials or learning objects needed

10. Feedback: (who will beta test and provide feedback)

11. Evaluation plan:
EBSCO Discovery Service (EDS) has been heavily used by UMUC students since its implementation in Fall 2011, but experience has shown that it is not always the most appropriate source for satisfying students’ information needs and that they often need assistance in understanding how the tool works and how to use it effectively. UMUC librarians have developed best practices for working with students to help them assess their information needs and to then formulate a search strategy that can help them find all relevant e-resources that could potentially be used to help them answer their research question. These practices include taking into consideration patron research level (i.e., graduate or undergraduate student), assignment project/scope, and research subject area.

Introduction

One of the main goals of librarians has always been to help patrons find the information that they are seeking as quickly and easily as possible, a goal that has been greatly enhanced by the existence of Web-based search tools. Since the early days of online search tools, researchers have suggested that search interfaces should be as intuitive as possible. Marchionini noted in 1992, for example, that “interfaces… [must] allow end users to be productive amid… complexity and… protect them from information overload” (p. 161), especially since users “want to achieve their goals with a minimum of cognitive load” (p. 156). In other words, patrons want to expend as little time and effort as possible while conducting their research.

During the mid-1990s, a variety of content aggregators developed their own abstracting and indexing databases, each with its own search interface. Although the general principle behind the way each database worked was the same -- users needed to enter keywords that reflected the main concept(s) of their research topic, connecting those keywords with Boolean operators -- different databases often required different search syntax. The truncation symbol used by one database might be an asterisk, for example, but another database might use an exclamation mark instead. This fact resulted in confusion and frustration among researchers; as Vaughan (2011) notes, users balked at having to figure out which database(s) to use for their research and also having to learn what search syntax was required by the database(s) that they chose.

Because of their simple interface (just one search box, in many cases) and their ability to handle natural language searching, commercial search engines such as Google quickly became very popular with students. Many researchers (De Rosa, Cantrell, Hawk, & Wilson, 2005; Griffiths & Brophy, 2006; Holman, 2011; Jones, 2002) have found that the majority of university students begin their research with a Web search engine and that some students never use library resources at all for their assignments.

Although studies and surveys of student research behavior indicate that students prefer simple-to-use search interfaces such as Google’s, it is generally agreed that the results returned by search engines that search the free Web are not as suitable for college-level research as are the results returned by library databases that search content from subscription publications such as scholarly/peer-reviewed journals, trade publications, newspapers, etc. De Rosa et al. (2005) found that among the students they surveyed, “libraries are seen as more trustworthy/credible and as providing more accurate information than search engines. Search engines are seen as more reliable, cost-effective, easy to use, convenient, and fast” (p. 2-9).
As Holman (2011) noted, though, students seem to value the latter four qualities mentioned by De Rosa et al. more than the first two and that, overall, “students find search engines easier to use than library databases and view them as effective enough for their information needs” (p. 20).

Discovery tools, which have only recently become available, represent a means by which library database searches can be accomplished in a similar manner to search engine searches. Many discovery tools present users with a single search box on their basic screen, and since multiple databases are being searched simultaneously, users are generally assured of finding hits for their searches, regardless of how well their searches are constructed. Although using proper search syntax will help users to find relevant articles on their topic, this is not as crucial in the discovery environment as it is for searches in a single database environment.

Fagan (2011) pointed out, however, that the convenience of discovery tools’ streamlined search interface “masks underlying complexities, making the search process seem easier than it is” (p. 171). After considering the effect that discovery tools can have on students’ information literacy -- specifically with regard to standards one and two of the Association for College and Research Libraries’ Information Literacy Competency Standards for Higher Education -- she concluded that “discovery tools support some traditional information literacy outcomes while failing to support others” (p. 178) and noted that librarians need to provide guidance in order to help students understand how to find and use the most appropriate resources for their research.

The present article discusses preliminary findings following the implementation of a particular discovery tool, EBSCO Discovery Service, at University of Maryland University College (UMUC), as well as the efforts that UMUC librarians have made to help students determine when and how they should use this tool for their research. Examples are given of assignments for which it is appropriate for students to use a discovery tool for their research as well as of assignments for which subject-specific databases would be a more appropriate choice. Also presented are methods that can be used to determine which resource(s) would be most appropriate to use for a particular information need. A guide to aid students in effectively using EBSCO Discovery Service is included as well.

Background

Headquartered in Largo, Maryland, UMUC is one of the 11 degree-granting institutions in the University System of Maryland. As of fiscal year 2011, UMUC had a global student population of more than 92,000 undergraduate, graduate, and doctoral students (UMUC, 2011a), making it one of the largest four-year degree-granting public universities in the United States (UMUC, 2011b). UMUC has a high proportion of non-traditional students; many students are parents and/or hold full-time jobs while taking classes on a part-time basis at UMUC. Approximately 74% of UMUC’s total enrollments are for online classes (UMUC, 2011a).

Because so many UMUC students access the UMUC library outside of standard business hours (a recent New York Times article indicated that online students “typically do class work from 10 p.m. to 2 a.m.” (Pappano, 2011, p. 8)), a concerted effort has been made to make the library’s website as user-friendly as possible, so that students ideally can find everything they need for their research on their own. (Should students want assistance from a librarian, however, assistance is available by appointment, on a walk-in basis, by phone, by instant message, by text message, by e-mail, and by online chat.)

Although the UMUC library’s annual user satisfaction survey consistently indicated that survey participants were satisfied with the library's resources (every year since 2008, when patrons were first asked about their satisfaction with the library's resources, more than 90% of survey participants have indicated that they were “very satisfied” or “somewhat satisfied” (Miller, 2011)), it was noted that one of the more persistent requests from library users was for a “one-stop” search tool that could be used to search the library’s e-resources. Following are representative comments, taken from the 2011 user satisfaction survey:
The access to information is very hard to find. It should be something similar to Google where you should be able to enter a phrase and gain information...

I find it easier to do a Yahoo or Google search to find information on my research topics. I am very thankful for UMUC library, but I wish that the process of searching could be easier. I find that trying to find what I am looking for (especially when I am searching by topic) is often very difficult and time consuming because I either do not get any search results or what shows up is not what I am looking for.

To meet user demand for such a “one-stop” search tool, the UMUC library originally implemented Ex Libris’s MetaLib in 2004. This product was rebranded as “Research Port” by the 16 libraries that participate in the University System of Maryland and Affiliated Institutions (USMAI) consortium. Although this federated search tool allowed users to simultaneously search multiple databases offered by different vendors, there were significant drawbacks to the product. A fairly limited number of the UMUC library’s approximately 120 databases were available for cross-searching, and a maximum of only eight databases could be searched at once. Furthermore, only very basic searches could be performed in the Research Port interface; users were provided with only two search boxes, and the only connector options available were AND, OR, and WITHOUT (see Figure 1). Searches in Research Port took noticeably longer to process than searches in any of the databases’ native interfaces. Also, only a subset of search results was displayed by default; users needed to click on an “increase number of results shown” link in order to re-run their search and have a greater subset of search results displayed.

The significant weaknesses of Research Port led USMAI librarians to look for other products that could offer patrons a similar search experience, and in October 2010, USMAI began hosting a series of online and in-person vendor demonstrations of recently available discovery tool products. After careful consideration of the various features of each available discovery tool, a decision was made by UMUC library management to implement EBSCO Discovery Service (EDS). Since the UMUC library already subscribed to many EBSCO products, it seemed likely that library patrons were familiar with the EBSCOhost interface already, and anecdotal evidence suggested that patrons preferred the fairly intuitive EBSCOhost interface over that of other library databases.
EDS was rebranded as “UMUC Library OneSearch” for UMUC library patrons. Additional customizations were made by UMUC Systems librarians, the most significant of which are as follows:

- It was decided that, with the exception of the library catalog (catalogUSMAI), all databases that could be searched directly through OneSearch should be included in searches, so that OneSearch search results would be as comprehensive as possible. The result of that decision is that OneSearch currently shows results from 46 databases that are searched directly, while results from up to 45 more databases can be added in by selecting the databases from the “Additional Resources to Search” column on the right-hand side of the search results page. See [http://www.umuc.edu/library/libhow/onesearch.cfm#included](http://www.umuc.edu/library/libhow/onesearch.cfm#included) for a list of the databases searched directly and a list of databases included under the “Additional Resources” heading. (An additional 33 databases that the UMUC library currently subscribes to are not available through OneSearch; these databases must be searched separately. A list of these databases is available at [http://www.umuc.edu/library/libhow/onesearch.cfm#notincluded](http://www.umuc.edu/library/libhow/onesearch.cfm#notincluded).)

- Although catalogUSMAI can be searched directly via OneSearch, it was decided that this resource should not be searched automatically; rather, patrons will need to select it from the “Additional Resources” section of the search results page. The rationale behind this decision was that since the vast majority of UMUC students and faculty are conducting their research at a distance, the main purpose of OneSearch should be to help patrons gain access to full-text documents quickly and easily. Since catalogUSMAI contains few full-text documents, it was decided that including its search results among others returned automatically by OneSearch might frustrate patrons. Those patrons who do want to see catalog search results in OneSearch, however, can easily add them in.

- It was decided that the default search mode would be “Find all my search terms,” which uses an implied AND between terms. The alternative “Find any of my search terms” (an implied OR) was rejected since it could potentially return a large number of irrelevant search results. The “Boolean/Phrase” option was considered, but this option was ultimately rejected since it was noted that for properly formatted Boolean searches (e.g., “tax fraud” AND law), both the “Find all my search terms” and the “Boolean/Phrase” options return the same set of search results, while for keyword searching of the type that students who have been conditioned by free Web search engines to run (e.g., tax fraud law, with no Boolean operators used and no quotation marks used to designate an exact phrase), the “Find all my search terms” option will return many more articles than will the “Boolean/Phrase” option. (A sample search run in June 2011 for tax fraud law in “Boolean/Phrase” mode returned just 27 hits, while the same search in “Find all my search terms” mode returned 6721 hits.)

Since OneSearch includes a relevancy ranking algorithm and since UMUC Systems librarians configured OneSearch such that the default search result order is by relevancy, it was hoped that the relevancy ranking algorithm would compensate for poorly constructed searches -- that is, regardless of whether students properly use Boolean operators or quotation marks, truncation symbols, etc. in their searches, their top search results for a “Find all my search terms” search should still be highly relevant to their research topic.

It was further noted that the basic search box that would appear on the library’s home page resembles the basic search box on Google’s home page (see Figure 2). Because of this, it made sense for OneSearch to work like a Google search, which the “Find all my search terms” option would accomplish.

To help encourage students to properly construct their search queries, however, a sample search statement was provided below the OneSearch search box, as shown in Figure 2.
Figure 2. UMUC Library OneSearch basic search box, available from the library’s home page, as compared with the basic search box available from Google’s home page.

The OneSearch basic search box was added to the library’s home page on August 1, 2011, and the new search tool was promoted in an announcement on the library’s home page, in the library’s Fall 2011 newsletter, and in a weekly newsletter directed to UMUC faculty and staff. OneSearch was also promoted in online and face-to-face instruction sessions and in reference transactions, as discussed in greater detail later in this article.

Early Assessment of Student Use

Upon the request of individual professors, UMUC librarians regularly visit UMUC online classrooms to offer information literacy instruction. Instruction modules are followed by a required exercise that offers students an opportunity to employ the research skills they have learned. This exercise is often a springboard for a larger in-class research project.

Following the implementation of UMUC Library OneSearch, the library’s instructional visits were analyzed to determine how students were using OneSearch as well as other online UMUC library resources, in particular, library subject guides and individual databases. Visits were to both graduate and undergraduate classes and spanned various subject areas including accounting, African American studies, anthropology, art history, Asian studies, behavioral and social sciences, biotechnology, business, communications, education, English, government, health care administration, history, human resources management, information systems management, psychology, speech, and writing.

Transcripts of the required exercise given at the end of all online instructional visits were collected and evaluated approximately one month after OneSearch was implemented. In particular, questions that prompted students to choose an appropriate database were analyzed. Here is the text of the original questions/prompts:

1. The database I chose to research this topic is the following:

2. I chose this database for the following reason:

Analysis of student responses revealed that students devised search strategies based on their familiarity with particular resources or their perception that a particular resource was “easy to use.” Students rarely considered whether the documents retrieved would be of the highest quality or highly relevant.

In addition, upon implementing OneSearch, the library emphasized in video tutorials, website documentation (see http://www.umuc.edu/library/libhow/onesearch.cfm), and classroom visits that not all databases can be included in the main search; some databases can only be incorporated as “additional resources” after the initial search, and other databases cannot be searched at all via OneSearch. Despite all of the library’s warnings, many users continue to believe that OneSearch searches all databases, as evidenced by student answers to the library’s information literacy exercise.

Another persistent issue is that students preferred to use OneSearch because of a perceived ease of use, regardless of whether it was an appropriate tool for the job. For example, in EDCP 100, a course designed to teach basic academic skills to new undergraduates, students are tasked with finding a single article about education to analyze. The quickest and most efficient search strategy in this case is to visit the
library’s Education subject guide (http://libguides.umuc.edu/education) and choose a single, subject-specific database to search. Yet many students who have extremely focused assignments like this one will conduct a search in OneSearch and be faced with thousands of articles from dozens of databases, many of which do not specialize in the topic area. Using OneSearch in this case is like using a jackhammer when a chisel is all that is necessary. According to Griffiths and Brophy (2005), in these instances “almost all users will only look at the first page of results” and settle on any decent article that appears early on (p. 551). Even worse, many students who are expecting an easy search and are instead overwhelmed by the large number of results grow frustrated and abandon their search completely.

In addition, early analysis of student responses to the library’s information literacy exercise showed that students tended to prefer OneSearch because they believed that searching many databases is always superior to searching a single database or even a small number of subject-specific databases. Also, many students preferred high-yield results regardless of relevance. They believed that more results meant more choices and were unconcerned with the quality of those choices. Of course, these attitudes are problematic because they do not take into account the ultimate quality of the results, which ought to be the most important factor for researchers.

**Leading Students Down the Path of Self-Discovery**

It was determined that the library instruction exercise must be revised to account for the addition of OneSearch. The original questions did not even mention OneSearch by name since the questions were written before OneSearch was implemented at UMUC. The reference and instruction team decided that it would be best to prompt students to visit both OneSearch and a single, subject-specific database and then evaluate for themselves which was most useful. So the two questions from the original exercise were divided into three separate questions/prompts:

1. Run your search statement in UMUC Library OneSearch. How many records did you find?

2. Run the same search statement in a single database chosen from an appropriate subject guide. Which database did you choose, and how many records did you find?

