Brick & Click Libraries

Proceedings of an Academic Library Symposium

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Brick and Click Libraries
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INTRODUCTION

This year's proceedings are chock full of information that encourages us to use digital means to make sense of our environment as a whole—both the brick and the click elements. Some of the authors' goals are to share ways they are helping both students and faculty hone their information literacy skills. Others are evaluating students' and faculty skills in areas such as accessing RSS feeds, searching the Web, retrieving information from proprietary databases, interpreting and creating citations, and evaluating the quality of sources.

Acquisitions, collection development, and technical services librarians may want to peruse selected papers that discuss a locally developed acquisitions retrieval system, generating metadata using Excel, human resources tips and suggestions, collection development and weeding workflow strategies, and serials evaluation. Paradigms for organizing workflow that employ software applications and new interfaces that interpret holdings are included, highlighting the advantages and drawbacks of some of these technologies.

Several selections explore processes and models for streamlining public service in libraries, reflecting on the service improvements gained and the interim adjustments necessary. One particularly interesting session at the conference will provide suggestions for communicating with student employees.

There are papers which describe the social ramifications of software development and use. A few of these specifically focused on using free software to create online presentations, employing cloud computing resources that are accessible from any location, harnessing the power of Web 2.0 virtual space applications to design real time library spaces, and embedding podcasts in library services and instruction materials.

Multiple information literacy instruction strategies, widgets, *Libguides*, pedagogy and assessment are highlighted. "Humanizing" and improving the quality of virtual reference is the subject of more than one paper. Usability testing returns as another area of interest.

We hope that you enjoy Brick and Click Libraries and take time to read the papers that appear in these proceedings.

Connie Ury, Managing Co-Editor

Brick and Click Libraries Symposium

How Effective Is a One- Session Library Instruction?
An Assessment of Student Learning Outcomes

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Abstract

Most college libraries offer one-session library instruction tailored to class assignments. Monmouth University librarians aimed to determine if one-session library instruction is effective for building information literacy (IL) skills for students. The study assessed the library instruction program for the information technology (IT) freshmen classes over the course of three semesters. Two instruments were installed in the course management system for the assessment: pre-and post-tests and a student survey. The instruments were administered by the class faculty to monitor the learning progress of students and to rate the effectiveness of the library session.

The difference between the pre- and post test scores was statistically significant, suggesting that one-session library instruction model was effective for student learning. In the survey portion, most students rated the library session highly, confirming the value of the library instruction. The results of the tests indicated that students needed the reinforcement on the use of library catalog and research databases. Furthermore, teaching faculty made a significant difference in student learning when they reinforced the IL concepts in the classroom.

In conclusion, while one session library instruction is useful, many changes can still be made to improve student learning. The learning styles of the Millennials are taken into consideration as the researcher proposes strategies to improve library instruction.

Turning Your Virtual Reference Service into the Kind of First-Class Service that Users Expect and Deserve

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Abstract

After more than a decade of virtual reference services, a variety of problems persist: absence of a reference interview, communication limitations, extended transaction times, concerns about the quality of instruction, and technological problems. This session will briefly go over problems identified in the literature and recommend free and/or low cost solutions to solve these problems. In the session, participants will learn how they can effectively communicate online and maintain the "human" dimension of reference services in the virtual environment, shorten transaction times by using simple-to-use and free technology, and solve some of those persistent technological problems encountered in virtual reference service. Making small changes in the way we do virtual reference can ensure we provide the first-class service that users expect and deserve.

The Process and Promise of Consolidating Public Service Desks:
You Can't Hurry Love

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Abstract

Professional literature and anecdotal evidence from presentations at conferences indicate that the consolidation of public service, common in branch libraries and other small academic libraries, is being debated and implemented in some central libraries of larger institutions. The personnel of the University of Arkansas Libraries analyzed this emerging trend in 2008 while addressing new strategic goals. A task force of twelve supervisors ultimately recommended a centralized one-stop service desk in the main library, Mullins. Several major considerations guided the project: streamlining service to avoid the confusion of patrons and the ping-pong effect of referrals among multiple service points, and staffing personnel in a cost-effective manner. Open-minded and thorough brainstorming was critical to the task force's success. This paper discusses the rationale for the changes, explains the process of striving to build consensus across all functions within the Public Services Division, presents factors that led to the decision to relocate reference service to the circulation desk, and reviews the implementation in December 2008 and initial results.

The consolidation of service desks at the University of Arkansas Libraries represents a fairly rare—or at least rarely reported—approach among medium and larger central academic libraries: the merger of circulation and reference at one desk. Initial results have been mixed. Consolidation of several functions within Access Services has allowed Mullins Library to be open extended hours throughout the semester and around the clock on weekdays (24/5) during the finals period. However, to many members of the Reference Department, the elision of the reference desk has been portentous and not decreased their front-line duties to date. Although the consolidation of circulation and reference has some features of an arranged marriage, there remains time to develop a healthy relationship through increased training and a better appreciation of the functions of each partner. The authors, the head of Access Services and the former head of Reference, share their experiences of co-chairing the project, their strategies for its success, and their unique perspectives on this unusual union and its applicability to other academic libraries considering a more literal approach to "one-stop shopping."

The consolidation of the public desks of the University of Arkansas Libraries does not represent a final product, but the beginning of an ongoing process of reconfiguring services to meet perceived expectations of library service and broader institutional objectives within an

increasingly tight budget. The Mullins experience illustrates that the profession must take calculated risks in a difficult fiscal climate to serve a diverse clientele in a relevant, efficient manner.

Introduction

In January 2008 the University of Arkansas Libraries embarked upon a major consolidation of the public service points in the main library, Mullins. Drawing on the literature and a survey of peer institutions, a task force of department heads and supervisors proposed a reconfiguration of service that addressed the libraries' strategic objectives and promoted efficient staffing. The subsequent consolidation led to the closure of several desks and the relocation of the computing staff. It also included the union of circulation and reference services behind the former circulation desk, a significant change given the dearth of examples among larger main academic libraries in the professional literature. The prickly nature of this arranged union of circulation and reference has become apparent, but so have the benefits of the consolidation as a whole, as well as the potential applicability to other academic libraries striving to offer sustainable, innovative services in bleak fiscal times.

Review of the Literature

Several key points characterize the recent literature on consolidation of public service desks. One is the assumption that consolidation minimizes confusion and boosts consistency of service: "The single service desk was created to provide easy one-stop access, reduce confusion regarding where to go for help, and provide more integrated and consistent service" (Moore, McGraw, and Shaw-Kokot 80). The literature acknowledges the demands on the time of library personnel and points to the decline of operating budgets and reference statistics over the last decade, all factors that suggest that streamlining public service in academic libraries to redirect energies toward new and potential activities is advisable. These works report primarily the processes of consolidation and the perceptions of library personnel on the results; however, they are thin on qualitative analysis, with few exceptions (Flanagan and Horowitz 334).

The literature on consolidation demonstrates that academic libraries have taken varied approaches. Mergers include computing and reference at Odegaard Undergraduate Library of the University of Washington (McKinstry and McCracken 391); audiovisuals, curricular and instructional materials, documents, periodicals, and reserves at Atkins Library of the University of North Carolina at Charlotte (Mozenter, Sanders, and Bellamy 401); and government publications, periodicals, and reference at McWherter Library of the University of Memphis (Nall, Rustomfram, and Freilich 1). Comprehensive consolidations have also been documented. The Duke University Medical Center Library consolidated all services except billing (Murphy et al. 379, 391). The Prior Health Sciences Library of the Ohio State University drew on the theories of the design firm IDEO to consolidate public services (Bradigan and Rodman 367, 374). In another article, Allegri and Bedard, librarians respectively at the Health Sciences Library at the University of North Carolina at Chapel Hill and Medical Sciences Library at Texas A&M University, compared the consolidations of services within their libraries (35-37).

Taken as a whole, the professional literature on consolidation of public service points suggests that using personnel more efficiently at public desks can improve service and allow librarians to address other tasks, even if it gives few examples of how librarians redirected their energies when their front-line desk duties were reduced. The tenor of this literature is positive, with no examples of "we wish that we had not done it." However, Allegri and Bedard caution readers that "a single service point will not necessarily reduce the cost of providing information services" (37). In addition, one article argued against comprehensive consolidation and reported that library managers at the University of Massachusetts Amherst, who had implemented tiered reference, returned to a "back-to-the-future" model with reference separate from other services and staffed only by librarians (Fitzpatrick, Moore, and Lang 233).

As helpful as this literature was to the task force at the University of Arkansas, it did not indicate how departments at a specific library would react—and interact—as they adapted to a new environment and partnership. Moreover, the task force at the University of Arkansas found few parallels between Mullins Library at the University of Arkansas and the subjects of this literature: main libraries at small institutions and branch libraries, particularly medical ones. Only after the task force had completed its report did an article surface on the consolidation of circulation and reference at a medium-sized main academic library. The article described the consolidation at the University of New Orleans as successful and potentially having long-term implications: "a more wide-ranging result of this merger is that it has sparked interest in a true marriage of access and reference services," a merger on the organizational chart "into one large department with teams composed of both librarians and paraprofessional staff managing service issues together" (Crane and Pavy 42). Having addressed the professional literature, we now turn to the experience at the University of Arkansas Libraries.