3. Compare and contrast your results from these two searches.

These questions lead students down a path of “self-discovery,” allowing them to compare results from multiple sources (OneSearch and a single, subject-specific database chosen from a subject guide) and then analyze for themselves which results were most relevant. Many students clearly understood the pros and cons of both sets of results once they had retrieved them on their own and taken the time to compare and analyze them. One student noted, “The results from the second search [in a single, subject-specific database] were much more relevant to my search statement and subject matter. I also received fewer results which made it easier to choose an article.” Another remarked, “The second search [in a single, subject-specific database] made finding relevant articles much easier and faster.” By asking students to compare the results of the two different searches, the exercise forces them to contemplate the quality and quantity of those results. As one student wrote, “The results that I got from my first search [OneSearch] yielded more results but my second search provided me with articles that were more appropriate and pertinent to my topic.”

This exercise led to a discovery for the authors of this article, too. We realized that the students’ preoccupation with the ease of use of the search interface was likely a result of the fact that it was simple to browse the library’s website to compare and evaluate various database interfaces. On the other hand, unless they were prompted to do so, students were unlikely to run the same search statement in multiple databases to compare the results. Only when they have completed searches in different databases and compared those results can they fully appreciate the importance of the entire process, from initiating the search to analyzing the results. In essence, the revised exercise allowed library instructors to show rather than tell students why one type of search, from initial search to end results, is more effective than another. When students see the differences between the results with their own eyes, it seems to have a much stronger impact than if they are simply told which path to take. For many of them, this exercise allowed
them to postulate how they would search in the future. For instance, one student wrote, “I might want to consider using the OneSearch option if I am writing a research paper that requires a significant amount of references from multiple viewpoints.”

There is an additional reason for allowing students to “self-discover” using OneSearch and other databases: some students chose single, subject-specific databases that were not appropriate for their topic, and they came to recognize this after reviewing their results. One student wrote, “When I pick a subject guide and a database, I don’t know if I’m picking the best option for my subject. I like OneSearch because it can give me hundreds of options at once… I don’t have to pick different subjects and databases to search through.” As this student points out, any search conducted in OneSearch is likely to incorporate at least one database, if not more, that is relevant to the student’s topic. This is not the case if a student mistakenly chooses a subject guide and database that are not related to their research topic.

Having students explore results in OneSearch and other databases also gives them an opportunity to confirm or refute their own expectations. A number of students who preferred OneSearch because “it was easy to search many databases at one time” came to recognize that cross-searching so many databases comes with a price: “It [OneSearch results] was a lot to go through and I probably wouldn’t use it that often. I liked the more focused search of using the subject guide and database. The results were drastically lower and more focused on the topic I was researching.” Another student who expected better results from a single, subject-specific database found that “the results [from OneSearch] were more suitable for my research paper. This was surprising to me. I assumed that the results I reached using PsycARTICLES would be far more useful. Although the PsycARTICLES results were interesting, the variety and depth of subject material was lacking.”

**Reference Interview Protocol**

Of course, reference interviews do not allow for the same leisurely meandering down various paths of “self-discovery.” Fielding questions from distance education students over the phone or by chat, e-mail, or IM is often time-sensitive. For these instances, the authors of this article have created a reference interview protocol distilled from the lessons learned through instructional visits. The following guidelines are meant to serve as a general reference interview template:

- Determine the students’ general research topic
- Determine the scope of their inquiry into the topic, their level of scholarship (e.g., undergraduate or graduate student), and the general subject area(s) relevant to their topic
- Find where they have searched so far and the nature of their results
  - Determine whether student needs to be redirected away from/toward UMUC OneSearch for a narrower/broader search
  - Determine whether student needs to be redirected away from/toward a subject guide and subject-specific database(s) for a broader/narrower search
  - Determine whether student is using an appropriate resource and simply needs further help narrowing/broadening search results

**Sample Research Needs Encountered by UMUC Students**

The following are general examples of a variety of research needs for which librarians could suggest different search strategies. While this list is by no means meant to be exhaustive, the examples given are some of the most common research scenarios UMUC students would encounter.

- *An undergraduate class assignment asking students to locate and evaluate a single article.*
In this instance, a suitable example is an assignment from the 100-level course “Principles and Strategies of Successful Learning” (EDCP 100). EDCP 100 is an elective course designed to provide students with the tools, knowledge, and skills they need to succeed in their college career.

To help students familiarize themselves with library resources, students are asked to find one article related to the course from a library database. Some suggested keywords for searching are provided, and the students are also directed to use a single, subject-specific database. Students are then asked to critically evaluate their chosen article, including whether they agree with the major premise of the article (and why), whether the article is applicable to the student, and whether the student can relate the article to class discussions, the textbook, or other literature the student has read.

This assignment is one of the more straightforward ones pertaining to library research in that students need only find one article. Using OneSearch in this instance would not be effective and could, in fact, overwhelm students by retrieving a large number of articles. This assignment provides a basic introduction to navigating UMUC’s online resources, which is useful since many students taking EDCP 100 are not familiar with the library. Some, for example, are adult learners returning to school after many years in the workforce.

- A class assignment requiring a review of academic literature in a particular subject.

In this instance, students are required to provide a review of academic literature. A pertinent example is a requirement in the class “Conflict Management” (SPCH 426) in which students are asked to write four papers analyzing case studies or other materials provided by the instructor. As the course progresses, the papers become increasingly complex, requiring that students “integrate and apply information learned” (Lincoln-Richardson, 2011). For this assignment, students could certainly use individual databases, such as Business Source Complete and ABI/INFORM Complete to obtain articles about conflict management in the workplace. But conflict negotiation skills are useful in other areas in addition to the workplace, and conflict manifests itself in a variety of ways. For example, students might be interested in researching how men and women differ in resolving conflict, or they might wish to approach conflict negotiation from a sociological or psychological perspective. In these instances, business databases might not be the best resources for students to use. GenderWatch, SocINDEX, and/or PsycINFO would be more helpful to students. In fact, UMUC librarians oftentimes encourage students to use databases that focus on a variety of subjects and disciplines in order to obtain a variety of perspectives for their papers and projects. OneSearch would therefore be an appropriate resource to use for the Negotiation and Conflict Management assignment since articles from a wide variety of databases would be retrieved, thereby helping students craft a research paper that approaches the topic from many perspectives.

- Research for the Doctor of Management degree that requires conducting a comprehensive literature review.

UMUC offers two Doctor of Management programs. These are intensive programs focusing on applied research in the field of management. The programs require 48 credits for completion, including 12 credits of dissertation courses. These courses are designed to offer support to the doctoral candidates as they take increasing responsibility for their learning throughout the program and eventually complete the required dissertation.

Much emphasis is placed on the dissertation, with four approved content areas:

- Ethics and social responsibility
- Innovation (industry-specific, including technology)
- Global sustainability and international business
- Applied leadership and change

In the Doctor of Management dissertation, chapter two is entirely devoted to the literature review and is divided into three parts:

- Critical review and analysis of the literature, by topic
- Discussion of theoretical lens (lenses)
- Research propositions as they emerge from and are reflected in the literature review

Such an extensive literature review requires that the doctoral candidates examine and evaluate articles that cover a wide range of subject areas. It will not be sufficient if students merely focus on articles addressing issues in management. Like students in the Conflict Management course, doctoral candidates must approach their topics from a variety of perspectives. But the literature review the candidates must complete is obviously much more far-ranging than the work required by students in the Conflict Management course. If the candidates focus on applied leadership and change, for example, business databases would be appropriate resources to use. But leadership qualities are also addressed in psychology and sociology databases, and these should be included in the candidates’ literature review.

For DM students, who need to conduct an exhaustive search of all relevant databases, we recommend the following protocol: First, conduct a search in UMUC Library OneSearch and evaluate all resources in the central result list (see Figure 3). Next, evaluate all additional results listed on the right-hand side of the screen and add them to the central result list (see Figure 4). Finally, visit the library’s list of databases not included in OneSearch to determine which databases are most likely to contain resources related to the student’s research topic (see Figure 5) and run searches in those databases. This type of exhaustive search is also appropriate for graduate students and faculty who need to review a large amount of academic literature on their topic. In this case, OneSearch is a highly effective tool that offers comprehensive search results quickly and easily, although its results still need to be supplemented with results from subject-specific databases.

![Figure 3](image)

*Figure 3.* The first step in our recommended protocol for students who need to conduct a comprehensive search is to conduct a search in OneSearch and evaluate the resources in the central results list.
Figure 4. The second step in our recommended protocol is to evaluate all resources in the Additional Resources to Search column on the search results page and to add additional databases as appropriate.

Conclusion

EBSCO Discovery Service, rebranded UMUC Library OneSearch, was chosen as the library’s discovery service for its ease of use and ability to cross-search multiple databases. Post-implementation, student responses to instruction module exercises were evaluated to assess whether students were formulating effective search strategies that took into consideration all of the library’s resources, not only OneSearch. It was found that students chose OneSearch, as well as other databases, based on their perception of how easy the search interface was to use; their familiarity with the interface based on past experiences; their preference for high-yield results regardless of relevance; and/or their belief that cross-searching multiple databases is superior to searching a single database, regardless of the scope of their research assignment. The library’s instruction module exercise was revised to guide students through searches of OneSearch as well as a single, subject-specific database. Students then compared and analyzed the two sets of results. This method of self-discovery allowed students to evaluate the search process from initial search to analysis of the search results. A protocol for guiding students through similar evaluative choices in a reference interview was created based on analysis of the instructional exercise.
References


University of North Texas (UNT) Libraries began studying the library needs of distance learners in 2009 using a variety of approaches to explore and confirm these needs as well as obtain input into how to meet them. Approaches used to date include analysis of both quantitative and qualitative responses by online students to the LibQUAL+ surveys over time, focus groups, observations and interviews. The Libraries administered the LibQUAL+ survey and conducted focus groups. The Libraries then worked with two graduate level qualitative analysis classes, one on campus and one online, to do further study that included additional focus groups, observations, and interviews. The effectiveness, strengths and problems encountered with each method, as well as with the technology used in executing them, are covered. Triangulation of the results of the various methods to confirm findings is discussed as are the actions that are being taken to address the findings.

Introduction

In 2005, the University of North Texas (UNT) Libraries began administering the LibQUAL+ survey, joining many educational institutions which were asking their user communities for input on improving services. Although this survey provided very useful information regarding areas of user satisfaction and dissatisfaction, it was often not obvious what actions to take in response, even after analyzing the comment data collected by the survey. A decision was made in spring of 2009 to compliment the survey data with qualitative and ethnographic research.

Online students were chosen for study for several reasons. Increasing numbers of students are enrolling in online classes: Approximately nine percent of UNT’s 36,000 students are online only. Additionally, many on campus students prefer to use the library’s online services and resources, and in fact, have the same needs as distance students. For example, UNT has many commuter students who live throughout the Dallas/Fort Worth metroplex. In addition to the distance they must travel, these students often have jobs or families or both, making it difficult to come to campus other than for class. So while they may be taking classes on campus and may be able to make occasional use of the physical library, their use of the library is primarily the way distance students must use the library. The following comments were made on the 2009 LibQUAL+ survey by students who identified the library most often used as “UNT online library services”:

- I don't use the physical library on campus, but the online resources are excellent. The only problem I have ever had is with journal articles only being available at the actual library. Commuting from Plano makes it difficult to access those articles as I am only on campus 1-2 nights per week and only get there from work just in time for class.

- Thank you for the valuable online resources! [sic] I am very busy and generally do not have time to physically visit the on-campus library.

Considering this data, we thought that if library services improve for online students, they will also improve for on campus users.
Additionally, a number of ethnographic studies of the needs of college and university students have recently been conducted, including work done at the University of Rochester (Foster & Gibbons, 2007); at Loughborough University (Bryant, 2007); at MIT (Gabridge, Gaskell, & Stout, 2008); at the University of Dayton (Webb, Schaller, & Hunley, 2008); at Fresno State (Delacore, Mullooy, & Scroggins, 2009); at CUNY (Smale, & Regalado, 2010); at a group of Illinois academic libraries (Duke & Asher, 2011); and at Brigham Young (Washburn & Bibb, 2011). However, none of these studied the library needs of distance learners.

Qualitative and ethnographic work is being done with distance learners. Online focus groups with distance learners have been conducted via teleconference at Athabasca University (Schafer, 1998), and using a chat room at the University of Nevada, Las Vegas (Grays, Del Bosque, & Costello, 2008). At the 2011 American Library Association Annual Conference, the LITA Distance Learning Interest Group presented a panel discussion with four speakers discussing their experience doing qualitative studies online. Three of the panelists, representing Oregon State (Buck, 2011), the University of Maryland (Mann, 2011), and UNT (Wahl, 2011), discussed their unpublished work with online focus groups. The fourth speaker, Janet Salmons discussed her book on conducting qualitative research online using interviews (Salmons, 2010). The focus of the book was on methods and it did not address library services for distance learners. She has since published another book on conducting online interviews, but it also does not address library services for distance learners (Salmons, 2011). Therefore, an additional goal of our work is to provide guidance regarding what did and did not work for others who want to study their distance learners.

**Methods and Results**

**2009 LibQUAL+ Survey Statistics and Comments**

The first method used to study distance learners was an analysis of the spring 2009 LibQUAL+ survey results. From the first time the survey was administered at UNT, the ability to identify distance learners has been a consideration. This goal is achieved by including “UNT Online Library Services” as a response to the question: “The library that you use most often.” It should be noted that the population that selects this option also includes some on campus users who primarily use online services. However, as pointed out in the introduction, many of these students have the same needs as distance students with respect to access to online library services and resources. The data provided by these respondents was included in the study.

The LibQUAL+ survey was distributed by email to all students and faculty at UNT. This approach to recruiting survey participants results in a convenience sample, which is a sample made up of individuals readily available to the researchers. Other examples, convenience samples, include people walking through a mall or students enrolled in a class.

Bias is nearly always an issue when using a convenience sample. We assumed that some of those who chose to respond have had positive or negative interactions with the library that they want to discuss further. In order to have a more representative sample population, we addressed other various forms of bias. Selection bias, the exclusion of certain individuals or groups in the population, is a significant issue for the LibQUAL+ survey at UNT. Individuals who do not read their email regularly may differ from those who do in their use of the library and their evaluation of the services provided. Additionally, many students miss the email because they prefer to use outside email accounts, rarely check their university account, and do not forward their university account to their preferred account. All of these groups of students also may differ from each other in their use and evaluation of library services. Non-response bias is another form of bias that is an issue for any survey. Individuals may see the survey but fail to respond. This population may represent significant differences from those who see and take the survey (Freedman, 2004, p. 986-990).

We addressed bias in a number of ways. To increase the number of individuals in the population who actually see the survey, we used several approaches, including placing links to the survey on frequently used pages of the library website; placing links on the desktops of library and general access lab computers; and distributing paper and electronic flyers with the survey URL around the campus. Of these
approaches, the website links provide an alternative way to reach distance learners. In the case of survey nonresponse, sending multiple email reminders and offering incentives have both been shown to increase the representativeness of samples (Vehovar, 2002). UNT uses both of these techniques. When selecting incentives, shipping costs and the need to choose something that can be used easily by a distance student are always considerations. For example, gift certificates to local businesses could not be used by most distance students.