Establishing a Task Force

After a retreat in 2007, the University Libraries devised a three-year strategic plan, which identified a need to evaluate the effectiveness of their existing model of public services. As part of this initiative, a *LibQual Survey* was conducted in March 2008 to understand better patrons' use of resources and services. The almost one thousand responses were largely positive and indicated that undergraduate students in particular valued the library as a place—so much so that they wanted the library to extend its hours. As library personnel began to consider how to meet the mandate for increased hours, the cost of staffing multiple service points—when patrons were checking out fewer books and asking fewer questions—seemed prohibitive. Consolidation might allow the University Libraries to realign staffing to meet evolving demands.

As another facet of the strategic plan, the director for public services appointed a task force composed of both professional and paraprofessional representatives from every unit in the Public Services Division. The task force was responsible for recommending a model—or models—of reconfigured service and was advised that the status quo was not an option. At the beginning of the group's work, the main floor of the central library, Mullins, housed the eight service desks outlined in Table 1. Several of the units—Circulation, Interlibrary Loan (ILL), and Periodicals—with service desks were part of the Access Services Department; others were separate units. There were also service points on other floors for Special Collections, Performing Arts and Media, and Government Documents.

Table 1
Staffing of Service Points on the Main Floor of Mullins Library

Service Point (Department)	Number of Staff During Regular Hours	Hours of Service in a Typical Week	Services and Activities
Reference Desk (Reference)	1–2	95	General queries, in-depth reference, remote access
Research Commons (University IT)	1–2	100	Desktop computers, network printers, software, multi-media stations, wireless access
Main Circulation Desk (Access Services)	2	100	Check out/in print materials, reserves, laptops; ILL pickup, holds and recalls, searches, study carrels, authentication of patrons for remote access and other privileges
West Circulation Desk (Access Services)	1	100	Check out/in print materials, group study rooms; monitor exit and building security and keys; gate counts
East Circulation Desk (Access Services)	1	100	Check out/in print materials, monitor exit, gate counts
Periodicals Desk (Access Services)	1–2	95.5	General information about current newspapers and unbound periodicals, microforms, microform equipment, photocopiers
Binding Window (Binding Unit)	As needed	40	Questions about binding status of periodicals
ILL Desk (Access Services)	As needed	54	Renewal of ILL items, queries about ILL software (ILLiad) and status of requests

Members reviewed the professional literature and assessed the current configuration of service desks in the main library and began discussion on the benefits of consolidation in relation to key points: 1) improvement of service within the paradigm of "one-stop shopping," 2) efficiency in staffing, 3) referrals of patrons, and 4) exploitation of emerging technology.

Brainstorming

The task force's membership included several persons who had recently worked at other institutions. This diversity was an asset to open-minded brainstorming. Members thought creatively to envision the ideal service environment. They generated lists of attributes of the ideal environment and sketched potential reconfigurations of existing service desks, which included a research commons, a busy hub of almost one hundred computers run by the

university's information technology division. The group reviewed statistics for all the service points and identified the following trends over the preceding decade:

- Gate counts steadily increased each year.
- Circulation of books and use of current periodicals declined each year.
- Demand for reference service declined each year.
- Questions about remote access to databases increased, which often required teamwork between circulation and reference personnel to verify a patron's eligibility and to instruct the patron in the use of the databases.
- Demand for study space (especially for groups), laptops, and assistance with electronic reserves increased.
- The call for extending hours of service became more vocal.

Most members of the task force agreed that the existing distinctions among the specialized desks within Mullins Library were far from transparent to patrons. And while managers encouraged prompt and correct referral of patrons to the appropriate desk, mistakes could result in a "ping-pong" effect: a shuttling back and forth of patrons before they reached the right party. Moreover, staffing was a challenge in the multi-desk model, and the rising demand for extended hours of service suggested that the challenge would increase. Thin staffing across multiple desks had ramifications: if one needed assistance to locate materials on a different floor, an employee was reluctant to leave a desk unattended. Spikes in business might be unmet because the available staff were unable to handle the momentary demand; conversely, staff with a narrow range of responsibilities might be idle when not engaged with patrons. "One-stop shopping" deserved a fair hearing and offered potential benefits to both the library's clientele and personnel.

Benchmarking

The task force surveyed eleven peer libraries to track their experiences with consolidation and supplement the professional literature. Feedback from the institutions that had reconfigured or consolidated their service points was examined especially closely. Eight of the eleven libraries had recently completed some consolidation, with the following actions represented: (1) circulation and interlibrary loan combined, (2) reference points consolidated, (3) a traditional reference desk reinvented as a learning commons, (4) circulation and reference merged, (5) periodicals and government documents merged, (6) a traditional reference desk transformed into an information desk, (7) a periodicals desk discontinued, and (8) maps, microforms, reserves, and media merged. Several institutions cited the benefits of their one-stop model, including the reduction of patrons' confusion, as well as cost-effectiveness. One institution reported a correlation between merging services and increased gate counts. Some peer libraries redirected resources from traditional services to exciting new ones, such as an instructional media center. Several libraries depicted consolidation as part of their efforts to adapt to new technologies and to changing information needs on their campuses.

Defining Priorities in a New Environment

Through the processes of brainstorming and benchmarking, the task force noted that most issues that members discussed were related to two broad questions: How could consolidation benefit

the library? And more important, how could consolidation benefit the user? The following priorities emerged from the discussions:

- Limit referrals and avoid "ping-ponging" users.
- Establish a centralized service desk within the paradigm of the "information commons."
- Remodel work spaces and service desks to facilitate workflow and collaboration.
- Facilitate teamwork on shared tasks across departmental lines to improve service (e.g., troubleshooting problems with remote access, scheduling staff).
- Cross-train staff to improve each employee's skills and deliver better service.
- Improve the use of library space overall.

The task force also tackled the issue of tiered staffing for reference librarians. The libraries' administration expressed a desire to redirect the energies of reference librarians toward more expert-level reference work, liaison, outreach, and teaching. The task force agreed with this direction but felt a need to retain some front-line professional presence in the reconfigured environment. Members recognized that many academic libraries face challenges due to downsizing, which requires cross-training of employees in order "to ensure patrons are not inconvenienced by these reductions" (Olivas and McCarley 89). Based on its priorities and the results of the surveys of peer libraries, the task force felt that it was imperative to balance cross-training with an appropriate level of staffing.

From Recommendations through Implementation

The task force had divided into two groups while brainstorming to represent more fully the diversity of opinions within the task force. Each group wrote a distinct proposal. One group recommended full consolidation; the other made several recommendations, outlining the pros and cons of each one. There was a consensus within both groups to monitor service and analyze data resulting from any plan to be adopted in the short term and plan for "one-stop shopping" in the long term. Across both groups a majority advocated the following:

- Discontinue staffing the two entrances and consolidate all circulation and security functions at the main circulation desk.
- Close the periodicals desk during the evenings and weekends and bring the affected staff to the main circulation desk to test consolidation and experiment with cross-training.
- Integrate staff who supervised the computing lab with reference personnel.
- Close the binding unit's service window.

The administration reviewed the proposals within the context of both the University Libraries' strategic plan and a new initiative, working with an architectural firm to plan a refurbishment of the library. There was a general consensus to proceed meanwhile with a modified plan for consolidation in the current building. The administration directed a subset of the task force to lay the groundwork for the consolidation of circulation and reference services behind the existing circulation desk. Preparation was underway by the second half of the fall semester. The binding unit's window was closed. The smaller task force agreed to place circulation staff at the west end of the circulation desk and reference staff at the east end. The west end of the desk was modified to allow egress in anticipation of eliminating staffing at the library's west entrance. Network

drops and telephone lines were added and shelving behind the desk was reconfigured to house a ready reference collection. Equipment was moved immediately after final examinations in December. Computing personnel were moved adjacent to the desk's east end to create a line of staff to work in close proximity and to communicate easily with one another. These moves were accomplished quickly at a low cost and at a slow time to minimize disruptions to patrons.

The first day of the spring semester of 2009 witnessed a new model of public service in Mullins Library. Circulation, reference, and computing staff began to provide service in a common area; the Access Services and Reference departments worked side by side behind one desk. The centralized desk provided in-person, telephone, and e-mail assistance bridging both circulation and reference, including check-out of laptop computers and assistance with remote access to databases; computing personnel were adjacent to offer help with hardware, software, and printing. On the public side, the union occurred seamlessly, but behind the scenes the mandated marriage illustrated the challenges of not allowing partners to choose their mates.

In general, personnel in both Circulation and Reference were cautiously optimistic about the change, but the move was more momentous for the Reference Department. Circulation staff ceded space, but reference librarians abandoned a spacious area that remained in their ken (the old reference desk was retained as a space for in-depth consultations). The two departments also found themselves navigating a cultural and generational divide. The Reference Department was composed primarily of senior faculty members. Along with ready reference and directional questions, the department tackled in-depth inquiries requiring disciplinary expertise. Other than the department head, circulation personnel in the Access Services Department were hourly or classified, and many of the hourly employees were undergraduates. Most circulation transactions followed standard procedures and a bounded sequence with a clear beginning and end.