In addition to the standard set of LibQUAL+ questions, UNT also has selected five local questions that have been used in all of the surveys except the one in 2008 when UNT Libraries participated in the LibQUAL+ Lite pilot. They are included here because some of them are identified as important issues in the analysis of survey results:

- LQ-1 Availability of online help when using my library’s electronic resources
- LQ-2 Teaching me how to access, evaluate, and use information
- LQ-3 Making me aware of library services
- LQ-4 Online course support (e.g., readings, links, references)
- LQ-5 Timely delivery of the articles and documents that I need

The survey asks respondents to score items related to various aspects of library service by providing their minimum acceptable, desired, and perceived levels of service. These responses were used to examine priorities, superiority gaps, and adequacy gaps.

Priorities were identified by looking at the items that had the highest desired levels of service. This data tells us what is most important to our users. Then we examined how our respondents rated library performance by looking at the superiority gaps, which reflect the difference between what the user desires and what s/he perceives is currently received. The superiority gap is calculated by subtracting the desired score from the perceived score. The result is usually negative. A small negative superiority gap for an item indicates that the library is providing service close to what is desired for that item. A large negative superiority gap is indicative of a library’s failure to provide the desired level of service. A positive superiority gap means that the library’s service exceeds user desires.

Next we considered the adequacy gap, which reflects the difference between a user’s minimum requirements for a service and perceived levels of service. The result is usually positive. A large positive adequacy gap indicates that the library is providing service well above the minimum requirements for that item. A small positive superiority gap is indicative of library services barely above the minimum requirements. A negative superiority gap means that the library’s service is below the minimum requirements.

The superiority gap and adequacy gap analyses resulted in the same five items being identified as problems by online users, both with respect to living up to desires and meeting minimum standards (see Table 1). Four of these five items are also identified as the highest priorities by online users.

Comment data was also analyzed, using Atlas.ti (http://www.atlasti.com/features.html). Atlas.ti is a qualitative analysis tool that can accommodate text, image and video. It was already being used on the UNT campus and is the tool that members of ARL’s Statistics and Assessment staff use when discussing analysis of LibQUAL+ comment data. In analyzing the data, most comments were assigned a code associating it with one of the LibQUAL+ questions. Additional codes were included based on more specific subject content. For example, one of the more specific subject codes is distance learning. This approach allows qualitative data to be considered along with the quantitative data when analyzing results for specific questions. It also provides easy access to comments and portions of comments that deal with a wide variety of topics more specific than the questions.
Table 1

2009 LibQUAL+ Survey Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
<th>2009 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC-1</td>
<td>Making electronic resources accessible from my home or office</td>
<td>1(8.55)</td>
</tr>
<tr>
<td>IC-4</td>
<td>The electronic information resources I need</td>
<td>2(8.52)</td>
</tr>
<tr>
<td>IC-2</td>
<td>A library Web site enabling me to locate information on my own</td>
<td>3(8.49)</td>
</tr>
<tr>
<td>IC-8</td>
<td>Print and/or electronic journal collections I require for my work</td>
<td>4(8.49)</td>
</tr>
<tr>
<td>IC-6</td>
<td>Easy-to-use access tools that allow me to find things on my own</td>
<td>5(8.4)</td>
</tr>
</tbody>
</table>

LARGEST SUPERIORITY GAPS

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
<th>2009 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC-2</td>
<td>A library Web site enabling me to locate information on my own</td>
<td>1(-1.43)</td>
</tr>
<tr>
<td>IC-6</td>
<td>Easy-to-use access tools that allow me to find things on my own</td>
<td>2(-1.3)</td>
</tr>
<tr>
<td>LQ-1</td>
<td>Availability of online help when using my library’s electronic resources</td>
<td>3(-1.27)</td>
</tr>
<tr>
<td>IC-8</td>
<td>Print and/or electronic journal collections I require for my work</td>
<td>4(-1.17)</td>
</tr>
<tr>
<td>IC-4</td>
<td>The electronic information resources I need</td>
<td>5(-1.15)</td>
</tr>
</tbody>
</table>

LARGEST ADEQUACY GAPS

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
<th>2009 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC-2</td>
<td>A library Web site enabling me to locate information on my own</td>
<td>1(0)</td>
</tr>
<tr>
<td>IC-8</td>
<td>Print and/or electronic journal collections I require for my work</td>
<td>2(0)</td>
</tr>
<tr>
<td>IC-6</td>
<td>Easy-to-use access tools that allow me to find things on my own</td>
<td>3(0.05)</td>
</tr>
<tr>
<td>LQ-1</td>
<td>Availability of online help when using my library’s electronic resources</td>
<td>4(0.19)</td>
</tr>
<tr>
<td>IC-4</td>
<td>The electronic information resources I need</td>
<td>5(0.23)</td>
</tr>
</tbody>
</table>

Comment data provided some context and insight about the need for changes to services or additional services that did not show up in the analysis of the quantitative data and reinforced the need for additional research:

- I am an online student and while the online library is probably very good (and probably deserves higher marks than I gave it above). I do not know how to use it and don't think that I've ever really been made very aware of it (until now).

- I have not been introduced to the library or library services. I have found that the internet and my company library give me what I need. By the way, I have yet to see a link to the library [sic] on any of the pages I visit. It is not on web CT [sic] that I can see. In short, Where [sic] is it? If a person who is predominantly [sic] an on-line [sic] student has to look for a library services link and the link to is not on the pages visited regularly then the library does not exist. It's the old saw, “Location, Location, Location.”

2011 LibQUAL+ Survey Statistics and Comments

In the spring of 2011 the LibQUAL+ survey was again administered. Online student priorities, superiority gaps and adequacy gaps were again reviewed and were compared to the 2009 results (see Table 2). Several changes emerge from 2009 to 2011. Examination of priorities shows an increasing emphasis on items that reduce the time required to complete library research. The five items identified as the highest priority show what is important to them:
1. Working from home or at the office
2. A website that is easy (i.e., quick, easy to use)
3. Ability to access information resources quickly without help
4. Quick delivery of items in storage or borrowed from other libraries
5. Ready access to important journals in their field

Table 2

Comparison of 2009 and 2011 LibQUAL+ Survey Results

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Description</th>
<th>2011 Rank</th>
<th>2010 Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC-1</td>
<td>Making electronic resources accessible from my home or office</td>
<td>1(8.59)</td>
<td>1(8.55)</td>
</tr>
<tr>
<td>IC-2</td>
<td>A library Web site enabling me to locate information on my own</td>
<td>2(8.49)</td>
<td>3(8.49)</td>
</tr>
<tr>
<td>IC-7</td>
<td>Making information easily accessible for independent use</td>
<td>3(8.38)</td>
<td></td>
</tr>
<tr>
<td>LQ-5</td>
<td>Timely delivery of the articles and documents that I need</td>
<td>4(8.38)</td>
<td></td>
</tr>
<tr>
<td>IC-8</td>
<td>Print and/or electronic journal collections I require for my work</td>
<td>5(8.37)</td>
<td>4(8.49)</td>
</tr>
<tr>
<td>IC-4</td>
<td>The electronic information resources I need</td>
<td>5(8.37)</td>
<td>4(8.49)</td>
</tr>
<tr>
<td>IC-6</td>
<td>Easy-to-use access tools that allow me to find things on my own</td>
<td>6(8.37)</td>
<td>5(8.4)</td>
</tr>
</tbody>
</table>

The students are communicating that speed and efficiency in the research process is important to them. Examination of the population provides insight into this point. Thirty-two percent of UNT’s graduate students take only online classes; 68% of UNT’s students enrolled exclusively in online classes...
are graduate students. Additionally, 59% of UNT’s survey respondents who chose “UNT Online Library Services” in the 2011 LibQUAL+ survey were graduate students. These students are older and are more likely to have jobs and families that compete with their academic programs for time.

When looking at the adequacy and superiority gaps, which identify areas with the highest levels of dissatisfaction, two items from the local questions used at UNT come up for the first time as significant problem areas:

- LQ-3 Making me aware of library services
- LQ-4 Online course support (e.g., readings, links, references)

These items suggest that one way distance students and other online users are asking us to help them save time is by pushing information out to them rather than expecting them to pull that information for themselves.

**Online Focus Groups**

The 2009 analysis of LibQUAL+ survey data was followed in the summer of 2009 by focus groups made up of distance students. The first step was to obtain an IRB approval for the focus groups. Without this step, research results cannot be used for presentations and publications. More importantly, it requires putting together a plan up front for how the research will be conducted.

When considering how to recruit for the focus groups, we decided to use non-probabilistic sampling, a type of sampling based on identifying “specific groups of people who either possess characteristics or live in circumstances relevant to the social phenomenon being studied. Informants are identified because they will enable exploration of a particular aspect of behavior relevant to the research” (Mays & Pope, 1995, p. 110).

Two separate groups of volunteers were recruited using different approaches to recruiting. The library and information science program at UNT uses distance learning extensively with geographically oriented cohorts located around the United States. These cohorts receive only one hour of face-to-face training, provided during an intensive four day institute on campus. The remaining course work is completed online with the three core courses being taken together by members of the cohort. For at least one of those courses there is an embedded librarian who provides additional training. Volunteers from one of these cohorts were solicited using an email sent from the faculty liaison to the cohort. Five volunteers responded and participated together in a focus group limited to this group of volunteers.

The larger group of volunteers was recruited by posting a flyer in Blackboard, the online classroom environment used at UNT. The flyer would pop up on all student homepages the first time each student signed in following the posting. It would then remain accessible in a list of campus announcements on the student homepages for a specified period of time. The flyer described the purpose of the focus group and the type of students desired as volunteers, provided a high level schedule, and offered flash drives as incentives for all volunteers who actually participated in the focus groups. These volunteers were asked to contact one of the researchers by email. The researcher responded with a request for the volunteers to provide the following demographic information about themselves: graduate or undergraduate; college/school (UNT has 12 colleges and schools, five of which offer online undergraduate and/or graduate degree programs); country (if outside of the United States), state (if other than Texas) or hometown; over or under 30 years of age; point in UNT degree (beginning, middle, or near graduation), and gender. The non-probabilistic sample was developed by analyzing the responses received.

This approach turned out to be an effective way to recruit distance students. In 24-hours during “Maymester,” a compressed semester between the spring and summer semesters, approximately three times as many students as we needed for the focus groups responded to the flyer. It turned out to be important that the initial pool was as large as it was because attrition became an issue once we responded with our request for demographic information and continued through the process of scheduling for the focus groups.
In putting together the focus groups, the demographics of the students who responded back were analyzed and students were selected based on these characteristics. Eleven students from this pool followed through and participated in the focus groups. The final pool of students who actually participated in the focus groups drawn from both recruiting methods included 16 volunteers representing the four largest of the five colleges that offer online degree programs. There were nine graduate students, five undergraduates, one individual enrolled in a graduate level certificate program, and one student with a Bachelor’s degree who was taking courses and considering a graduate degree. Four were on campus; three, in the Dallas Fort Worth metroplex; two, in other parts of Texas; six, out of state; and one, out of the country. Five were male and 11 were female. Most were over 30-years-old. Fourteen were Caucasian; one, African American; and one, Asian American. One foreign student participated—not the person who was out of the country. This group of volunteers, although not statistically representative, included factors that were important to this research, including the colleges that place the most emphasis on distance learning, geographic diversity, and diversity in the degree level of the students.

When scheduling the focus groups, students were sent emails with several proposed dates and times and asked to respond with all proposed sessions that they could attend. Focus groups were scheduled based on these responses. In the future, a web-based scheduling tool such as Doodle (www.doodle.com) will be used as it compiles the responses for you, making scheduling faster and easier.

As already noted, attrition continued during the scheduling process and through the conduct of the focus groups. In some cases, if someone missed a scheduled session, we were able to reschedule her/him in another group. However, not everyone agreed to reschedule. Ultimately, the number of focus group participants dropped from 23 to 16 during this phase. Four separate sessions were conducted, each with different participants.

When developing the questions to ask the focus group, the issues identified in the LibQUAL+ survey were consulted. In addition, library staff members who provide services to distance students were asked to suggest questions. Inclusion of library staff in the planning is important because their buy in is important if they are going to consider changes to current services based on focus group results.

The technology used for conducting the online sessions can impact the flow and effectiveness of the session. Dimdim (www.dimdim.com), recently acquired by Salesforce (www.salesforce.com) and is no longer available, was initially used because it provided simultaneous conference and chat capabilities, and recorded both. However, funding limitations meant that the free version had to be used, which allowed only three participants to be authorized to speak at the same time. As a result, the focus group facilitators had to change authorization for speaking regularly during the sessions, which distracted them from the content of the discussion. An examination of Microsoft’s Netmeeting revealed that it had both the same capabilities and the same liabilities. Ultimately, a low cost conference call service available through the university was used. It provided recordings of the calls and the calls were supplemented with the chat capabilities in Dimdim. Use of the chat capabilities varied significantly between groups. Some did not use them at all while others groups had comments and supplementary information added throughout the session. The reason for this inconsistency was the variation in the way different participants chose to communicate. A broader array of tools for online meetings is becoming available, both open access and proprietary licensed to universities. Regardless of the tool that is used, the important factor is to make sure that operating it does not distract the focus group facilitator(s) or that a separate person handles the technical aspects of the software.

The recordings for these focus groups were transcribed, initially with participant names included. After the transcriptions were completed, a set with descriptive codes was created replacing participant names; typically referencing the subject studied by the participants. Examples include: MLS Female, Emergency Management Male, and Applied Technology Male. The anonymous transcription was then entered into Atlas.ti (http://www.atlasti.com/features.html). In a manner similar to the analysis LibQUAL+ comment data, each comment was coded based on the question to which it was a response and also based on the subject content. This approach allows easy review of all responses to each question in the focus
group script. It also provides easy access to comments and portions of comments that deal with a wide variety of topics more specific than the questions.

The first step in responding to the results was for the focus group facilitators to read through the coded results and identify the key issues. Then a committee was put together made up of individuals who were in a position to both understand and address the issues. Members included the head of Research and Instructional Services; the manager/designer of the library website; a representative from the Center for Learning Enhancement, Assessment, and Redesign (CLEAR)—the campus organization that manages the online learning environment Blackboard; a faculty member from the Department of Library and Information Science in the College of Information; the distributed learning liaison for the library; and subject librarians to several departments represented in the focus groups.

After an initial review and agreement regarding key issues, the committee broke into four subgroups based on the following issues: marketing library services, library instruction for online students, Blackboard, and the library website. The identification of these issues masks a driving factor behind all of them: two of the 16 focus group participants indicated that until they saw the flyer about the focus groups, they were unaware that the library provided online services and resources. This fact echoes the student comments quoted from the 2009 LibQUAL+ survey.

The subgroups made the following recommendations on how to improve services in their assigned area. Those that have been or are being implemented are noted.

1. Increase the Libraries’ presence and visibility in Blackboard.
   a. Add library links to My Blackboard and to the Blackboard sign on page. Create a library gateway on the sign on page. (Note: A link to the Libraries now appears as a bookmark under Campus Bookmarks on the Blackboard homepage.)
   b. Provide an entry page, which would be a one-stop shop for library resources/services, on the library website with information on and links to online services and resources. Include a link to this page from the new library gateway on Blackboard. (Note: In development.)
   c. Create an attractive and self-explanatory icon for the online library services, and place the icon at applicable locations to attract and increase online users’ attention.
   d. Use the Blackboard Announcements to publicize library collections and services. The announcements can be directed to departments, faculty, students, and other groups to keep people from having to sift through items of no relevance to them. (Note: This tool is now being used, but infrequently, and more to publicize events and surveys than collections and services. Plans are being made to increase its use to market collections and services.)

2. Provide library instruction opportunities to online students that don’t require being at the physical library.
   a. Build an online users guide to the Libraries in Blackboard. Design it in such a way that a student can access an orientation type overview of library services or key in on short—five minutes or less—instructional segments focusing on specific services, tools, etc. Consider using podcasts or vodcasts stored at iTunes U. (Note: In development.)
   b. Establish discipline specific “office hours” staffed by subject specialists for the various disciplines on a weekly basis, using instant messaging or other technology. Focus group feedback on what technology students would like to work with would be appreciated. (Note: This service was attempted for one semester but received little response. This may have been because of a lack of publicity by the faculty to their classes. It may be reconsidered.)
c. Develop a research paper calculator in Blackboard. This tool will allow a user to enter their research project due date and get a schedule of activities and when they need to be finished in order to complete the assignment on time. Over time, links to modules providing information about how to perform the various activities will be added. Here are some examples of calculators in use at other universities: http://mulibraries.missouri.edu/guides/assigncalc.htm
(Note: The current website does not allow embedding of this type of calculator. It will be considered in the website redesign discussed in a later section.)

3. Make the UNT Libraries’ website easier to search. Ensure that terminology used on library web pages includes keywords likely to be used in a Google search for information on the topics covered by the web pages. This activity will involve training web page creators and then having them use what they have learned to improve the searchability of their web pages. (Note: In development.)

4. Publicize and provide online instruction in using search software that looks for information on a specified topic in a variety of databases, including the library catalog, simultaneously. (Note: A web-scale discovery service is currently being implemented, to replace a federated search engine that was made available in 2010 to address this point.)

5. Communicate and collaborate more effectively with faculty members that teach online classes.

   a. Provide appropriate library information, including links, in the course syllabus template.

   b. Communicate with/instruct faculty on the value of maintaining library information in their syllabi. Communication should be both general (e.g., Blackboard announcements directed to faculty, listserv announcements) and specific (e.g., One-on-one discussions between faculty and CLEAR instructional consultants or faculty and subject librarians). (Note: CLEAR is working with faculty on this issue.)

   c. Collaborate with faculty in development of their unique course syllabi, emphasizing the role of library resources for online classes and resulting in customized pages for the specific classes that are library gateways to the content needed for the classes. (Note: Class pages have been developed for a number of classes. We are currently working with faculty to see that links to the pages are added to the Blackboard class pages in addition to appearing on the library website, where they are currently located.)

One of the most important outcomes of this process was a change in the library’s relationship with CLEAR. UNT Libraries had long had links in the class page template in Blackboard. However, many faculty members removed some or all of the template content, including the library link. As a result, a link was needed in a more general location not tied to a class page. Efforts to make this happen had been unsuccessful. However, students repeatedly brought up the issue during the focus group sessions:

- I wish there were more mention of the UNT Library on the main UNT page, or my UNT page, or in VISTA or WebCT Blackboard so that way I don’t have to go to any course to look at that library. It should just pop out right there.

- I kind of pictured when I started the Blackboard kind of was a deal [sic], that was my portal to the whole online distance thing, and discovered that that wasn’t what it really was. So I kind of had wondered sometimes, if they were working towards that where they would have that kind of a resource because that would be a good idea [sic].

- This has been quite an interesting discussion because I’m finding out all these resources that I could have accessed while I was a student there if I had only known, and I think, personally, Diane, I think the starting point is getting the library icon on Blackboard. As a distance learner, if you want people to access and utilize your services, which is what I understand this whole discussion to be about--how can we improve it--get it at the starting point and get that virtual tour and/or tutorial on there and advertise yourself. Let
everybody know what services you provide. As a distance learner we are, pretty much, like I said, coming through the back door or the window. We don’t know.

Instead of a committee of librarians summarizing these comments in a report to send to CLEAR, there was a representative of CLEAR on the committee who read these statements for herself. She was in the group that made recommendations related to Blackboard. Work with CLEAR to improve library access for distance learners is continuing. A library tab within Blackboard is under development which will provide many of the additional features the focus group participants requested.

*Ethnographic Study by Graduate Level Ethnographic and Qualitative Methods Classes: Focus Groups, Observations, Interviews*

In the fall of 2010, UNT Libraries partnered with Lisa Henry, a faculty member in the Anthropology Department who was teaching two qualitative analysis classes: one on campus and one online. The agreement was for the class project for each class to be a study of the library needs of distance learners. Each class would use three methods: focus groups, observations, and interviews.

A convenience sample was used for this project. Volunteers were solicited via emails sent to a mailing list made up of students taking at least 50% of their coursework online. Not enough students volunteered to provide the number of subjects required for the class projects. One factor in the number of volunteers may be the fact that the class had no funding for incentives. The use of email for recruiting may be another reason. The student researchers did send out at least two emails to the names on the mailing list. Students being recruited may not have been checking their university emails. As a result, another strategy was used to recruit participants. CLEAR posted an announcement on Blackboard that went to everyone who had to go to Blackboard for any course. In addition, some faculty made announcements in classes, and some of those faculty members offered extra credit for participation. Ultimately, the plan for the research changed. The online class maintained its focus on distance learners, and the distance learner respondents were reserved for them. The on campus class changed its focus to the use of online resources by on campus students. An important factor in the success of this project was the willingness to be flexible and make changes as needed. In the introduction, it was suggested that improving library services for distance learners might improve them for on campus students as well. This change provided an opportunity for a direct comparison of the needs of these two groups.

The sample studied by the online class consisted of 57 students, including 15 lower level undergraduates, 19 upper level undergraduates, 13 master’s students, and 10 doctoral students representing six colleges and schools, including four with online degree programs. Some colleges offer online classes but do not have online degree programs.

The on campus sample consisted of 30 students, including three lower level undergraduates, 15 upper level undergraduates, and 12 graduate students. Six colleges and schools were represented, duplicating only three of the colleges included in the online class sample.

The on campus students were able to conduct their research face-to-face. However, the online students had the challenge of using technology to facilitate their research. They used Live Classroom, now Blackboard Collaborate: [http://www.blackboard.com/Platforms/Collaborate/Products/Blackboard-Collaborate/Web-Conferencing.aspx](http://www.blackboard.com/Platforms/Collaborate/Products/Blackboard-Collaborate/Web-Conferencing.aspx), which accommodates voice communication and text chat and can be archived to allow transcriptions to be created. It also supports application sharing, including allowing the interviewer to give control to the student being observed so that the interviewer can see how the student conducts research on the UNT website or using internet tools.

After their project was complete, the student researchers noted that in the future they would handle interviews with students differently. They observed that students often did not have a clear memory after the fact of problems encountered performing online research. As a result, they recommended that interviews of this type be conducted either during an observation or immediately following an observation of the interviewee performing research.
Each class made recommendations based on their findings (Henry et al., 2010a; Henry et al., 2010b). Comparisons of the results exhibit a remarkable consistency, in spite of the fact that the online class was focusing on online students and the on campus class was focusing on students taking classes on campus (see Table 3). This consistency validates the hypotheses that improving services for online students will also improve them for on campus users.

Table 3

Comparison of Online and On Campus Anthropology Class Recommendations

<table>
<thead>
<tr>
<th>Online Class</th>
<th>On Campus Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve user experience with the UNT Libraries website. We recommend working with the design department to make the website more visually attractive, to simplify the website design, to create an integrated search tool (much like Google Scholar), and to create the possibility for students to personalize the library website for their needs.</td>
<td>Improve user experience with the UNT Libraries website. We recommend working with the design department to simplify the website design and create an integrated search tool, much like Google Scholar.</td>
</tr>
<tr>
<td>Improve library instruction. We recommend further collaborations between the library and professors and tiered levels of training. Google is making people overconfident because it is forgiving of poor search terms. For this reason we recommend offering basic tutorials and more advanced tutorials (such as how to perform a successful search, and tutorials for new research projects). Tutorials should be quick and interesting video tutorials.</td>
<td>Improve library instruction. We recommend further collaborations between the library and professors. Students need instruction on how to use the library electronic resources closer to the time their research assignment is introduced. They need tailored and specific information on which databases are best for their discipline. They are not reading the content that currently exists on the website. We recommend also making video tutorials that are quick and interesting.</td>
</tr>
<tr>
<td>Improve communication. Even though many resources for instruction are available to students on the UNT Libraries website, students do not know about them. We recommend creating a printout catalog of the site that would include explanations of different databases and what those databases can be used for. We also recommend more publicizing of the library URL and the tutorials.</td>
<td>Improve Communication. Even though many resources for instruction are available to students on the UNT Libraries website, students do not know about them. We recommend writing e-newsletters with library updates. We also recommend highlighting the department librarians so that students know they are a resource for research.</td>
</tr>
</tbody>
</table>

An important factor in this approach is that it was conducted by non-librarians. During the planning stages, the student researchers met twice with a librarian to ask questions about what the Libraries wanted to know about distance students. Otherwise, the classes planned and conducted the research on their own. This element made the results of particular interest because they were not affected by any preconceived ideas held by library staff.

Triangulation

Triangulation, using multiple methods or different researchers or both to examine an issue, is a way to confirm results. It is frequently used when trying to understand the complexity of human opinion and behavior (Cohen, Manion, & Morrison, 2003). Since English is an imprecise language and librarians often use jargon not used by the patron, in cross comparison of the studies standardized terminology was used to combine concepts about services.
A comparison of the results of the focus groups and the ethnographic study done by the UNT graduate students in anthropology supports the interpretation of the changes evidenced in the two LibQUAL+ surveys (see Table 4). All four studies show online students asking for an easier to use website and easier to use search tools.

Table 4
Comparison of the Results of from All Methods

<table>
<thead>
<tr>
<th>LibQUAL+ 2009 Top Five Superiority Gaps</th>
<th>2009 Focus Groups</th>
<th>2010 Ethnographic Study</th>
<th>LibQUAL+ 2011 Top Five Superiority Gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make the library website and access tools easier to use successfully</td>
<td>Make the UNT Libraries’ website easier to search. Ensure that terminology used on library web pages includes keywords likely to be used in a Google search for information on the topics covered by the web pages. This activity will involve training web page creators and then having them use what they have learned to improve the searchability of their web pages.</td>
<td>Improve user experience with the UNT Libraries website. We recommend working with the design department to make the website more visually attractive, to simplify the website design, to create an integrated search tool (much like Google Scholar), and to create the possibility for students to personalize the library website for their needs.</td>
<td>IC-2 A library Web site enabling me to locate information on my own</td>
</tr>
<tr>
<td>*IC-6 Easy-to-use access tools that allow me to find things on my own</td>
<td>Publicize and provide online instruction in using search software that looks for information on a specified topic in a variety of databases, including the library catalog, simultaneously.</td>
<td>Improve library instruction. We recommend offering basic tutorials and more advanced tutorials (such as how to perform a successful search, and tutorials for new research projects). Tutorials should be quick and interesting video tutorials.</td>
<td>*IC-6 Easy-to-use access tools that allow me to find things on my own</td>
</tr>
<tr>
<td>Improve instructional resources available to distance learners</td>
<td>Provide library instruction opportunities to online students that don’t require being at the physical library. a. Build an online users guide to the Libraries in Blackboard. Design it in such a way that a student can access an orientation type overview of library services or can key in on short—five minutes or less—instructional segments focusing on specific services, tools, etc. Consider using podcasts or vodcasts stored at iTunes U. b. Establish discipline specific “office hours” staffed by subject specialists for the various disciplines on a</td>
<td>Improve library instruction. We recommend further collaborations between the library and professors and tiered levels of training. Google is making people overconfident because it is forgiving of poor search terms. For this reason we recommend offering basic tutorials and more advanced tutorials (such as how to perform a successful search, and tutorials for new research projects). Tutorials should be quick and interesting video tutorials. Students need instruction on how to use the library electronic resources closer to the time their research assignment is introduced.</td>
<td>*LQ-4 Online course support (readings, links, references)</td>
</tr>
</tbody>
</table>

*IC-2 A library Web site enabling me to locate information on my own

*IC-6 Easy-to-use access tools that allow me to find things on my own

*LQ-1 Availability of online help when using my library’s electronic resources

*LQ-4 Online course support (readings, links, references)
weekly basis, using instant messaging or other technology. Focus group feedback on what technology students would like to work with would be appreciated.

c. Develop a research paper calculator in Blackboard. This tool will allow a user to enter their research project due date and get a schedule of activities and when they need to be finished in order to complete the assignment on time. Over time, links to modules providing information about how to perform the various activities will be added. Here are some examples of calculators in use at other universities: [http://mulibraries.missouri.edu/guides/assigncalc.htm](http://mulibraries.missouri.edu/guides/assigncalc.htm)

They need tailored and specific information on which databases are best for their discipline. They are not reading the content that currently exists on the website.

Communicate and collaborate more effectively with faculty members that teach online classes.

a. Provide appropriate library information, including links, in the course syllabus template.

b. Communicate with/instruct faculty on the value of maintaining library information in their syllabi. Communication should be both general (Blackboard Announcements directed to faculty, listserv announcements) and specific (one on one discussions between faculty and CLEAR instructional consultants or faculty and subject librarians).

c. Collaborate with faculty in development of their unique course syllabi, emphasizing the role of library resources for online classes and resulting in customized pages for the specific classes that are library gateways to the content needed for the classes.

Improve communication about services and resources
Increase the Libraries’ presence and visibility in Blackboard
a. Add library links to My Blackboard and to the Blackboard sign on page. Create a library gateway on the sign on page.

b. Provide an entry page (which would be a one-stop shop for library resources/services) on the library website with information on and links to online services and resources. Include a link to this page from the new library gateway on Blackboard.

c. Create an attractive and self-explanatory icon for the online library services, and place the icon at applicable locations to attract and increase online users’ attention.

d. Use the Blackboard Announcements to publicize library collections and services. The announcements can be directed to departments, faculty, students, other groups, to keep people from having to sift through items of no relevance to them.

Improve communication. Even though many resources for instruction are available to students on the UNT Libraries website, students do not know about them. We recommend creating a printout catalog of the site that would include explanations of different databases and what those databases can be used for. We also recommend more publicizing of the library URL and the tutorials.

We recommend writing e-newsletters with library updates. We also recommend highlighting the department librarians so that students know they are a resource for research.

*IC-4 The electronic information resources I need

*IC-8 Print and/or electronic journal collections I require for my work

Other

Note. An asterisk marking LibQUAL+ items in the chart indicates that the item was also one of the top five adequacy gaps in the specified year. The 2010 Ethnographic Study recommendations are taken from the online study. Additional data from the on campus study is in italics.