As the two units strived to adjust to a new environment, the head of the Access Services Department and the newly appointed interim head of the Reference Department worked together to address concerns and prevent the cultural and generational divide from becoming a chasm. Shelving for reference material was modified and the distance between the two stations for reference personnel was increased to address the reference librarians' concern about the lack of space and confidentiality for consulting with patrons and laying out resources during a transaction. The department heads understood that nimble responses to legitimate concerns were essential to make the initial implementation successful and lay the groundwork for assessment and potential consolidation of other public points (although the binding unit's window and west entrance desk had been closed, service was still offered in the daytime at the periodicals desk and interlibrary loan office, and the east entrance desk remained open). Reference personnel received training in general policies and procedures for circulation, as well as an orientation to the online circulation system. In the same spirit, reference librarians scheduled two sessions for the circulation staff to learn how to provide basic reference assistance. The departments took the opportunity to review the libraries' service standards and coach each other on how to refer appropriately between the departments. In addition, the director for public services hosted a gathering of all library personnel affected by consolidation to build team spirit and consensus across her division for the changes.

Commercial software also served as a bridge between the departments as they negotiated their differences. The Access Services Department had automated scheduling its desk in 2006; the Reference Department followed suit immediately after consolidation, and circulation staff provided training. Conversely, the Reference Department had already adopted software for tabulating reference statistics. After consolidation, Access Services began to collect statistics for reference transactions and directional activity. The data in Table 2 indicate that circulation staff engaged in reference activity and confirmed one assumption of the task force: "circulation" and "reference" functions overlapped in the library. The data also suggest that cross-training helped staff in each department develop better familiarity with the policies and procedures of the other and removed some barriers between the two departments. Although the two continue to rely on each other to handle what they do best, a patron can now stop at either side of the consolidated desk and receive knowledgeable service or a courteous referral. Continued training will increase each staff member's knowledge, decrease the need for referrals, and move the organization toward one-stop service for all patrons.

Table 2
Circulation and Reference Data after Consolidation, Spring Semester 2009

Type of Transaction / Question	Access Services Department—Circulation Desks		Reference Department	
	Number	Percentage of Total	Number	Percentage of Total
Research/Reference	278	6%	3305	49%
Circulation	1725	36%	436	6%
Directional	2287	48%	1439	21%
Technical/Mechanical/Guest log in	252	5%	1099	16%
Material Retrieval	127	3%	249	4%
Remote Access	32	1%	64	1%
Software (e.g., Word, Excel)	6	0%	61	1%
Reserve Processing	74	2%	55	1%
Totals	4781	100%	6708	100%

Preliminary Outcomes and the Future

The initial results of the consolidation of public services in Mullins Library have been mixed, but show promise. On the positive side, the library realized two related benefits, both goals of the task force: cost-effectiveness of staffing and greater flexibility. The Access Services Department was able to staff the library two additional hours each weekday throughout the semester (until 2:00 AM) and provide service 24/5 during the final two weeks of the term. These additional hours netted an additional 56,293 gate counts from July 2008 through April 2009, an increase of eight percent. The library staffed these hours without an increase in its budget; and during most hours of business, there were four individuals stationed at the combined desk, which allowed a staff member to leave the desk to assist patrons on other floors. Beyond the benefits of cost-

effectiveness and flexibility, consolidation reduced some of the confusion arising from multiple specialized service points. Fig. 1 depicts graphically the shift in workflow.
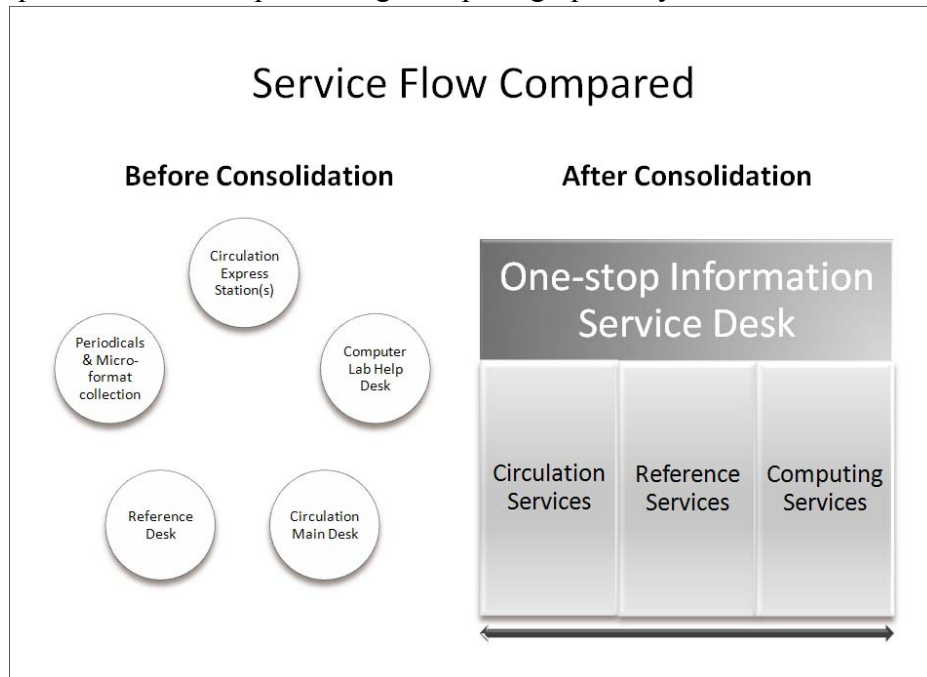
Fig. 1 Comparison of service flow before and after consolidation

On the debit side, change is typically stressful to organizations and requires employees to learn new skills, alter their habits—and sometimes vacate their work spaces. Consolidation at the University of Arkansas has been no exception. Reference personnel lost their own desk, a symbol of their professionalism. Their front-line duties have not been reduced markedly and thus they have not witnessed the same degree of cost-effectiveness in staffing as the Access Services Department.

In spite of the challenges of consolidation at Mullins Library, the future holds promise. Before the changes, fairly rigid boundaries circumscribed the desks and their respective staffs and departments. Now personnel are willing to step across the boundaries among units and departments—boundaries of little external value to the patron—to provide assistance. Of course, departments still have considerable *internal* value; employees are not interchangeable. However, library personnel are beginning to think more about the shared functional aspects of their jobs that cross departmental lines (see Table 2) and appreciate more fully the value of collaboration.

Consolidation at Mullins Library is itself a work in progress. Further cross-training is likely, and there is potential for full integration of the periodicals staff into the central desk, as well as greater integration of circulation and reference staff. The latter could free up reference personnel for other responsibilities and increase the skills and job satisfaction of circulation staff. Another area of potential additional integration is between the existing central desk in Mullins Library and the information technology staff, who serve adjacent to the desk. The services are placed conveniently along an axis, but the two points are administratively separate and provide largely separate services. Continued evolution could produce a fully actualized "research commons" in Mullins Library. And the fiscal benefits of consolidation—not only present, but also potential—

should be iterated: if financial exigency occurs on campus, the experience of consolidation has already built a foundation of stronger collaboration and indicated that library personnel can be nimble when the need arises.

The metaphor of an arranged marriage is a useful lens through which to view the experience of consolidation at the University of Arkansas Libraries. Individuals who had not worked together in close proximity were expected suddenly to work at the same desk. Although there was some consultation, circulation and reference personnel were not free to choose their mates. The merger had a decidedly human dimension that bridged organizational cultures and generations. Other institutions that are considering or implementing consolidations should not ignore this dimension. The authors are somewhat tongue-in-cheek in their reference to the Supremes' 1966 hit in their subtitle, but earnest in their point. Other phrases from the song are illustrative as well. The University of Arkansas Libraries learned that "love don't come easy" and "it's a game of give and take." For such a relationship to succeed it is imperative that it not be rushed.

Conclusion

The University of Arkansas Libraries consolidated key public service points to provide more effective and efficient service within the context of a new strategic plan. The task force and the administration took the approach of nothing ventured, nothing gained. This venture drew on a close reading of the professional literature, a survey of peer libraries, and an appraisal of local needs and available resources. Bringing personnel together in one work space for the first time proved challenging, but the reconfiguration produced significant dividends and shows additional promise. Mergers of service desks may not be appropriate for all academic libraries, but the experience of the University of Arkansas Libraries indicates that consolidation, including the merger of circulation and reference points, has potential at medium and larger central academic libraries. Events in Fayetteville suggest that taking more calculated risks in the profession may be necessary as academic libraries face the challenges of the future.

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How Can Cataloging and Catalogs Evolve and Respond to Expanded User Expectations?