They also all express a need for library instruction. In the 2009 LibQUAL+ survey, respondents ask for “online help when using my library’s electronic resources.” However, the following summer, focus
group feedback resulted in the following recommendations related to library instruction and a more subtle form of instruction, library marketing:

- Emphasis on creating a library presence in Blackboard, including a library portal (user guide) and use of Blackboard to communicate library news of interest to specific groups of students.
- Making subject librarians accessible to online students.
- Collaborating with faculty to develop “library gateways to the content needed for the classes.”

Then, in the fall of 2010, the graduate classes in qualitative and ethnographic methods both emphasized pushing information to students by means of library instruction and communication/marketing. In 2009, they were primarily concerned about the difficulty of finding things. By 2011, they were requesting that the Libraries become less passive in providing services.

Additional Responses

The changes to Blackboard discussed above were made specifically because they benefited distance students. Additional changes are being taken because they are seen as improving library services for all students and faculty, not just for distance students. These changes include the following:

- A federated search engine was implemented in 2010. It is now being replaced by a web-scale discovery service.
- A library website redesign is getting started and significant input is being solicited from users.
- Library liaisons are increasing efforts to build relationships with faculty. The faculty is seen as an important avenue to reaching students.
- A new position, Director of Communications and Marketing, has been established in the Libraries.

These actions taken, in part, as a result of the findings of our study of distance students support the hypothesis that if library services are improved for distance learners, they will be improved for everyone.

Conclusion

The results of this study show the progression of student thought from the desire for user-friendly online services to their request for help, either by instruction or by effective marketing of services. They illustrate the confirmation of findings that can emerge from using multiple methods to study an issue. Finally, an examination of the way the methods were applied also provides guidelines for conducting this type of research with distance students:

- Standard surveys such as the LibQUAL+ survey, can be used to study special populations, such as distance learners, if demographic identifiers are included.
- Use of non-probabilistic sampling can provide access to a variety of viewpoints in the relatively small samples used for qualitative and ethnographic studies.
- College students respond to incentives; they can be very important in obtaining enough participants to provide meaningful data, whether the study is quantitative or qualitative.
- When conducting qualitative and ethnographic studies, selection of easy to use technology, or having support personnel present to handle the technology, facilitates the study of online students without becoming a distraction.
• With the right technology, researchers can study things that many would think require face-to-face interaction. For example, they can observe distance learners conducting research using their library website and online tools.

• The findings of studies conducted by researchers who are not members of the organization being studied can be advantageous because they reflect a fresh perspective unbiased by organizational preconceptions.

• When changes are to be made based on research results, change can be facilitated by including representatives of groups likely to be required to make changes identified in the review of research results and in developing recommendations for change based on those results.

The results also highlight the benefits of using this kind of study to provide information to support management decision making. At UNT we have used the research findings and committee recommendations to develop strategic plan goals, as well as projects in support of those goals.

This type of research can be conducted in a cost-effective manner. The only part of this research that required additional funding was the focus groups, which required funding for incentives and for transcription. Although there are costs associated with the LibQUAL+ survey, this survey is done regularly and the expenses are already part of the library budget. Using data from this survey for projects such as this one increase the impact and value received from the survey. Finally, there are no expenses associated with the research done by the anthropology classes. However, there are benefits: The student subjects may be more open and honest with other students than they would be with a librarian researcher; the student researchers get professional experience as students; and additionally, many of them indicated that they had learned a lot themselves about using the library.
References


Appendix A

Online Student Focus Group Invitation

WHAT: Focus groups about library services for online students. Four groups of 5 to 8 students are planned.

WHO: Volunteers who represent the online student population at UNT:
- Graduate/undergraduate
- At least one student from each college or school
- International/local
- Under/over 30
- Beginning of program at UNT/end of program at UNT
- Male/female

WHEN: Now through August
- June/July – initial meeting of 1 ½ hours
- Website for ongoing communication regarding library planning to address issues identified, 2 to 3 hours between June/July and August/September
- August/September – follow up meeting of 1 hour to review library recommendations regarding services for online students.

WHERE: By conference call.

THANK YOU: Everyone who participates will receive a flash drive at the end of the first focus group.

HOW TO VOLUNTEER: Send an email before June 12 to diane.wahl@unt.edu.

SPONSORED BY: UNT Libraries
Appendix B

ONLINE STUDENT FOCUS GROUP SCRIPT

1. Tell us your name, your academic area, and where you are in your degree program.

2. What types of technology are you using?
   Prompts:
   a. Internet access (dial up, DSL, broadband wireless, cable Internet, WiFi, FTTH – fiber to the premises)
   b. PC (laptop, desktop)
   c. PDA (smartphone?)
   d. Bluetooth enabled phones
   e. Other?

3. What would you tell a new online/distance student about the library?

4. We’d like to know how you learn about library services and resources.
   a. How do you currently find out about library services?
   b. How would you like to find out about library services?
      Prompts:
      i. Email
      ii. Library news items on web site home page
      iii. Web page dedicated to online/distance students
      iv. Webinar on online/distance student services
      v. As part of one of your classes
      vi. Other?
   c. What is the easiest way for you to learn how to use the online library resources and services?
      Prompts:
      i. Online tutorials
      ii. Webinars
      iii. Librarian in the classroom
      iv. Teaching yourself through hands-on experimentation
      v. Other?
      d. What kind of direction or instruction on using the library and library resources do you get from your professors?

5. Let’s talk about your research process.
   a. Where or how do you start your research?
   b. What do you do next?
   c. Does the library become involved?
      Prompts:
      i. What do you think of the online library catalog?
      ii. How can the catalog be improved to help your research? Prompts: table of contents, book reviews, ratings similar to those in Amazon.com, images of book covers, etc.?
      iii. How do you find journal articles?
      iv. What other research tools do you use?
   d. What do you do if you can’t find what you’re looking for?
   e. What do you do if you need a book or journal article that isn’t available online?
6. Do you ever use a physical library, either at UNT or elsewhere? What kind of resources (physical or electronic) do you prefer to use?

7. Think back to an experience you had with a library that was outstanding. This experience may have taken place at the UNT Libraries or any other library. Describe it.

8. What else does the library you use do well?

9. What has been your greatest disappointment with UNT Libraries or any library that you use?

10. What else does the library you use need to improve?

11. Is there anything else you would like to tell us about using the UNT library or other libraries you use for your studies?
Appendix C

Observation Fieldnotes (Assignment #3)

Your assignment is to observe an online student conducting library research through the UNT library webpage. It’s very broad. Think about the goal of the research project and what our client wants us to find out. *How are online students using library resources?*

Getting ready for the assignment:

1. Recruit an online student who has some kind of assignment that requires library research.
2. Arrange a time to meet in your Live Classroom research room.
3. Provide the link and phone number to the participant in advance and ask them to run the setup wizard.
4. If they have a webcam then ask them to use it because you both will feel more connected during the observation. If they don’t have a webcam then just use your webcam so the participant will feel connected to you.
5. At the scheduled meeting time, both of you enter Live Classroom and get connected.
6. When you get in to Live Classroom, click on the video recorder icon. A gray box will pop up. Click on the closed eye to turn on your webcam. You will want to move this video into a corner so that it does not block your view of the screen.
7. Click the archive button and MAKE SURE the session is being archived.
8. Click the share button. A window will pop up showing you the AppShare Status. You should see your name and your research participant’s name.
9. Important step – next to your participant’s name, click the box to give them cursor control and click the circle to indicate sharing desktop.
10. Click the orange begin sharing button.
11. At this point your participant should be given instructions on their screen about how to share their desktop. They need to expand the viewing window large enough so that you can see their entire desktop.

Before you begin the observation, you should

1. Read the informed consent notice to them. You can also email it to them before the meeting. If you do this, just make sure they understand all parts of the consent notice. Click here to print assess the informed consent notice.
2. Record a description of the research assignment and course
3. Record a description of what library research they have already done for this assignment (where are they in the process?)
4. Record where are they located at the moment of observation
   a. (home, coffee shop, etc?)
5. Record the following demographic data
   a. age
   b. gender
   c. marital status
   d. ethnicity
   e. children
   f. employment status
   g. other commitments
   h. geographic location
   i. disabilities that affect students’ assess to library resources (either on-campus or online)
   j. average credit hours per semester
   k. field of study / major / college
   l. Has the student done academic research on the UNT website previously?
m. Is English a foreign or secondary language to the student?

n. Number of online courses student has previously enrolled in

o. What technology is the student currently using to conduct research?
   (desktop, laptop, netbook, iPad, smartphone, eReader (Kindle))

**Doing the observation:**

1. You will ask your participant to narrate as they proceed with their research.
2. You shouldn’t be asking lots of questions, but rather observing their actions.
3. Watch where they go first, maybe it’s not the library website…maybe they go to Google Scholar first.
4. When they get to the library website, watch what they do first.
   a. And then where do they go?
   b. What kinds of key words are they entering?
   c. How are they getting their information?
   d. Do they create an electronic file for all of their information? (you will be able to see this because you can see their entire computer screen)
   e. Are they writing it down by hand?
   f. What kinds of files are they accessing?
5. You want to observe and record everything that you possibly can about that library research. From reading your brainstorming activities, I know you guys have really thought about this process.
6. You can ask them clarifying questions like “why did you go there?” “are you writing anything down with pen and paper?”

You must observe for at least 30 minutes.

Be VERY descriptive. Be very thorough in your descriptions. Make sure those details are in your fieldnotes.

**Write Up**

For the write up – there isn’t one style of write-up. Everyone has their own styles and I’ll let you experiment with this. Check out the “sample fieldnotes” example that I handed out in class.

There also isn’t specific page length, but it should be more than just a few pages. When you are doing ethnography you need to write until you’re done taking notes…until you’re done with the assignment. The more descriptive, the better.

One thing specific that I want you to do with the write-up is write a **SUMMARY** section. I want you to summarize the behaviors that you recorded. What can you say in general about the observation? Is their one pattern of behavior? Two patterns of behavior? Put it into a neat summary package. This will make analysis at the end of the project much easier.

Post any questions you have to the discussion board topic “Observation Assignment” under Project Discussions.

This assignment is due on **Oct. 22nd (a Friday)**. Submit to the assignment tool.
This paper describes the automated copyright clearance process for electronic reserves materials by the electronic reserves staff at the Information and Library Services (ILS), at the University of Maryland University College (UMUC). Besides the standard practice to handle and post required course readings in digital format for UMUC’s distance education online classes, a large portion of the electronic reserves process is devoted to obtaining copyright permissions. This is to ensure that UMUC is in compliance with all laws that control the use of copyrighted materials. The ILS’s small team of electronic reserves staff takes the lead in managing a high volume of copyright requests each semester for the three UMUC geographic divisions: United States, Europe and Asia. The experiences and practices of the in-house copyright request management system for the electronic reserves services will be featured, including related data and statistics.

Introduction

Reserved course materials in digital format, or electronic reserves, have been playing a significant role as a practical and popular service in academic institutions. The service provides a convenient way to make course materials available through remote online access on a 24/7 basis, which eliminates the restraints of time, space, and physical location for students and faculty. These crucial elements of the electronic reserves services are especially vital in the distance education environment. However, the maintenance of the electronic reserves services requires a significant staff commitment to manage the labor-intensive request process. Some universities place the responsibility for obtaining copyright permissions on their teaching faculty who request the reserves readings. At the University of Maryland University College’s (UMUC) Information and Library Services (ILS), the electronic reserves team, consisting of one librarian and one library technician, takes on the responsibility to manage the complex copyright permissions process. This helps to ensure that UMUC is in compliance with all laws that control the use of copyrighted materials.

Although academic and library communities have been acting in good faith to comply with the copyright law, the copyright aspect of electronic reserves still notoriously makes managing the service a risk (Albanese, 2007). The concern of possible allegations regarding unintentional acts of copyright infringement has greatly increased, which creates common challenges for those trying to prevent such charges. To meet the challenges of managing copyright permissions properly, the electronic reserves team works with publishers and producers of copyrighted materials to understand their mounting concerns for copyright issues (Gasaway, 2000). After a careful review of these concerns, a project to establish the best practices for a more efficient and systematic copyright permission process was generated. The electronic reserves team collaborated with the Library Web Specialist to further customize and streamline the current in-house copyright request management database. As a result of the successful implementation of the improved database, the proper balance of the interests between the copyright holders and users’ rights has been achieved.
Background

Background of UMUC

The University of Maryland University College was founded in 1947 at Adelphi, Maryland. As a pioneer in distance education, the college was initially established to provide continuing education for U.S. military service members stationed overseas in Europe and Asia after World War II. UMUC later became one of the eleven accredited, degree-granting institutions in the University System of Maryland. As one of the largest public universities as well as one of the fastest growing distance education universities in the United States, UMUC’s online distance education system serves the learning communities of non-traditional students around the globe in 25 countries. Based on UMUC at a Glance (University of Maryland University College, 2011), about 47% of UMUC’s stateside (U.S.) students are working parents, and the median age for these stateside undergraduate students is 32 years old. Currently, UMUC has more than 90,000 students enrolled worldwide, including 55,000 active duty military, reserves, dependents, and veterans. In November 2008, UMUC became the first U.S. college to provide on-site classes to U.S. military personnel in the Middle East and Central Asia, including the war zones of Iraq and Afghanistan (Londoño & Kinzie, 2009).

Background of UMUC’s Information & Library Services

UMUC’s Information and Library Services (ILS) is a distance education library. ILS does not have a traditional library space, so patrons gain access to electronic research resources and an array of online support through UMUC’s virtual library service environment. ILS has over 125 mostly full-text subscribed online library databases that hold 103,944 journals, and an extensive e-book collection of 41,000 volumes. Patrons can chat with or e-mail a librarian on a 24/7 basis for technical, reference, or research assistance or they can phone, instant message, or walk in to the library during regular office hours. There is a mandatory course on information literacy and research methods that is required for all new students at UMUC. The course familiarizes students with ILS services, including how to utilize the extensive set of library databases and build the skills to research, evaluate, and use information effectively. ILS conducts a user satisfaction survey annually, and an in-depth survey on student needs every five years. This is a continuous effort to assess patrons’ usage, perceptions, and expectations of UMUC’s electronic library services (Aldridge, 2009).

Overview of the Electronic Reserves Services at UMUC

ILS established the electronic reserves services in the Spring of 1998 as a pilot project, but the official electronic reserves program was not launched until Fall of 1999. The marketing of the electronic reserves services was integrated into UMUC’s new faculty orientation as part of the faculty outreach initiative. The electronic reserves program was strategically promoted by the ILS’ liaison librarians and via the library’s monthly newsletter, blogs, and e-mail alerts. Several online conferences and workshops also have been conducted to introduce the program to UMUC teaching faculty. From faculty members’ (requestors’) perspective, information about electronic reserves is conveniently available on the library Web site, including the electronic reserves services policy and guidelines, frequently asked questions, and the Reserved Readings Requests system,¹ along with audio visual tutorials to guide faculty in the use of the electronic reserves services.