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Abstract

The world of information is changing at an unprecedented rate. Studies show that the 21st century "information consumer" wants self-sufficiency, satisfaction, and seamlessness. People of all ages are spending more time online doing things for themselves that used to be done for them, e.g., online banking, Expedia for travel arrangements, online shopping, etc. Most users are happy with the information they find on the Internet on their own, and many of them don't realize they might be missing out on valuable information, or the information they found may not be credible. Today's college students grew up with computers, and they don't view them as technology, they instead view them as a way of life. They expect a seamless world and want to be able to do everything on a single computer. Many libraries are the opposite of this seamless world, with banks of computers designated for discrete functions. The bottom line is that our users want information now, all in one place, and they don't want to have to go to the library to get it.

This session will focus on how "Next Generation Catalogs" are beginning to address some of these issues. We will look at some examples of "Next Generation Catalogs" that are currently being used in academic libraries, and the *eXtensible Catalog*, being developed by the University of Rochester. The *eXtensible Catalog* features a suite of open-source applications and will run along-side a library's integrated library system (ILS) to allow seamless connections to other web applications. Many people feel this is the library catalog of the future, and should provide the "one-stop" shopping our users are looking for.

But one thing that we have to remember is that proper functionality in any library catalog comes down to the metadata underneath. We will take a look at RDA (Resource Description and Access) the new cataloging standard that is currently being developed. RDA is a "principle based" cataloging standard and will be able to be encoded in MARC, Dublin Core, or other metadata schema. We will also examine FRBR (Functional Requirement of Bibliographic Records), the conceptual framework behind RDA.

We will close the session with an examination of what catalogers can do to ensure that library catalogs remain relevant to our users.

Build an iLibrary with *iGoogle*: Building Blocks for Libraries

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Rachel Erb
Virtual Services/Systems Librarian
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Abstract

In January 2008, *iGoogle* held over 26% of the personalized homepage market share, averaging almost 22,000,000 visitors a month. *iGoogle*'s drag and drop interface allows users to create customized virtual spaces by adding *iGoogle Gadgets*, *Gmail*, *Google Notebook*, *Google Talk* and a plethora of other features to their personal home pages. Libraries are in the unique position to capitalize on the Internet giant's advance into customizable virtual spaces and the OpenSocial venue.

In an effort to increase the number of visitors using *iGoogle* as their personal virtual environments, Google created *iGoogle Sandbox* for developers, which allows third party developers to create Web applications for public and personal use within *iGoogle*. Libraries can capitalize on Google's commitment to personal virtual space development, by utilizing the *Sandbox* tools and documentation provided by the Internet giant to create a myriad of Web applications. Library staff with minimal understanding of Web development will be able to create Web-applications for searching library resources like the catalog, journal lists and databases, as well as Web-applications that incorporate and create RSS feeds and blogs into users personal home pages.

iGoogle allows visitors to include *Gmail*, *Google Talk* and *Google Friend Connect* in their personal homepages. Via *Google Talk* libraries can connect with users in their *iGoogle* pages to provide IM reference assistance. Libraries can catch the wave of OpenSocial, by incorporating *Google Friend Connect* into library websites, blogs and mash-ups. Users will be able to actively engage with library content, posting comments and reviews. Library users will also be able to connect with friends on other networks like Facebook and MySpace via the *Google Friend Connect* feature to discuss issues and exchange ideas.

This presentation will demonstrate how *iGoogle* can provide your library with almost limitless possibilities for connecting with and serving communities. In January 2008, *iGoogle* held over 26% of the personalized homepage market share, averaging almost 22,000,000 visitors a month. *iGoogle*'s drag and drop interface allows users to create customized virtual spaces by adding *iGoogle Gadgets*, *Gmail*, *Google Notebook*, *Google Talk* and a plethora of other features to their personal home pages. Libraries are in the unique position to capitalize on the Internet giant's advance into customizable virtual spaces and the OpenSocial venue.

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Introduction

How can you harness the power of an Internet giant who plays host to almost 22,000,000 visitors a month? Plug-in to Google. The Web Goliath provides a plethora of services libraries may tap into for FREE. Utilizing Google, libraries are able to obtain email accounts and create webpages without having a skilled Web-designer on staff. Through the use of pre-existing gadgets library staff can create dynamic library Websites with minimal effort. Allowing Google to host the library Website frees libraries from the costs associated with purchasing and maintaining a server or paying a service provider to host the library site. If one continues along the Google path, library staff with few programming skills may utilize *iGoogle Sandbox* developer tools to create library Web applications called gadgets. Library specific gadgets allow patrons to customize interaction with library resources by allowing patrons to incorporate these gadgets into their personal *iGoogle* virtual environments and add other Google features to their information experience. Evidence indicates libraries have begun to tap resources available from the company.

Review of Literature

A review of the literature regarding the use of Google as a platform for virtual library presences and services elicits no examples. A few articles have been written on the development of widgets, including an explanation written by John Joyce about the *Konfabulator*, the initial application upon which most widgets or mini-applications are based. There is also some literature available about the addition of gadgets within *iGoogle* to create personal portals. Both Esther Rosenfield and Woody Evans discuss the utility of gadgets for information professionals. Their articles provide ideas for building personal information portals using existing gadgets, but unfortunately, they do not explain how to build a new gadget. In fact,

Edward Metz's comprehensive overview of *iGoogle* is the only article to date that includes an extensive section detailing development of a gadget which may be easily replicated by libraries. He instructs the reader by explaining how he created a gadget for his library. The gadget contains four RSS (Really Simple Syndicate) feeds that display in a tabbed container. These feeds cover military and defense related resources that are of interest to his patrons at the Combined Arms Research Library in Fort Leavenworth, Kansas. The scant coverage of *iGoogle* in the literature clearly indicates we have merely begun to explore the potential of Google's offerings in the information seeking arena.

How Libraries Can Plug-In to Google

Although little has been written about libraries using Google to support library services, the company offers many building blocks librarians may use to create virtual presences. On April 1, 2004, Google launched an electronic email service, *Gmail*, which was by invitation only (Google Inc., "Google Gets the Message"). Google opened up *Gmail* to everyone on Feb. 14, 2007 (Google Inc., "From Gmail with <3"). Via *Gmail* a library staff member working in a library with little or no technical support is able to create an email account for the library, which provides the library an additional way to communicate with patrons. A *Gmail* login also facilitates access to many of the development tools accessible through Google.

In 2006, Google Labs launched the beta version of *Google Page Creator.* Individuals with a *Gmail* account were instantly able to begin creating webpages. Once a *Gmail* account was set up, library staff with no knowledge of HTML and few technical skills could then move on to create a simple library webpage. Google Page Creator provided users with 100MB of space, several style templates and an easy-to-use AJAX-based interface for uploading files (Bangeman). Google replaced *Page Creator* with *Google Sites* in 2009. Pages that were created using Page Creator were able to migrate to a new location on Sites with permanent re-directs to the new hosted location. In some cases, pages created externally and uploaded into Page Creator were able to be migrated to Sites. However, Websites with extensive JavaScript and cascading style sheets were not able to be migrated onto the Sites platform. Developers whose sites were not re-configured to migrate onto Google Sites were able to move the Websites to external hosting services.

Like its predecessor, *Google Sites* allows developers 100MB of space and there is no advertising added to pages created through *Google Sites*. However, unlike *Page Creator*, *Google Sites* allows a Web architect to incorporate collaborative authoring into the development of an unlimited number of pages and networks of Websites. Depending on the parameters a developer sets for a webpage, or areas within a webpage, individuals and/or groups may add or edit content within the page. The flexibility for collaboration within *Google Sites* allows library staff to use the application as a wiki and/or a content management system for a library (see Table 1). In addition, several libraries and municipalities are using *Google Sites* for specific collaborative projects, like strategic planning and collection development policies etc.

Table 1
Libraries Using Google Sites as Intranet/Wiki (July 2009)

Library	Location	Google Sites URL
Cook Memorial Public Library Dist.	Libertyville, IL	http://sites.google.com/site/cookcollectionpolicy/
Santa Barbara Public Library	Santa Barbara, CA	http://sites.google.com/site/sblibrarywiki/
Waterford Township Public Library	Waterford, MI	http://sites.google.com/site/waterfordtownshippubliclibrary
Goodwin College Library--Classroom wiki	East Hartford, CN	https://sites.google.com/site/classroomwiki/
Great Basin College Library	Elko, NV	https://sites.google.com/site/greatbasincollegelibrary

Google Sites allows developers to embed rich content like videos, documents and gadgets into any Web page. Although Google Sites provides hosting of pages created within the application, it is important to note that pages created within *Google Sites* may be exported by the developer and hosted on an external service if needed at any point. Websites created within *Google Sites* are immediately searchable within the site, essentially creating an automatic searchable site map. The websites are crawled by Google within a few days of being published and information on the newly created Web sites is quickly retrievable by a standard Google search, another important feature of the service. As of July 2009, eleven public libraries and four college or university libraries are using *Google Sites* to develop and host institutional Websites (see Table 2). A search of Google Sites illustrates many libraries are using *Google Sites* to host sub-pages of library information, like spaces for young adults, children's collections/services, branch library information, library friends groups, pathfinders, citation guides etc. To begin developing a Website using *Google Sites*, login with your *Gmail* account information.

Table 2
Libraries using Google Sites as Sole Virtual Platform (July 2009)

Library	Location	Google Sites URL
Bohecker College Learning Resource Center	Ravenna, OH	https://sites.google.com/site/ravennalrc/
Central Library, Sai Institute of Technology	Balasore, Orissa, India	http://sites.google.com/site/rashmirima/Home/library
Clifton Public Library	Clifton, IL	http://sites.google.com/site/cliftonillinoispubliclibrary/home
De La Salle Santiago Zobel Learning Resource Center	Muntinlupa City, Philippines	https://sites.google.com/site/dlszlrc/
Dummer Public Library	Dummer, NH	http://sites.google.com/site/dummerpubliclibrary/Home
Ekalaka Public Library	Ekalaka MT	http://sites.google.com/site/ekalakapubliclibrary/
J.S.S. Law College Library	Mysore, India	https://sites.google.com/site/jsslclibrary/
Kingston Public Library	Kingston TN	http://sites.google.com/site/kingstonpubliclibrary/

La Crescent Public Library	La Crescent, MN	http://sites.google.com/site/lcrlib/
Marble Public Library	Marble MN	http://sites.google.com/site/marblepubliclibrary/
Maynard Public Library	Maynard MA	http://sites.google.com/site/maynardpubliclibrary/
Preston Public Library	Preston MN	http://sites.google.com/site/prestonpubliclibrary/
Tipton County Public Library	Covington, TN	http://sites.google.com/site/tiptoncountypubliclibrary/
Theresa Free Library	Theresa NY	https://sites.google.com/site/theresalibraryorg/Home
Wibaux Public Library	Wibaux MT	http://sites.google.com/site/wibauxpubliclibrary/

Another virtual component many libraries use to engage their communities is some type of library blog. Google makes the weblog software Blogger available to anyone with a *Gmail* account. Blogware is designed to simplify creation of Weblogs, enabling folks with few technical skills to create blogs. The blogware, *Blogger*, was developed by Pyra Labs in 1999 ("The Story of Blogger"). Google began negotiations to purchase *Blogger* in 2002 and added it to the tools available via the company in 2003 (Google Inc., "Google Milestones"). To create a blog via *Blogger*, login with your *Gmail* account information. A video tutorial is available at the site to get the novice blogger started, along with a Web tour and other documentation.

In 2005 Google launched *Personalized Home Page*, formalizing the company's foray into the personal portal provider sector (Sullivan). The new product was a fusion of other Google offerings, like *Gmail*, *Blogger* etc. with the addition of outside information sources like weather, news and sports. In 2007, *Personalized Home Page* became *iGoogle*. With the introduction of *iGoogle*, the company unveiled the *Gadget Maker* feature, which allowed developers outside of Google Labs to create very basic gadgets to be used on their *iGoogle* pages (Mills).

In January 2008, *iGoogle* held over 26% of the personalized homepage market share, averaging almost 22,000,000 visitors a month (Arrington). *iGoogle*'s drag and drop interface allows users to create customized virtual spaces by adding *iGoogle Gadgets*, *Gmail*, *Google Notebook*, *Google Talk*, *Google Friend Connect* and a plethora of other features to their personal home pages. In an effort to increase the number of visitors using *iGoogle* as their personal virtual environments, Google created the *iGoogle Sandbox* for developers, which allows third party developers to create web applications for public and personal use within *iGoogle*. Libraries can capitalize on Google's commitment to personal virtual space development, by utilizing the *Sandbox* tools and documentation provided by the Internet giant to create a myriad of web applications. Library staff with minimal understanding of web development will be able to create web-applications for searching library resources like the catalog, journal lists and databases, as well as web-applications that incorporate and create RSS feeds and blogs into users personalized home pages.

Google Gadgets

The Criss Library at the University of Nebraska Omaha has successfully developed and implemented several *Google Gadgets*. Before delving into gadget specifics, it is important to understand their emerging importance in the development of personal virtual spaces. Through

Google Gadgets users have access to over 30,000 gadgets created for a myriad of purposes--like entertainment, work productivity, research etc. Via *Google Gadgets* users may customize their *iGoogle* pages with this large array of mini-applications thus creating a personal portal to information and services that are useful to them alone. Users also have stake in gadget development as they are able to create gadgets with the newly robust *Google Gadget Editor*. Once created, newly developed gadgets will be made freely available to the public, pending validation from the overseers at *iGoogle*, within a few days. This practice has become so common that, in fact, everyday users are developing a majority of the gadgets found within *Google Gadgets (Descy)*. There are two main purposes for libraries to become involved with *Google Gadget* creation. First, creating library-specific gadgets assist patrons in developing a customized search experience that includes local resources and databases, such as the online catalog. Second, the existence of these gadgets can be an effective marketing strategy in promoting the Library's resources.

Before attempting to create a gadget, it is important to understand the technological underpinnings. In essence, *Google Gadgets* are XML files that run inside an iframe on your webpage. The XML file is divided into three parts: module preferences, user preferences, and content (HTML with inline *CSS*, *JavaScript*, and sometimes *Flash*). In order to explore the anatomy of a *Google Gadget,* let us deconstruct a typical gadget. Opening a *Google Gadget* in the *Gadget Editor* is how one can view the three parts. The first part of the gadget, module settings section (<ModulePrefs>), is about the gadget itself. The first line must always be a declaration of the XML file (<?xml version="1.0″ encoding="UTF-8″?>) in order for the gadget to function. These first few lines of code indicate the gadget's size, title, author, etc. The purpose is analogous to the <head> portion of an HTML document. Specifically, the second line <Module>, indicates the file contains a gadget. The third line, <ModulePrefs title="RSS Feeds"/>, is the title of the gadget. In this case the title is "RSS Feeds". There is also an optional user preferences section (<UserPref>) that is employed when a gadget may require a user to input certain fields "that are turned into user interface controls when the gadget runs" <http://code.google.com/apis/gadgets/docs/reference.html#Userprefs_Ref>. The content section, (<Contenttype="html">), is where gadget attributes and user preferences are combined with *HTML* and *JavaScript* coding to render a functioning gadget.

Fortunately, creating many *Google Gadgets* does not require knowledge of any of the aforementioned programming languages. Those with a background in *HTML* may have a shorter learning curve, but the task is not insurmountable for those who lack a web authoring or programming background. For novice *Google Gadget* creators, it is highly recommended to use the *Google Gadget Editor* for creating the first few gadgets. While it is true that most text editors and web authoring software products work just as well, the unique feature of the *Google Gadget Editor* (GGE) is that it enables testing and efficient troubleshooting of the gadget before it is launched. The GGE allows the user to edit gadgets and preview the live results for publishing it. The GGE contains popular gadgets and API examples that can be opened in the GGE and edited for customization. One of the more useful applications of the GGE is the ability to save and upload a previously created gadget that accomplishes a specific task, but is not one of the popular gadgets for which script is readily available within the *Sandbox*. There are numerous library related gadgets from institutions that may be copied and customized to reflect one's local institution. Some of the more useful library-specific gadgets are catalog and journal title

searches, *Meebo* chat boxes, new title and library news RSS feeds, and reference tools such as dictionaries, thesauri, almanacs, local weather, etc. Effectively copying an existing gadget for editing can be tricky for those new to *Google Gadgets*. First, it is imperative to use the "open from URL" feature of the GGE. Next, there is currently one precise area on the gadget's page to reliably obtain the gadget code. On a particular gadget's page, look for "view source" which is currently linked under the Webmaster's section. Viewing the "source" displays the coding for the gadget. Once the "source" is open, copy and paste the URL for the "source" into the URL window on the "open from URL" feature of the GGE.

Once the gadget it created, the gadget's XML file can be stored on a web server or a Google hosted site. The Criss Library's *Google Gadgets* are stored both on the library's web server and the GGE. Storing the code on the GGE makes the most sense during experimentation. Also, in many cases, not all library personnel have access to the web server. Storing the code on the GGE is a reliable way to circumvent this issue.

Library use and development of *Google Gadgets* is gaining traction. Performing a keyword search of existing *Google Gadgets* using the query "library" yields scores of library related gadgets. Many of these gadgets centralize several local research tools like the online catalog, A-Z journal lists and online databases into a single widget container. There are also many library gadgets of various RSS feeds.

While the *Google Gadget Editor* makes creating gadgets relatively easy, it is important to remember gadgets must be maintained. Changes to the services and resources accessible via gadgets may result in broken gadgets. Changes to the platforms hosting services and the gadgets themselves, may also render gadgets useless. In addition, if gadgets contain library branding it is important to update gadgets as institutional logos, etc. change. Gadgets should also be reviewed regularly for relevancy. Updating websites and virtual tools, like gadgets, is important to sustaining a dynamic virtual presence.