As a key service to support faculty’s day-to-day teaching, ILS’s electronic reserves service provides required course materials in digital format for WebTycho classrooms, UMUC’s proprietary online course management education system. The procedures associated with processing the electronic reserves requests begin when current teaching faculty submit the request using the online Webform via the Reserved Readings Requests system, which was developed by the Library Web Specialist. The Webform requires a secure login to ensure that the faculty member is currently teaching a course and is eligible to request electronic reserves. Once the login has been verified, the Webform displays associated information of the teaching faculty. The faculty can request readings for their current classes, select readings from previous
classes, or select readings that have been requested by others in particular disciplines. From the electronic reserves team’s perspective, the submitted Webform requests are received through the Electronic Reserves Management system database (see Footnote 1), also developed by the Library Web Specialist. This in-house Microsoft Access database aggregates all submitted data from the Webform.

As requests appear in the database, the electronic reserves team processes them first by determining if the requested reading is available in full text via the subscribed library databases. If so, a direct link to the full text article or detailed instructions to retrieve the full text article is provided. If the requested reading is not available for direct access online, a print copy of the requested reading is obtained, scanned, and converted to PDF (Portable Document Format) file. Various formats of materials are made available as reserved readings, such as book chapters, multimedia (streaming audio or video clips), direct links or instructions to full text articles via library databases or Web sites, journal articles, PowerPoint presentations, sample tests, instructors’ exercises or problem sets, exams, homework solutions, and purchased cases. In addition, the team also assists patrons with technical issues involving electronic reserves, such as troubleshooting Adobe Reader to view PDF documents.

All requested readings are posted to the Reserved Readings section of the assigned online classrooms. The faculty who requested the readings is then notified via e-mail, which is automatically generated by the Electronic Reserves Management system database. Only current registered students and the teaching faculty members can gain access to the assigned online classrooms through a secure server that requires a current user name and password. A statistical assessment on the usage of the electronic reserves is compiled every semester from the Electronic Reserves Management system database. Based on the statistical reports, the requests from teaching faculty to post reserved readings in their online classrooms have been increasing every semester (see Figure 1).

To facilitate proper handling of the requests, the electronic reserves processing manual is available online via the library staff wiki. The wiki is part of a larger library initiative to use Microsoft SharePoint as a content management system for documentation, knowledge management, and collaboration. The library staff can easily update and share instructional documents in this Web-based collaborative environment. The wiki manual is also a useful tool to train other ILS staff to process electronic reserves requests, and to check proper workflow and work schedules.

**Overview of the Copyright Request Management System**

A large portion of the electronic reserves process is devoted to obtaining the copyright permissions. Selecting items that are fair use, seeking the appropriate rightsholders, and understanding each individual publisher’s or rightsholder’s requirements in granting the copyright permission can be a
daunting task. The electronic reserves team uses the Copyright Request Management (see Footnote 1) component in the Electronic Reserves Management system database to track and generate aggregated copyright requests to permission owners (see Figure 2). Throughout the process of streamlining the Copyright Request Management system database, the mutual cooperation of the electronic reserves team, Library Web Specialist, and publishers and rightsholders was the key factor in the success of the implemented system. One important lesson from the collaboration is to understand the copyright requests process from the publishers’ perspective. In one instance, a particular publisher consistently returned permission requests unfilled without explanation. After the electronic reserves team attempted several appeals, the publisher finally was willing to share their process practice. When receiving requests, this publisher needed to further process and distribute the requests to different assigned copyright staff in various locations. After learning the detail of the requirements, the electronic reserves team worked with the Library Web Specialist to make adjustments to the copyright permission requests format. As a result, the turnaround time for copyright permissions is much shorter and the interactions with the publisher have been positive ever since.

Figure 2. Copyright Request Management database in Microsoft Access. Electronic reserves team uses this database to create and track the status of copyright permission requests.

Based on the input and feedback of the publishers and the electronic reserves team, the Library Web Specialist streamlined the copyright request process using an in-house Microsoft Access database to incorporate the workflow of the permission process directly into the online application at the Copyright Clearance Center (CCC). This Copyright Request Management system database meets the requirements of easy to navigate, operate, and maintain without exhausting valuable financial and time resources. All the essential permission process functions are built into the database, including a program to automatically calculate and determine if copyright clearance is required under ILS and current copyright guidelines (American Library Association, 2011; Hirtle, 2011; Brewer, 2007). In general, copyright permission is not required for a reading requested for the first time by a faculty member as this is considered fair use under the copyright law according to UMUC’s guidelines. However, copyright permission is required if the faculty member requests that reading for the same class taught in subsequent semesters (Information and Library Services, 2011). The category of non-fair use items is recognized by the database as requiring for copyright permissions processing. At the end of the process, the permissions are cataloged as granted, denied, pending, cancelled, or converted to a URL/PURL (see Figure 3). In the case of media, such as films or video clips, the copyright permission is always purchased directly from the copyright owner. After recording the invoices for payment of granting permissions, the final procedure is to insert the proper copyright notice into the Reserved Readings section of the online classroom as well as attach it to each copyrighted reserved reading.
The Copyright Request Management system database has the function of filtering and checking each required copyright request and assigns each new copyright request a record number with a status indicator. When the team begins the process of seeking the copyright permission, the database is programmed to link and login directly to the Copyright Clearance Center’s online application. The database retrieves the bibliographic information from the copyright table in the Access database and automatically fills in all necessary information to the CCC online request form. The automated process progresses until the application is completed, and it concludes by logging out of CCC. The status indicator changes accordingly to either a pending record if the cost is not available at the time, or to an invoice pending record status if the price is confirmed and an invoice will be issued. The Copyright Request Management system database also retrieves detailed licensing information from the CCC online application as well. Once a CCC online order has been completed, the conformation ID, the order detail number, the order price, and associated numbers are automatically recorded and inserted into the database’s copyright table.

The database will also flag any unusual or irregular requests. If an ISBN or ISSN cannot be found via the CCC searching function, the database will generate a pop-up window for other search options. If a permission request is cost prohibitive, as set by ILS, the database will issue a warning in a pop-up window. If a permission request is over the allowed fair use page limit by CCC, the database will reset the request status and notify the faculty to review the required pages and resubmit a modified request.

According to the ILS electronic reserves statistics, about 68% of copyright permissions are obtained via the Copyright Clearance Center (CCC), and the remaining 32% of copyright permissions are obtained via the publishers or rightsholders. Before the Copyright Request Management system database was streamlined and fully implemented, the electronic reserves team had to process the CCC requests manually. A single request can take minutes to input by copying and pasting required information from the database tables into the CCC online application. The repetition of this process can be taxing, especially during peak times at the beginning of the semester. It could take several weeks to enter hundreds of CCC requests manually. Entering requests by hand also left the risk for potential human error, such as transposing numbers, duplicating records, or entering inaccurate information.

Since not all copyright requests can be filled through the Copyright Clearance Center, roughly 32% of permission requests must be obtained by contacting the publishers or the rightsholders directly. The database will change the status to direct a request to the rightsholder when a request cannot be processed through CCC. The electronic reserves team will search to locate and record the appropriate copyright owner in the database. A database table keeps detailed contact information for frequent permission publishers and rightsholders, including their mailing address, Web site, fax number, e-mail
address, and phone number. Their required or preferred application format to evaluate the permission request is also stored in the database. Commonly, letters, faxes, or e-mails are acceptable formats for the permission application.

The database will automatically generate a request for each record for which directly contacting the publisher or the rightsholder is needed. A pre-written permissions request in the form of a Microsoft Word template is filled in with the copyright holder’s information, the requested material’s bibliographic information, and the requester’s contact information. Depending on the publisher’s preferences, permission requests can be generated as letters, faxes, or e-mails. Once the request is finalized, the database confirms that the request has been correctly generated and updates the completed process status of the copyright request record.

Timeliness is probably the most important element in requesting copyright permission. In order to leave publishers enough time to process the requests and respond during the same semester, requests should be made as soon as possible. This will also leave the electronic reserves team sufficient time to follow up or request copyright from different sources if necessary. Consistency with the required information on application format is also essential. The same uniform information should be standard on each permission request with all publishers or rightsholders. The electronic reserves team makes the effort to ensure that permission requests won’t remain unanswered. A six week timer is started on each request in the database when the permission request is submitted to the rightsholders. Once that time is expired, the request’s status will be marked as unresolved. After receiving either non-granting or no response from the rightsholder, the electronic reserves team must decide to follow-up with the original rightsholder, redirect the copyright request to different rightsholders, keep the unresolved status to allow more time to re-evaluate the request, or revisit unresolved requests while attempting due diligence.

Conclusion

Electronic reserves tend to be a disagreeable subject between publisher and library communities (Gasaway, 2000). The electronic reserves team has learned from the experience that transparency is often the best policy when dealing with publishers and rightsholders. Publishers are not necessarily concerned only with reasonable compensation of their protected works, but also the specific scope of the permission. Each permission application that electronic reserves team sends to publishers explains in detail the use of the material, the steps taken to protect the material from extensive dissemination, and a definite timeframe in which the material will be available to the current designated online class. Because of the transparency of the copyright process, the publishers and rightholders tend to respond more positively with fewer questions and rejections regarding the permission requests. By being open and up front with the publishers and rightsholders, most of their concerns and reservations toward the copyright issues can be assuaged.

Because of the streamlined process of copyright permission using the Copyright Request Management database system, the electronic reserves team can effectively manage the day-to-day copyright requests process. The majority of the request process is automated in the database, including generating formatted templates, keeping track of unresolved requests, and updating process status. The streamlined database not only minimizes the labor-intensive copyright clearance process, but also provides opportunities for staff development to involve more in-depth library projects. Recently, the electronic reserves team worked with the Library Web Specialist to update the electronic reserves management database tables to prevent potential corruptions. Further planning includes upgrading the database to a more recent version of Microsoft Access, as well as automating other tasks that manage the electronic reserves process. Additional planning includes adopting CCC permission integration services which will fully integrate with our workflow of copyright requests to have better licensing solution.

As the copyright issues continue to be debated, developed and magnified, the Register of Copyrights at the United States Copyright Office issued a report on “Priorities and special projects of the United States Copyright office, October 2011-October 2013” (Pallante, 2011). Based on the report, the U.S. Copyright Office is expected to provide a preliminary analysis and recommendations on copyright issues in 2012. Hopefully, all the critical issues that publisher and library communities are greatly concerned with will be addressed and better clarified in the near future.
References


Footnotes

1 The Reserved Readings Requests system, an online web program, and the Electronic Reserves Management system database and the Copyright Request Management system database, both Microsoft Access databases, were developed by Peter Burslem, Library Web Specialist, at Information and Library Services at UMUC.
The use of distance learning technology has allowed Northern Kentucky University’s W. Frank Steely Library to remove traditional boundaries between both distance and on-campus students. An emerging model that applies these distance learning methodologies to all students has proven effective for enhancing reference and instructional services. This enhancement is seen most clearly in the seamless incorporation of two traditionally separate services. This paper will examine how distance learning technologies have allowed an academic library to consolidate a number of once independent endeavors into a single, comprehensive model for students, instructors, and librarians alike. Additionally, this paper will specifically examine the model’s administrative and pedagogical advantages.

Introduction

It has long been assumed that the primary audience for academic library programming is the on-campus student and instructor. This assumption has been supported historically by the relatively small number of students enrolled in distance learning courses versus face-to-face courses, and by the fact that academics have preferred face-to-face instruction. Recently, the advances in educational technology has raised concerns for the development of greater pedagogical skills to enrich the distance teaching and learning experience. However, as the contemporary online teaching and learning environment is significantly more engaging and interactive than its earlier form, and as online class offerings have increased with more students enrolled in these courses, a paradigm shift is needed. The library faculty of Northern Kentucky University’s W. Frank Steely Library (Steely Library) has seen these transformative forces as a stimulus to reconsider the library’s traditional modes of assistance and teaching. An inclusive model for reference and instructional services that uses distance learning technology to remove the boundaries between distance and on-campus students has emerged. This model has proven effective in serving both audiences, as well as, providing a seamless integration of reference and instruction, two conventionally separate services.

Historical Development of Separate Library Services for Distance Learners and On-Campus Students

Academic libraries have relied on technology as a means to support distance learning access and service for decades. Libraries began using telephones in the 1950’s and 1960’s, mail delivery of books and article copies in the 1970’s, World Wide Web-based email, chat, and messaging in the late 1990’s, and with proliferation of cell phones, Simple Messaging Service in the 2000’s. Although the use of these communication technologies was not implemented specifically for distance learners, these added service options were often cited as meeting the basic requirements of library support for off-campus courses. Libraries continued to build services and allocate resources based upon an assumption that the primary audience and the preferred means to interact with researches was via in-person assistance and class presentations.
As universities designed enhanced distance learning programs, primarily through the introduction of online course management systems, the basic library service offerings proved more and more inadequate. Faced with the disparity between the expanded distance learning experience in online classes, and the elementary library services offered, academic libraries began to reevaluate their commitment to the distance community of learners. Some libraries were inspired to create additional distance or emerging technology librarian positions. Some libraries, without additional staffing, developed parallel offerings of reference and instruction using reassigned staff. The realities of library staffing and funding meant that distance services were still limited, and on-campus services suffered as a result of even minor reallocation of resources to these small distance programs. In effect, libraries created two competing programs, sharing an identical purpose, but for two, perceived separate audiences. In addition, the division of services for these two communities of learners presented an unclear path for users desiring assistance. Students were forced to self-identify as an on- or off-campus student before seeking assistance. Even more confusing was the dual service offerings faced by students taking both face-to-face classes and distance courses.

**Development of Integrated Library Services for Distance Learners and On-Campus Student**

While many academic libraries maintained a distinction between their on- and off-campus users, a technological innovation was blurring the boundaries between these audiences. The emergence of web publishing technology allowed libraries to migrate print guides and other library publications, often used with on-campus classes and students, to online web pages. The appeal for most libraries to utilize the World Wide Web was the significant operational and cost efficiencies. Electronic tutorials, research guides, and other learning objects became a singular collection of resources, benefitting traditional students and distance learners alike. Some of the strain evident in libraries, those trying to provide separate services to distance learners, was lessened. The impact of the switching from physical to web-distributed resources had non-financial dimensions as well. As librarians experimented with and developed innovative electronic research guides, the concept that libraries could effectively employ online communication systems as an educational asset for all students was established. When online course management systems would shortly follow, the logical next step for librarians was to have the same expectation of educational value utilizing these technological tools.

At Steely Library, the realization that a single service could be the optimal platform for serving both distance and on-campus audiences came unexpectedly as part of a pilot for an embedded librarian service. The program being tested was designed to employ reference assistance as an enhancement for face-to-face information literacy instruction for on-campus classes. Ideally, librarians, who presented these single-class information literacy sessions, were then embedded in the same courses to answer follow up questions, and to have an opportunity to recommend additional sources and research techniques. The stumbling block to establishing an embedded, semester-long collaboration between librarians and specific courses was the scheduling demands inherent in working with face-to-face classes. Even if course instructors were willing to devote additional class periods beyond the initial session to research instruction, the relatively small number of librarians in Steely Library’s instructional services division would not be able to accommodate the demands of multiple sessions per course. Embedding librarians as a physical contributor or co-instructor in a class would also be a demanding scheduling drain on the library faculty. Inspired by the growing number of distance courses, Northern Kentucky University’s (NKU) course management system, Blackboard, was identified as a possible solution. The initial decision was made to target those on-campus courses, which used this online system for some of their class communication. The embedded librarians could set up Blackboard Discussion Board Forums within their assigned courses to review and respond to questions posted by students, as well as to post additional instructional materials, while not being constrained by the class meeting hours.
The original idea that this embedded librarian program would be a service exclusively for on-campus classes, accompanying face-to-face instruction, quickly changed. When the pilot service was announced, online course instructors expressed an immediate interest to be included, and the program was expanded to include distance courses. Yet, the primary goal remained the enhancement of information literacy instruction that students had received in a face-to-face presentation. The program had not been envisioned to provide individual reference assistance without a foundational information literacy instruction for the class. With distance courses joining the program, Steely librarians began to discuss the broader question of whether effective library-based instruction could wholly be achieved in the online environment. Certainly, the current collection of web-based research guides were being used by individual distance users, and librarians had become accustomed to incorporating these resources as links within email, chat, and text reference assistance. It was then not a significant leap to package these resources, and utilize additional instructional technology available in the Blackboard course management system to produce a web-based version of the information literacy instruction.

The favorable response of distance course instructors to the embedded-librarian program was the turning point in a re-conceptualization of reference and instructional services at Steely Library. Within the pilot, the use of online teaching tools and methods served as a replacement for face-to-face presentations and proved that a face-to-face interaction was not critical in providing effective instruction and reference services. Indeed, as the library faculty continued to build expertise and resources in the realm of online education, distinct advantages to delivering services via distance learning systems emerged for all groups involved: students, course instructors, and librarians. In reality, the need to redundantly address the research and information needs of distance and on-campus audiences no longer existed, and a new model was born, using online course management systems as the platform for holistic assistance and instruction.

**Pedagogical Advantages to Programming via Distance Learning Technology**

As librarians developed distance “substitutes” for in-person instruction using Blackboard, a number of benefits became immediately apparent and, in many cases, were pedagogical superior to their face-to-face equivalents. Extending the duration of engagement to an entire semester, as opposed to a single, ad hoc session, fostered a more robust and direct relationship between students and librarians. Using the asynchronous communication components of distance learning technology, librarians were no longer confined to a single, 50-minute session. With such a short window of opportunity, it has often been suggested that only three major information literacy concepts can be covered, and often at a cursory level, in a typical face-to-face library instruction presentation. Instruction provided within an online course setting can be expanded and incremental, and therefore better reflect the research process and support student acquisitions of these skills. A variety of teaching methodologies can be employed to meet multiple learning styles whereas, within a one-time presentation, librarians will teach generally and to the middle. Online information literacy units can be presented nearer to due dates for each part of the assignments, allowing students to progressively apply each skill set throughout the research process. Furthermore, students have more options for how they use instruction to build their research skills. Course materials can be accessed at the students’ preferred pace and in response to the timing of their individual needs. In addition, the portability of content makes the guidance provided available whenever each student needs to consult the resources. Posted instructional materials remain in the course site for review by any student, accommodating the recursive nature of research. Resources and instruction can be tailored, revised, and immediately applied to the needs of the course, assignments, and students, addressing multiple learning styles, emerging needs, and students of differing levels of information literacy preparedness.
The growing preference for online instruction and reference has also encouraged the growth of a stronger collection of teaching and assistance tools in Steely Library. As online resources -- tutorials, webguides, video presentations, etc. -- are now the fundamental vehicles for delivering instruction and class-wide research assistance, librarians have focused more attention on the expansion and improvement of this collection. In addition, although the sharing of resources among the library faculty has always been encouraged, materials produced for in-person instruction and assistance were not always formally documented. For example, the librarian, who planned a learning exercise for a face-to-face instructional exercise, had to transcribe that classroom activity and then load it onto a shared computer drive for the use of other librarians. Now, this librarian can instead build an exercise for use online via Blackboard, and the resource is immediately available to other librarians to reuse and re-purpose for other classes and assignments. Using an unpopulated course shell in Blackboard, the librarians had a virtual space to easily deposit and redeploy these resources to class Blackboard sites. Preparation and delivery of programming materials were thus streamlined, and each librarian could increase the number of classes and individual students reached. Service assignments for librarians have almost doubled since the online, distance learning model has been more fully adopted at Steely Library.

As librarians increasingly took advantage of the in-house collection of teaching and assistance resources, more planning has been directed toward producing resources that can be sampled and reconfigured to meet the unique needs of each class or researcher. Newer library guides are being designed as smaller modular units. Learning theory research has suggested that this parsing of educational content into smaller segments facilitates greater absorption by students. The typical guides that had been produced in support of face-to-face instructional class presentations covered all steps and skills for the assigned research project in a single resource.

Finally, the active participation of all librarians in the joint production of and use of these resources has been a positive professional development tool. All librarian are benefiting from access to exemplar resources, designed by more experienced librarians, by librarians with a specialist-level knowledge in particular collection areas, and by librarians with particular talent for creating engaging educational activities or the use of new technology in material production.

Options for enhanced reference assistance also developed as the online embedded program matured. Within the traditional modes of reference assistance, librarians have customarily worked without the benefit of the course materials: syllabi, assignments, and readings. And as such, librarians have not had an explicit understanding of the course, professor, or assignment requirements. This gap has profoundly shaped the student experience. In the absence of these materials, librarians have conducted reference interviews with students to help determine a context for the questions being asked. What class is the assignment from? Who is your professor? Are you working on speech or a paper? How long does it need to be? What types of resources are required? Do they need to be peer-reviewed? Do you need primary documents? What is your topic? What have you found thus far? Where have you looked? When is this due? Even with an exhaustive interview, this method of gaining an appropriate perspective for research assistance has proved to be more of an art than a science, and can be fraught with opportunities for miscommunication. The librarian has been dependent upon the student to accurately reflect their assignment requirements, as well as to articulate their own research needs. With the distance learning model, librarians can review course materials in advance of assistance. Ultimately, having a contextual understanding of the students’ needs lessens the burdens of effective communication of both students and librarians alike.
Within the traditional modes of assistance, engagement between librarians and students has often been serendipitous and largely based on schedules, the availability of librarians, and, sometimes, facilities. The librarian who answered an initial reference question was often not the same librarian who answered the follow-up questions, often prompting a second reference interview, and the librarian who provided information literacy instruction would often not be the librarian providing research consultations. The traditional models of assistance and instruction forced students to engage with the library as an anonymous institution with interchangeably random representatives providing ad hoc assistance. This approach has been particularly troubling in an era where academic libraries and librarians have gone to such great lengths to cultivate users, devotees, and defenders. Choosing this model for service delivery has had a broader positive institutional impact.

Institutional Benefits of Programming via Distance Learning Technology

Academic libraries have experimented with many programming techniques to elevate the placement of information literacy instruction within the university’s overall curriculum. Using the distance learning model with librarians embedded in courses via the online course management systems has been a boost to both the visibility and vibrancy of information literacy instruction and reference assistance at NKU. Students in these courses now encounter information literacy concepts integrated with other academic content germane to the subject being studied. This level of integration highlights the fact that information literacy is not just a series of procedural skills but an information-based form of critical thinking. The librarian who communicates in the same forum and in the same ongoing relationship as the course instructor does is more likely to be perceived as a faculty member teaching valued academic content. The typical face-to-face programming, which places the librarian in the role of a one-time guest speaker or in a random consultation pairing when a student requests reference assistance in the library, is a much less influential placement.

As demand increased for this enhanced participation by librarians in courses, so did the need to expand staffing. As noted previously, the tools available for distance service have streamlined instruction and reference processes so that each librarian can reach more classes and students. Similarly, employing a distance learning model has enabled more of the Steely Library faculty to participate in reference and instruction services. In traditional face-to-face services, schedules must match the time divisions of the daily class schedule, and accommodate for reference assistance throughout most of the library’s operating hours. Although these face-to-face, synchronous service schedules are arranged around estimates of when requests are most likely to occur, this remains a costly “just-in-case” system of personnel allocation. Online or distance service delivery reduces dependence upon “just-in-case” scheduling without reducing the potential volume of instructional and assistance interactions. Library faculty can provide instruction by preparing teaching materials within a more flexible schedule that accommodates other work demands. Within a course online site students can spontaneously “deposit” their questions with the assurance of a response at a publicized, predetermined time. For the librarians, the task of providing timely responses to questions is condensed as compared to answering individual questions posed throughout the day. If a student chooses to submit a question in a class reference discussion board or wiki, the librarian’s answer is instantaneously provided to all interested students. In these cases, an additional efficiency in service was realized without compromising the needs of student researchers. The flexibility of online programming has meant that a broader range of library faculty with diverse job assignments, responsibilities, and work schedules can participate in reference and instruction. Librarians with non-class related responsibilities (such as part-time administrative librarians, those in variable service demand programs such as a Systems Librarian, etc.) that would prohibit weekly desk assignments or routine availability for face-to-face class presentations can effectively be embedded in online courses. These librarians may not be available for synchronous interaction, but at some point during the day or week, they could devote the necessary time to post online instructional tools, respond to discussion board postings, and answer individual questions asynchronously.
Distance Service Programming Becomes the Preferred Approach

Until recently, the Steely Library has dedicated the majority of the library faculty’s service hours and resources to providing assistance and instruction for on-campus students and held face-to-face engagement as the preferred model for the delivery of services. This left a growing portion of the NKU community --students and course instructors in distance, online, and hybrid courses-- underserved. Recognizing this fundamental inequity, Steely Library initially set about to meet these distance learning information needs by mimicking on-campus offerings. However, the unrealistic demands of providing parallel services were quickly evident. A constructive solution was discovered during Steely Library’s investigation of Blackboard’s instructional features. The online course management resources provided more sustainable, efficient, practical, flexible, and effective tools for delivering information literacy programming than did the traditional face-to-face model. With the current state of online educational technology, the distance learning model has proven to be the preferred model for service delivery.

Due to the success of Steely Library’s course management system-delivered model, the library faculty have identified a new role for librarians, which will extend the depth and breadth of information literacy studies throughout the curriculum. Capitalizing upon the cohesive, integrated relationship between librarians, course instructors, and students, made feasible by the online module, the librarians will be able to more directly develop curriculum and services in a strategic and intentional manner. The reactive nature of the traditional face-to-face model has emphasized serendipitous engagement and limited teaching opportunities. In order to insure that the vital life-long learning skills of research, information use and evaluation are part of the educational programs at NKU, librarians must be in a more central and integrated position. And, the online instruction model places librarians in this position.
Poster Sessions
Can't Spare the Class Time Blues:  
A Remedy for Teaching & Assessing Research Skills of Graduate Students

Kristin Bernet  
Erin Hagar  
Steven Heslip  
Sharon Morris  
Stephen Stich  
Chella Vaidyanathan  
Johns Hopkins University

Ever heard the lament from faculty “We would love our students to do better research but we can’t spare the class time?” The objective of this poster session is to share the analysis of the challenges, successes and lessons learned collaborating to develop a multi-media self-paced tutorial for graduate students in a part-time Master’s degree program. By completing the required tutorial on their own time prior to the start of classes, students learned to search academic literature, evaluate various sources of information and use APA citation style to document research. The tutorial was developed using SoftChalk software to provide a higher degree of interactivity in the lessons. The tutorial also included a graded assessment in which students needed to answer correctly at least 80% of the tutorial questions and complete a survey designed to gather feedback. The tutorial, residing in Blackboard, consisted of seven lessons. Incorporating multi-media, most lessons contained embedded videos, screen shots and an interactive task. A self-check quiz was also included. The average time needed to take the tutorial was estimated to be six hours. As part of the analysis we surveyed and followed-up with telephone interviews to try to determine if the learning objectives were achieved, what students learned and more about the user experience – how did students approach the tutorial and what did students think about it? Is a self-paced online tutorial an effective tool for learning/reviewing research skills? If we offer this tool, how can we seek to improve it?
This poster describes 3PI, the change initiatives adopted by the University of Maryland University College (UMUC) to improve ILL services (branded DocumentExpress). UMUC is a four-year public university with 90,000 students worldwide. It has campuses in the US, Germany, and Japan and holds classes in twenty-three countries. The average borrowing turnaround time at UMUC prior to 3PI was 7.1 days. Over six years (2005-2011), the DocumentExpress Team reduced this nearly 70% to 2.3 days. Staff accomplished this while maintaining a fill rate of 85-90%. The initiatives are these: 1) creating a Patron first perspective; 2) professionally cultivating People working in DocumentExpress; 3) continually streamlining workflow Processes; and 4) maximizing Information technology use. The first initiative is central. It represents a contextual basis for the staff. In fact, it is the first of eight core values: “Always consider what is easy/best for patrons over what is easy/best for us.” Professionally cultivating people refers to continual professional development expectations. Team members are broadly trained in all access services duties. Webinars, tutorials, etc. related to core duties are also encouraged and required. The goal is to create proactive and creative frontline problem solvers. Continually streamlining the workflow is somewhat self explanatory. Workflow should be considered a living, organic process, and it is never closed to criticism/revision. Micro-managing and this-is-the-way-we’ve-always-done-it complacency is not tolerated. The final category, leveraging IT, is linked to the second and third categories, i.e., professional development related to IT is encouraged, and technology solutions are frequently implemented to speed workflow.
If virtual libraries are the future of libraries, systems librarians are critical components in ensuring the success of this digital future. A successful systems librarian often has to know and stay up-to-date with a large assortment of technical and library knowledge. On a daily basis, they have a wide array of tasks that includes implementing and maintaining various library systems, troubleshooting problems, ensuring access to electronic resources, responding to the technical needs of faculty, staff, and students, providing training, and liaising with the IT department. This poster will show how the two systems librarians at a distance education university that has approximately 90,000 students and over 4,000 faculty and staff have documented and shared their expertise and knowledge among the other librarians. As part of a cross-team training effort within the library, the systems librarians have poured their knowledge into an easy to use wiki format within Microsoft SharePoint. Learn how they produced and structured the documentation to create a more collaborative and knowledge-sharing work environment that allows them to work more effectively and efficiently, as well as to provide the best library technical support to the university’s constituency. Having this knowledge readily available also allows others within the library’s systems and access team to provide technical assistance when neither of the systems librarians are available.
Use of an Open-Source CMS as an Infrastructure for Creation and Presentation of Modular, LMS-integrated Library Learning Objects