Conclusion

Unlike *Google Gadget* utilization and development, there is no literature available regarding the use of Google as a platform for library virtual presences and services. However, evidence shows some libraries have used the Internet giant in this manner. Google provides libraries with an arsenal of tools to build complete virtual presences, including email, Website development tools and hosting service, blogware and *iGoogle Gadget* development tools, to name a few. In addition, libraries with *Gmail* accounts are able to provide IM reference assistance to patrons via *Google Talk*. Libraries are in the unique position to capitalize on the Internet giant's advance into customizable virtual spaces and the OpenSocial venue, by incorporating *Google Friend Connect* into library Websites, blogs and mash-ups, allowing users to actively engage with the library by posting comments and reviews about library events, resources and services. Although evidence indicates at this point only a few libraries have used Google as the sole platform for their virtual existence, many libraries utilize one or more of the tools available via Google to augment their virtual presences. Google is an economical alternative for libraries with few resources. Google also allows library staff with minimal technical skills to create professional-

looking resources. It will be interesting to see if as library budgets continue to tighten, more libraries tap the resources offered by Google.

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Evaluating *CamStudio* and *Wink* Screen Capture Programs for Library Instruction

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Abstract

To explain the various features of electronic databases, library websites, and online resources to their patrons, academic librarians are increasingly using screen capture programs to create presentations. These programs range from free software such as *CamStudio*, *Jing*, and *Wink* to commercial software such as *Adobe Captivate* and *Camtasia*. Though these commercial products are "widely used" for presentations, their full versions cost hundreds of dollars (Clark 75). With the goal of aiding budget-conscious academic librarians, this presentation will compare and evaluate the freely available *CamStudio* and *Wink* programs. In addition to offering audio soundtracks for the video, these programs provide the option for text captions and therefore meet criteria for Americans with Disabilities Act compliancy. Their video presentations consist of a series of captured frames of video activity, which allow for greater detail, efficiency, and ease of editing. Though frames result in larger file sizes in the case of lengthy presentations, both programs also allow for the compression of such files. This allows even lengthier presentations to be placed onto multimedia websites for easy access. Both programs employ hotkey combinations to control the recording process and allow for sections of the screen or the entire screen to be captured. Text captions and other illustrative shapes are customizable and may be edited, resized, or made transparent.

CamStudio and *Wink* also have important differences that will be discussed and evaluated. *CamStudio* is able to convert AVI files to Flash files, allows the user to automatically pan the capture region using the cursor, and accommodates additional video content from a webcam ("*RenderSoft CamStudio*" 29-30; "*CamStudio*" 14, 25-27). However, it also requires third party video editing and only allows text annotations during rather than after the recording process ("*CamStudio*" 3, 24-25). *Wink* translates text into different languages, allows for the editing of its own frames, and more conveniently supports text annotations and interactive buttons during this editing process (Madsen, Worthington, and Kumar 16-26). However, *Wink* only provides video content in Flash format and offers no webcam functionality (Madsen, Worthington, and Kumar 4). In outlining the respective strengths and weaknesses of these programs, this presentation will enable librarians to identify which program best meets the needs of their library.

Introduction

To explain the various features of electronic databases, library websites, and online resources to their patrons, academic librarians are increasingly using screen capture programs to create presentations. These programs range from free software such as *CamStudio, Jing,* and *Wink* to commercial software such as *Adobe Captivate* and *Camtasia.* Though these commercial products are "widely used" (Clark 75) for presentations, their full versions cost hundreds of

dollars. With the goal of aiding budget-conscious academic librarians, this study will evaluate the freely available *CamStudio* and *Wink* screen capture programs. In addition to offering audio soundtracks for the video, these programs provide the option for text captions and therefore meet criteria for Americans with Disabilities Act compliancy. Their video presentations consist of a series of captured frames of video activity, which allow for greater detail, efficiency, and ease of editing. Both programs also employ hotkey combinations to control the recording process and allow for sections of the screen or the entire screen to be captured. Text captions and other illustrative shapes are customizable in both programs and may be edited, resized, or made transparent. *CamStudio* and *Wink* have important differences in their functionality, however, that must also be considered. Because *CamStudio* requires a third party editing program and only adds text boxes and shapes after the recording process, the program is in many respects less convenient than *Wink* ("*RenderSoft CamStudio*" 3; "*CamStudio*" 24-25). *Wink* has the ability, alternately, to edit its own frames (Madsen, Worthington, and Kumar 16-26) and to add text and shapes during the editing process (Madsen, Worthington, and Kumar 18-23). This allows a staff of busy librarians to make video demonstrations more quickly and efficiently. The main advantage of *CamStudio* is its option to add content from a webcam ("*CamStudio*" 25-27), and this is useful primarily for librarians who work in a media center or who use webcam technology on a regular basis. For most librarians, *Wink* is the more convenient and user-friendly alterative for making video demonstrations.

Literature Review

The body of literature on screencast software in libraries reflects this need for accessibility, efficiency, and speed. In "From Cameras to *Camtasia*: Streaming Media without the Stress," Cox describes his task of updating a series of streaming videos for Worcester Polytechnic Institute's Gordon Library. He finds the easiest way to do this is with *Camtasia*, which produces screencasts of quality equal to streaming video for less time and money. These screencast videos are easier to implement than live video and also aid in student achievement. Screencasts may be watched multiple times by students in many different locations and may also be indexed. The equipment necessary to record with *Camtasia* is also cheaper than the equipment needed for streaming video. Cox notes that *Camtasia* is highly versatile, with many potential uses in libraries such as recording reference interviews, summarizing coursework, and producing interactive video tours. He ultimately decides to use *Camtasia* because the program is faster to implement and more cost effective than live video (190-200).

Mack et al. examine the use of the University of Tennessee Libraries website by knowledgeable and practiced users. They use *Camtasia* to collect their test results and state that the program "is relatively easy to install and requires a minimal hardware configuration to operate effectively" (17). In this experiment, *Camtasia* software and human witnesses record the speed and success rate of test subjects as they complete a series of usability tests. According to the authors, screen capture software allows for "an unobtrusive method for creating a permanent record of each session in a level of detail that the human observer could not accomplish" (Mack et al. 22). In addition to being an objective source of information, the authors posit *Camtasia* software provides an efficient and straightforward means of recording online activity (Mack 16-22).

Goodwin addresses key concerns that usability committees face as they propose changes for a website to achieve "organizational buy-in" (610). The author argues that screen capture programs such as *Camtasia* help to achieve this goal through data collection and the communication of test results. Such programs are able to record "usability sessions" and "first-

hand testimonials" to achieve support for the website redesign or "buy-in" (Goodwin 615). During a study at Texas A & M University Libraries, individuals performed various tasks on the TAMU website. *Camtasia* is useful for such studies, as it records and saves audio and visual data to a single file that is conveniently accessed and "available for reviewing by the UC and/or library staff" (Goodwin 616). Providing such a perspective on a usability study, according to Goodwin, leads to a greater sense of understanding by the participants and "help[s] them to better explain web site changes to patrons" (Goodwin 620). Goodwin explains that the features of *Camtasia* allow for recordings to be "effortlessly transferred (via shared folders on the staff server, intranet, distribution by email, CDs etc.)" in order to accomplish this goal (616).

Open and convenient use of the videos, made possible through *Camtasia*'s accessible design, allows library staff to more easily learn, share, and teach the new functions of the website. The concern with usability in both the Goodwin and the Mack et al. articles demonstrates what an important concept this is for librarians. Though these authors are concerned with the usability of their respective websites, they stress that the software used to record their experiments also be user-friendly.

In their review of *Adobe Captivate* and *Camtasia*, Clark and Kou write that these programs are "two of the most widely used screen capture applications" for generating online presentations and tutorials (75). They note that both programs are simple for beginners to learn but also have significant differences in their format and features. *Camtasia*, they write, is the better option for those familiar with video applications. *Captivate* is less difficult to edit but, in some cases, generates presentations with a great number of slides and a large file size (Clark and Kou 75-78). For this reason, the authors encourage users to "consider the lowest speed connection" (Clark and Kou 78) for running the presentation. Clark and Kou effectively compare these two programs against the criteria of cost, format, and usability, a method that informs this study of *CamStudio* and *Wink*.

Wales and Robertson further stress accessibility, efficiency, and speed, describing the creation of an online tutorial for use by information and communication technology (ICT) students. After some consideration, they decide to use *Adobe Captivate* to make a tutorial on search strategies and the use of databases such as *Business Source Premier*. However, they also list several other programs with similar features, including the freeware applications *CamStudio* and *Wink* that are the focus of this study. For other librarians making tutorials, Wales and Robertson recommend that librarians, rather than staff members, develop the content; that storyboards be created beforehand; and that templates be used to save time. They encourage the inclusion of quizzes and the division of tutorials into simple, discrete sections to facilitate learning (Wales and Robertson 365-375). They also encourage librarians to make "very short and simple demonstrations" that are both more user-friendly for patrons and less time-consuming for employees (Wales and Robertson 377-378). Wales and Robertson ultimately endorse making screencasts that are useful for many purposes, time-efficient, and easily viewed and understood by users.