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In early 2011, librarians at the Community College of Vermont (CCV) undertook an overhaul of the outdated information literacy tutorial used within the Vermont State College (VSC) system. In assessing the schools’ needs and current technological possibilities, it became apparent that they could take advantage of this update to construct a flexible tutorial infrastructure that would allow for easy creation and presentation of future library learning objects and tutorials. The system they set up is built in Joomla, the popular open-source content management system (CMS). Joomla and similar CMSs are well suited to tutorial creation and presentation, as they allow for the creation of html-based learning objects as content “pages” that can then be sequenced into longer tutorials using the CMS’s menu structure. In addition, this type of system is modular in that multiple different tutorial “paths” can be created from the available pages, which was important within the VSC’s multi-institution environment where different institutions might need different versions of tutorials. Finally, the modular permissions structures of CMSs allow a setup where different stakeholders have the ability to edit and maintain different content. This poster session will describe the tutorial creation and presentation infrastructure that was developed (including how the resulting tutorials are integrated into classes in the VSC’s Moodle-based learning management system), as well as hopes for future expansion and development of the system into a broader system-wide learning object repository.
Get Your Bib On: The Bibliography of Library Services for Distance Learning

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Now in its 5th edition, the Bibliography of Library Services for Distance Learning provides annotated citations of the literature in this emerging area of librarianship. This poster promotes the Bibliography in all of its editions and publicizes the recently completed 5th edition and the work of over seventy librarians who wrote more than 300 annotated citations in eleven categories of literature vital to distance librarianship: organization and planning, document delivery, information literacy, interlibrary loan cooperation, case studies, managing e-resources, and more. Since its inception, the Bibliography has provided an indispensable service to distance librarians and information professionals, aggregating the most important works in the field as they relate to distance library services. This annotated bibliography has been published since 1991, not only as a means of disseminating scholarly work and best practices, but also as a way to document the historical changes that have taken place in the ever-evolving specialization of distance librarianship. The poster will introduce the Bibliography to a new audience, especially those who may be new to librarianship or new to supporting distance learners. In addition to introducing and promoting the bibliography, the poster will provide a historical perspective of the bibliography's creation, underscore the importance of librarian collaboration in producing the finished product, and also give viewers information on how they can volunteer to write annotations for the 6th edition.
The crafting of the dissertation literature review has been given short shrift by educators who assume that students already possess the skill set needed to be successful in this regard. While this may be the case with students in traditional doctoral programs, returning students in executive or working adult-centered formats may have been absent from higher education for years and are, therefore, disadvantaged because of the continuing advances in information technology. Additionally, many of these students have never before been required to conduct sustained research for a larger project like a thesis or dissertation and often experience great anxiety at the beginning of the process. In response to these needs, the Director of the Instructional Management and Leadership (IML) doctoral program at Robert Morris University (RMU) asked Jacqueline Courtney Klentzin, RMU librarian and IML alumna, to teach a one-credit literature review workshop for students to ease their transition from classroom participant to individual scholar with the caveat that the students were not required to be on campus during the workshop time period. In order to accomplish this task, Dr. Klentzin opted to use asynchronous, lo-tech technologies that were commonly available to help student navigate the various resources and services the RMU Library offers. Dr. Klentzin pushed information to the students on a weekly basis for seven weeks, which included required readings and small assignments. Feedback from the students at the conclusion of the workshop was positive in terms of improved information literacy and increased research self-efficacy.
Since December 2008, the college’s distance learning department has offered the “What’s Next” orientation, giving new online learners an opportunity to ask questions, become familiar with the Blackboard interface, and settle nerves regarding Web-based courses. The distance learning librarian joined the team delivering the orientation at its inception to broaden the scope and inform students of the array of resources and support available online. The 90-minute three-part presentation highlights services available to online students, navigating Blackboard, and library resources for online learners. Along with time to help students with any initial difficulties they’ve encountered, a 10-question assessment is included at the end in an attempt to determine attendee grasp of the information presented. The orientation is available in several formats: at in-person sessions on campus; through the Web conferencing application Wimba; and via asynchronous online screencast. The library portion presents a LibGuide for distance students, brief search demonstrations of the online collection, and how to access the library from work or home. Participation in the orientation affords the library an opportunity to reach students in a systematic way in the beginning steps of their online learning experience, and has also helped foster a strong working relationship with distance learning colleagues at the college. In Fall 2011 attendee survey results, 96% of respondents said they gained new relevant information about the library for use in their classes. One future direction for “What’s Next” is a greater reliance on the screencast presentation, which continues to be the most popular version.
Academic integrity is a major issue for college students and research professionals alike. Properly citing sources both in-text and within a bibliography is a crucial step in avoiding plagiarism and ensuring academic success. To help ease the citation confusion and frustration that can plague students and faculty, I created a citation assistance resource that includes LibGuides for MLA and APA citation styles, links to helpful online resources and a comparison chart of free online citation tools. The LibGuides offer examples of citations from print, electronic and multimedia resources that are commonly used for research papers and projects. These guides may be linked to individual courses through our Learning Management System (LMS), or accessed by students directly on the library website. For those who prefer citation tools that help build bibliographies, we have created a comparison chart and how-to guides for five popular online citation tools, including BibMe, EasyBib, Zotero, EndNote Web and Mendeley. This chart provides students and faculty with a concise guide to finding the tool that will be most beneficial for their immediate assignment and throughout their academic career. The versatility of delivering these citation aides through the library website, in LibGuides, and via the LMS allows the library to serve students and faculty both on and off campus.
“Must Bend Databases to My Will”: Students’ 6-Word Library Memoirs

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The 6-word memoir is a meme begun at SMITH Magazine: it has spawned a Web site and a series of print books. The idea is simple: people write a life story in exactly six words. I adapted the meme in the online library-skills class that I teach, assigning students to write a 6-word library memoir that conveys a library, reading, or research experience. Students responded to the assignment with witty, surprising, and sometimes irreverent memoirs: “Must bend databases to my will”; “Really, my school has a library?”; “Would pay for a researching robot.” My poster session shares students’ 6-word library memoirs and shows how they reflect students’ attitudes toward using the library and acquiring information literacy skills. Student memoirs reveal feelings shared by all researchers at one time or another: bewilderment, frustration, and a sense of being overwhelmed. But they also show a growing confidence in navigating the research process: using library databases, citing sources, etc. Students also used their 6-word memoirs to comment on the shift we are seeing from print to e-books; the challenges and rewards of distance learning; and statements about libraries and librarians that ranged from the irreverent to the warm and appreciative. This poster shares the background of the 6-word memoir as a publishing and Internet phenomenon and how I adapted the idea for an online classroom assignment. The poster is based on my article in the June 2011 issue of College & Research Libraries News.
Two Birds, One Stone: Learning Objects for Use in the LMS and the Classroom

Danielle Skaggs
California State University, Northridge

Are you teaching in two worlds – online and in person? CSU Northridge is a public, suburban, master’s university that has experienced growth in hybrid and fully online classes, and its reference and instruction librarians wished to extend their active in-person instruction program into the online sphere. In an effort to serve both in-person and online instructional needs, we developed a set of learning objects created to address commonly taught information literacy concepts that can be used in the campus learning management system and in the classroom. The poster will detail how the topics for the learning objects were selected and how they were created. It will also provide examples of the learning objects and describe how they are stored for easy access for librarians and for import into the campus learning management system. Finally, the poster will also include a description of how the learning objects are being promoted within the library and on campus in general as well as describe ongoing assessment of the learning objects (particularly in the campus learning management system). The dual utility of these learning objects will be of interest to attendees from institutions with a similar split between online and in-person instruction and to attendees interested in using learning objects in campus learning management systems such as Moodle, Blackboard, Desire2Learn, etc.
Chatting on PCs and texting via mobile devices are becoming the standard modes of communication, especially due to their popularity among young people. Chatting tools such as MSN Messenger, Google talk, Skype, and Meebo are used on a day-to-day basis by millions of users across the nation. The authors present the experience of using IM for live, online reference service at the Houston Cole Library at Jacksonville State University. The authors introduce the unique features of Blackboard IM, review the implementation process, examine the outcomes, and summarize future endeavors.
Librarians generally use three types of video to create content for online learners: recorded PowerPoint presentations, screencasts of live searches or other modeling of computer use, and personal “facetime” videos. Used in a variety of situations, these videos can range from casual to professional and require different lengths, tone, preparation, and production. This presentation details the situations in which each of these types of videos is the ideal choice. Librarians may find that a highly-polished, professional tutorial is required for videos housed on the library’s website, while a short explanation of a database search technique made for a specific online class works best with a tone that is casual and conversational. The presentation details suggestions for the best use of each of the three types of videos and the production requirements for the situations in which librarians would use them.
Do you have a suspicion that your off-site and online students and faculty are overlooking or bypassing valuable library resources? Are you concerned about dwindling budgets and how that may hamper efforts to stay connected with your clientele no matter where they are? And do you want to do it all without breaking the bank? This poster session will examine the various challenges and practical strategies to help connect a geographically scattered clientele with the library. It is important in this time of very limited resources that we put time, effort, and money into meeting real needs. To provide services and resources to clientele based solely upon assumptions can possibly waste valuable time, effort, and money.
Panel Discussions
Synchronous online library instruction is becoming increasingly more common, yet the use of this technology for individual reference assistance or consultations is still emerging as a venue for assisting distance learners. Panelists from a range of institution sizes with varying student bodies and circumstances share their unique perspectives on using online meeting technology to work with individual distance learners in real-time versus working online with larger groups. Panelists will highlight their diverse approaches to individualized synchronous virtual reference using various Web conferencing tools, such as Wimba, Elluminate, Blackboard Collaborate, or Adobe Connect, to demonstrate library skills and tools. They will talk about whether faculty collaborations were utilized, to whom they provide online reference services, and how sessions are scheduled and advertised. Selections of the software platforms will be discussed, including the various technological companion tools and solutions the panelists have used. Panelists will address technology problems they have had, how they handled them, and offer advice to those contemplating this endeavor. They will also discuss how they assessed their services and what they see the future of these services to be. Panelists' valuable insights, gained from experience, can be applied by a wide range of attendees. Discover a variety of methods that may work at your library!
It's Alive! Engaging Students in Asynchronous Information Literacy Courses

Harvey R. Brenneise
Chadron State College

Dan Gall
University of Iowa

Jim Kinnie
University of Rhode Island

Annie Knight
Chapman University

Sara Rofosky-Marcus
Queensborough Community College

Beth West
Southeastern Louisiana University

Developing and delivering engaging, student-centered, asynchronous information literacy courses is a challenge faced by more and more distance education librarians due to the increasing number of online classes being offered through academic institutions. This panel discussion is intended to be a forum for librarians who have developed and/or taught such courses to share ideas, best practices, worst practices, and advice with audience members. Panelists include librarians from a variety of academic institutions who come to that table with varying degrees of experience in developing and/or teaching asynchronous, online, credit-based information literacy courses. These individuals will share ideas about engaging and interactive online course design and teaching methods. Recommendations for course materials, assignments, effective use of course management systems, assessment, collaboration, buy-in, implementing new courses, marketing strategies, workload management, and aligning course development with larger institutional and professional standards will be offered by panelists. Resource materials will be made available to audience participants including examples of assignments and recommended professional development resources. To ensure audience members obtain practical, timely, and relevant information from the session, they are strongly encouraged to engage in the dialog by sharing their own experiences and asking questions of panel members. This panel session is intended to be a collaborative environment.
All Shook Up: The Future of Distance Librarianship in Changing Organizations

Stefanie Buck  
Oregon State University

Amy Hofer  
Portland State University

Kate E. Adams  
University of Nebraska, Lincoln

Sheila Bonnard  
Montana State University

William T. Denny  
California University of Pennsylvania

Mary Anne Hansen  
Montana State University

Samantha Schmehl Hines  
University of Montana

Libraries responded creatively to the rise of distance education with a variety of staffing models to provide services to distance patrons. But the tremendous growth of hybrid and online learning in higher education complicates the category of “distance” library users. As distance services blend more and more seamlessly into services for all patrons, how will we - as a profession - make a shift in how we define ourselves? Join a lively discussion on the role of distance librarians, and the viability of existing models of service, in a brave new world where students are no longer neatly defined as “on-campus” or “distance.” The group will explore how distance librarianship might change and grow in order to provide the best service possible to support student learning. How will we collaborate with library colleagues? How will we draw the line between distance librarians and subject librarians, and do we still need to? How will we manage workload and training needs? Panelists will discuss their experiences working in a variety of staffing models: a lone distance librarian without specific liaison duties; a separate department for distance services; and a department of subject librarians who all integrate in-person and distance services. Emphasis will be placed on how distance services are incorporated into the organizational structure and how models are changing. Attendees are encouraged to share their perspectives in order to round out the conversation on this fundamental issue.
In the Trenches: Librarians Embedding in the Online Classroom

Natalie Clewell
Northern Virginia Community College

Lizah Ismail
Limestone College

Edward Daniels
Southern New Hampshire University

Shelley Arvin
Indiana State University

This presentation explores the levels of embedding that take place in online classes at four institutions: a large, public community college; a mid-sized private non-profit four year university; a small, private, four year liberal arts college; and a large state research university. Through the perspectives of these different experiences, we will show the scalability of embedding in the online classroom, and how this promotes the integration of information resources and librarians into the academic environment. Areas of embedding that are covered include: faculty collaboration, how the embedding began, and administrative support for such a service, assessment and challenges of providing such a service.
Best Practices for Embedded Librarians: Strategies for Successful Online Library Services

Sandra Lee Hawes
Saint Leo University

Farzaneh Razzaghi
The University of Texas—Pan American

Johanna Tuñón
Nova Southeastern University

Kristin Heathcock
Hillsborough Community College—Plant City Campus

Katy A. Hite
Roosevelt University

Joanna M. Anderson
East Tennessee State University

Join panelists to explore examples of best practices in embedded librarianship. Panelists will provide valuable tips and tricks for implementing or refreshing existing embedded librarian projects. Panelists reviewed the literature and aligned published best practices in online instruction with examples from personal experience to create a short list of best practices in distance learning librarianship. Panelists reveal practical tips and techniques for working within online courses, including: telecommuting; embedding in each section of an introductory online class; developing sequential instruction and services for online doctoral students; establishing methods to track, document, and assess services; and gaining the director's support for embedded librarians. Panelists will focus discussion on librarians embedded in online courses, whether providing synchronous or asynchronous services. Many librarians are already embedded in courses or have plans to embed soon. Join panelists to learn more that will equip you to overcome current problems, anticipate potential roadblocks, envision a new project, find a new direction for a current project, and make connections with librarians for support. A LibGuide [http://saintleo.libguides.com/embedded-librarians-panel] provides access to conference materials, including an annotated bibliography of best practices in embedded librarianship.
Workshops
This workshop, led by librarians who have successfully converted information literacy or library research classes to online formats, will help you convert your existing class to an online, asynchronous format. Librarians have been teaching information literacy and research skills and adapting their teaching techniques to the needs of their users and the limits of available teaching tools for a long time. As colleges and universities increasingly emphasize online or hybrid classes, librarians are increasingly using course management systems, tutorials and other technological means to meet students where they are. By the end of the workshop, participants will have a plan for converting their class to online, asynchronous format. This is a practical learning opportunity and participants are expected to bring a syllabus for their traditional info lit class for analysis.
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