Analysis

The *CamStudio* and *Wink* screencast programs both offer a range of features to their users that are quick, reliable, and clear-cut. They also have many features in common, such as the delivery of video content in the form of frames. In the *Wink 2.0 User Guide*, Moller et al. note several advantages of working in this format: "When editing the file afterwards there are fewer frames to work with and most frames are important. The resulting flash file will also be smaller because

there are fewer frames in the presentation" (6). If the user chooses to take a series of individual screenshots in *Wink*, using a hotkey, the file size will be smaller than for a continuous video. However, if the user takes a greater number of automatic screenshots, the file size will be much larger. For this reason, *CamStudio* and *Wink* offer ways to compress the size of these larger files. *CamStudio* allows the user to adjust "the area of the region being captured," "the (input) rate of which video frames are captured," and "the compressor and compression quality [. . .] essentially making a tradeoff between picture quality and file size" ("*CamStudio*" 29) in order to generate smaller and faster files. The flash file generated in *Wink* is adjustable in a similar way, "through the number of colours used and the chosen frame rate of the flash file" (Madsen, Worthington, and Kumar 7). *Wink* also allows the user to change the capture area from the entire screen to "a specific window or part of the screen (rectangle)" and further reduce file size (Madsen, Worthington, and Kumar 7).

CamStudio and *Wink* also allow for audio tracks and text captions to be added to each recording. In each program, the text captions, accompanying text, and various other shapes may be customized in different ways. *CamStudio* allows the user to select various shapes from a menu, add text to shapes, edit and resize shapes, and upload shapes externally. There is also an option to add a "cutout/transparent region" to each shape to show information in the background ("*CamStudio*" 19-23). *Wink* has similar features, offering a range of shapes or "callouts" that may be selected from a menu and edited for shape, size, text, color, and transparency. New callouts may also be created entirely by the user, and other shapes and images may be uploaded externally (Madsen, Worthington, and Kumar 8-17). *Wink* also allows users to add a customized image to the presentation that may be a "name, logo, copyright messages etc. of the author and/or company" (Madsen, Worthington, and Kumar 7).

Because of these commonalities in the audio, text, and image features of *CamStudio* and *Wink*, the end products of both programs resemble each other in many ways. The crucial differences between the programs, however, lie in how these features are specifically implemented. *CamStudio* offers many options for images and text, but these effects may only be added during recording and in a series of prearranged layouts. Each layout is an "arrangement of one or more shapes on your desktop" that is individually created by the user ("*CamStudio*" 24). "You usually prepare all your layouts before recording starts . . . . When you start recording, you will click a hotkey / shortcut key to cycle through the layouts to display the appropriate captions at the proper time" ("*CamStudio*" 24). This is a very painstaking process, however, that requires a great deal of time and forethought. If a single error is made while recording the video, the user must start the process all over again. This method is necessary in *CamStudio* because the program is unable to edit presentations after recording in any way. Instead, the user must "edit the output of *CamStudio* with a third party video editor" ("*CamStudio*" 3). This is also why audio content in *CamStudio* may only be added "while it is capturing video" ("*CamStudio*" 10). *Wink*, conversely, provides for the editing of its own frames and the addition of material after the recording process. Users may add audio, images, shapes, textboxes, and interactive buttons during this editing stage (Madsen, Worthington, and Kumar 18-23). This makes the addition of these features and the editing process in general faster, more precise, and less labor-intensive for the user.

Conclusion

CamStudio does have features that make the program worth considering for a specific group of users. The most valuable of these features is the option for webcam annotations, which allows

users to "record [webcam] content along with other screen content when the webcam window is inside your recording region" ("*CamStudio*" 25). The webcam window, or "Video Annotations window," is a valuable feature of the *CamStudio* program("*CamStudio*" 25). The option to use AVI format and to convert "most AVI files created by third party products" to SWF is also useful ("*CamStudio*" 30). For certain individuals who routinely use webcam technology or who work in a media center, these features are very important. However, for the vast majority of librarians, accessibility, efficiency, and speed come before any one group of features. When Wales and Robertson recommend only making brief and basic tutorials, they have the considerable time commitments of librarians and library staff in mind. They ask important questions: "Will library staff have the time to get to grips with the software?" "Will the expertise end up in only a few staff?" (Wales and Robertson 377). These are legitimate concerns that, at the very least, demand software that is user-friendly and that creates its end product quickly. After a period of training with *Wink*, library staff will be rewarded with a program that offers many of the same visual, textual, and editing features as commercial software. This added functionality will ultimately make the task of creating presentations easier and faster for librarians. These added features will also improve service to patrons. Unlike many other freeware programs such as *Jing*, *Wink* achieves ADA compliancy and is able to accommodate a more diverse group of patrons. *Wink* screen capture software represents the best balance of functionality, ease of use, and accessibility for both librarians and patrons.

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Physical Space in a Virtual World: Implications for Library Space

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Abstract

The design and use of physical space is an important issue for libraries whether they are located in a virtual world or the real world. For virtual world libraries the major question is to what extent should the library mirror its real world counter-part, if at all. The current state of library "physical presence" in the Virtual World Second Life will be considered and what factors may be influencing the design decisions will be discussed. Second Life can also be used by real world libraries for a cost-efficient tool for developing library building designs for new libraries or remodeling projects. How to get the most out of the design process will be considered.

Introduction

What is a library? When asked this question the first thing that pops into my mind is a red brick building filled with row after row of books. Very quickly my mind moves to fill in more details. I know that libraries hold more than just books so I might add collections of serials and multimedia to my definition. I also know that the items are placed on the shelves in such a way that they can be browsed, and the materials are organized so that they can be easily located. I can borrow most of the materials, although there may be some that can be used only in the library. There will be some kind of reading or study area. There are library staff members that can answer questions if I'm having trouble locating the information I'm looking for and that will check out the materials to me. Finally, I would also include the indexes and abstracts that identify what articles are in what journals. This is what "a library" means to me.

Physical Space in Libraries—the Changing Context

Being a constructivist at heart, I believe that meaning is constructed from experience, and that the individual rather than the object is at the center of meaning creation. I therefore believe that the image of a library that I have described will be similar in meaning for others that share my experience of having lived in the late twentieth century United States. I also believe that the meaning will change over time, and that the question of "what is a library" will, while still sharing some of the characteristics, produce a significantly different response for those born in the twenty-first century. Change is a constant force that continuously redefines our environment. Change for libraries early in the twenty-first century is both rapid and at a paradigm or social norm level. The most obvious change, already readily evident in libraries, is from print to digital media. Perhaps less evident, or at least less talked about, is a shift from emphasis on collections to an emphasis on services we provide to patrons. One might call it a patron centered model rather than a collection centered model. This change is reflected in discussions of libraries as learning spaces. Academic libraries, in particular, are beginning to reflect in their physical spaces these changes in emphasis to digital media and to library and learning services.

In addition to the shift away from print to electronic full-text resources, vanDuinkerken and Mosley identified the direct delivery of electronic copy to desktops, a redefinition of service points, and administrative adjustments to meet the needs of supporting technology as other changes currently taking place in libraries (5). With respect to the shift to digital resources, we have already seen the traditional library card catalog replaced by online public access catalogs. Print indexes and abstracts have largely been replaced by online databases. And increasingly, the information resources themselves are going digital. Many of the indexing databases now link directly to full-text online articles and we are beginning to see greater proliferation of e-books. One needs to look no farther than the print serials collections in libraries to see the impact the shift is having. Current journals that once occupied large chunks of floorspace have dwindled down to a small number of shelves.

Peters discussed the impact of the shift to digital resources in terms of a change in how we interact with information:

> To read a printed book, your eyes must scan each page of print. Often your hands hold or move over the printed page. Even the olfactory sensation of smelling the paper and print creates a wonderfully evocative emotional response for many real world readers. The love of learning and the love of the information object are conjoined all higgledy-piggledy in the mind of the user of a real world library (10).

Digitization, he went on to suggest, "has weakened the link between information and objects a bit, primarily because we now use computers and other electronic devices as intermediaries between humans and information (Peters 10).

At the same time, the idea of the library as a warehouse of collections is shifting towards the library as a learning space. Group study rooms and collaborative work spaces were early developments in this direction, but increasingly we are seeing learning commons in academic libraries that bring into the library many student services related to academic learning. Many a librarian has been heard lamenting the loss of library space to these "outsiders."

This reminds me of the Japanese novelist Tanizaki Jun'Ichirō's essay titled *In Praise of Shadows*. In the essay, Tanizaki lamented the inevitable loss of traditional Japanese aesthetics in Japanese architecture that came with the adoption of Western practices in general and specifically in the transition in lighting from candles to gas lanterns to electric lighting. In great detail Tanizaki described Japanese aesthetic values that were brought out and heightened by the shadows that had disappeared under the new lighting systems. Even while doing so Tanizaki acknowledged the impracticality of maintaining this tradition of shadow in a world lit by modern lighting. Similarly, the traditional library of yesterday is no longer an option. No one really wants to go back to pre-digital libraries any more than Tanizaki wanted to live in a pre-electricity house. What is happening is that "library" is being redefined.

Libraries in Virtual Worlds

Even as this dramatic change to the use of space in physical libraries developed an entirely new realm of possibility was emerging. The development of virtual worlds means that it is now possible to have a library that has no physcial space, or for a physical library to have an alternate

presence in a virtual world. Reflecting on libraries in the virtual world Second Life, Peters suggested that "we may see a gradual abandonement of the entire notion of object-oriented information as our knowledge of how humans can exist as information-creating, information-using, and information-sharing creatures in MUVEs [sic, Multi-User Virtual Environments] changes" (11).

The question "what is a library" is particularly important for any librarian or library considering developing a presence in a virtual world. If your definition is still largely centered on collections, expanding into a virtual world may not make sense. If your definition is more centered on community and providing information services, a presence in virtual worlds makes more sense. Another, perhaps more important question is do you want to participate in the exploration of new possibilities and help redefine libraries and librarianship in the twenty-first century, or are you comfortable sitting back and waiting to see what develops.

Being an old fashioned gamer and a technology enthusiast, I chose to jump in and explore what libraries are doing in virtual worlds and what the potential is. My explorations of libraries and learning in virtual worlds began on July 12, 2007 when I created my Second Life avatar Togashi Jun. While I have looked at other worlds, my activities are focused on the virtual world Second Life. One of the reasons for concentrating on Second Life is that it is currently the largest non-game virtual world and there is a significant library and education presence. As of July 20, 2009, the Alliance Virtual Library's directory of libraries and library organizations in Second Life has 137 entries and their group Librarians' of Second Life has 1357 members.

Fig. 1. Togashi Jun on ALA Island in Second Life.

Fig. 2. The Glenview Public Library in Second Life.

One of the earliest, and probably the most significant library presence to date is that of the Alliance Library System, dating back to April of 2006. By December of 2007 their presence had expanded to nearly 40 islands making up the Info Archipelago. The other islands included Info International, Infotainment, Info Island I, Cybrary City, Cybrary City 2, ALA Arts/Info Island, Renaissance Island, HealthIn fo Island, and EduIslands 1, 2, 3, and 4 (Bell, Pope, and Peters 28). This space has been the central, but by no means only, area where libaries are built. Good starting points for visiting libraries today would be Info Islands I and II, Health Info Island, and the Cybrary City Islands.

Library Builds in Second Life

It is possible for a librarian or library wanting to develop a presence in Second Life to start small and test the waters while exploring the possibilities. It is possible to obtain space for a library at a relatively low cost and in some cases for free by going through an existing organization that has chosen to help facilitate library and/or educational start-up projects. Talis Cybrary Island is one example and their Cybrary Square is one location that such libraries can be found. The buildings, all designed exactly alike, are provided so that the individuals developing the space don't have to worry about the building itself, and this also helps the owner of the island retain a degree of control over the aesthetics. The buildings in such cases are small and therefore somewhat limited as to what can be put inside them. As a result the buildings typically are sparsely furnished and somewhat limited in functionality as well.

A slightly higher level of commitment would be for a librarian or library to rent land somewhere that gives the rentor permission to develop the land as they please. With greater control over the space comes more responsibility and decisions. One of the first is to decide how much you want your space to resemble the real world. The listservs occasionally have fervent proponents of the idea that any type of building done in virtual worlds, because it is free from the physical constraints of the real world, should go in an entirely new direction that has little or no resemblance to buildings in the real world. Consider, for example, that the physical space requirements of real world libraries were influenced by the need for stack space, the need to have a structure that could support the weight of stacks of books, a need for open areas for users to "consult the information objects and each other" (Peters 9). None of these necessarily apply in a virtual world. The design constraints of real world libraries need not limit design possibilities in Second Life. On the other hand, if one of your purposes in having a library in Second Life is to promote the services of a real life library, there may be some marketing value in having the Second Life library resemble the real world library. It is also often suggested that there is a certain comfort level for most people when they find something familiar about the structures of virtual worlds.

Fig. 3. The Nova Southeastern University Law Library & Technology Center in Second Life.

Fig. 4. A steam powered card catalog.

In practice, there is a great deal of variety in library buildings in Second Life. Also, library builds seem to share with other Internet Web sites a need for regular re-development to keep the build fresh, so as one visits buildings one might find the building has changed. One pattern that may be emerging is that library builds begin in buildings that resemble real world buildings—with doors, windows, solid walls, roofs, etc.—and over time morph into structures that allow for greater visibility of the contents and easier movement throughout the building for avatars. Because information can be held in any object, library resources do not have to be in a building at all. Rachelville, a library for children's literature, is an example of a library that was originally designed around a garden theme and was intended to be a library without walls (Sowers 57-58).

Taken a step further, a building or any other object in Second Life does not need to be a permanent fixture at all. Holodecks, for example, make it possible to load a set of objects at will. A person with access to only a small portion of land might use a holodeck to call up different rooms. A library could have a traditional looking outer shell, with changeable inner rooms. The inner rooms that change could be focused on a particular collection or they could just as easily represent a particular service (for example, a seating area for a book discussion).

Objects in the Physical Space

How the physical space inside virtual libraries is used has just as much variation as in the library buildings (or non-buildings). Many of the builds have been structured around some type of desk that more or less mirrors the circulation or information desks in real world libraries. On top of these desks there would often be an object resembling a computer monitor that would typically link, when "touched," to the Web presence of the real world library. The desks in the various libraries are usually not staffed (with the Alliance Virtual Library's Reference Desk being one of the notable exceptions). In place of having an avatar present at the desk, often there is an object that provides information on an avatar or avatars associated with the library and their status as to whether or not they are "in-world". If they are in-world, it would be possible to contact them through the instant messaging function built into Second Life.

Book shelves are often prominent features in library builds. Individual books are often used to hold either a notecard reproduction of a print book or a link to a digital edition on the Internet. Card catalogs exist in virtual world libraries, often used to hold informaton on a category of resources rather than on an individual item. One of my personal favorites are the steam powered card catalogs in the Whitehorn Memorial Library located in a Victorian Steam Punk sim.

isible objects are not always essential in a virtual world. For example, a library could automatically give visitors information about the library whenever an avatar enters the building. This could be accomplished by using a combination of a "notecard giver" together with an avatar proximity monitor. Other "invisible" objects may track and record statistical information about visitors to the library.

Collections and Services in Virtual Worlds

Many of the library builds are centered on a particular collection or collections, much more so than most libraries in real worlds. This can be attributed in part to the builders still opting for more permanent displays, and also for a perceived need to develop more of an interactive exhibit that will hold visitors attention longer than simply linking to notecards or out to digital objects would. Mystery Manor is a good example of a collection centered library.

Peters noted that:

> [A]lthough small collections of digital objects have been constructed, collocated, and organized at various points throughout the IA [sic, InfoIsland Archipelago], collections do not seem to be the driving force behind libraries and librarianship in SL. Events and exhibits, which really are peripheral to the core mission of most real world libraries, may become central to libraries in MUVEs. If that happens, libraries may assume some of the characteristics of other cultural and even entertainment institutions. Museums and amusement parks come to mind, which already in the real world know and apply to great effect the value of exhibits and events to the overall user experience (11).

All MUVEs are inherently centered on social interactions. Among the most common library social activities is the book discussion group. Book discussions are frequently held in Second Life. Through streaming video it is also possible to bring real world events into Second Life. I haven't seen this done with library programming yet, but it is increasingly being done to bring real world conferences into Second Life, and sometimes this even allows for participation from the virtual world avatars. An equally important part of the social interaction is the virtual worlds ability to bring people (or at least their avatars) with similar interests together. The virtual library space may be populated with people physically located thousands of miles apart in the real world.
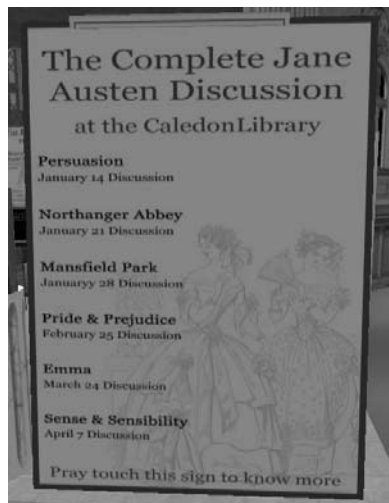
Fig. 5. Advertisement for a discussion series on Jane Austen.

The importance of designing a library space that people will want to visit is no less in a virtual world than it is in the real world. Ball and Bainbridge, reflecting on building a library in Second Life, suggested that "for our building to serve its functional purpose, user-centered design principles must guide our design decisions—along with a healthy dose of trial and error" (119).

Virtual Tools for Real World Space Planning

My explorations of Second Life led me to the realization that the virtual world can also be used as a tool for real world space planning. One of the first presentations I attended in Second Life was given by Eric Hackathorn (avatar Hackshaven Harford) of NOAA. In his lecture he mentioned using Second Life as a tool to help analyze the design of buildings before moving on to the expensive construction stage. He showed us how by tracking avatar movement through different design variations, he had been able to determine the layout that best facilitated traffic flow to the various parts of the building in the manner desired by the designers.
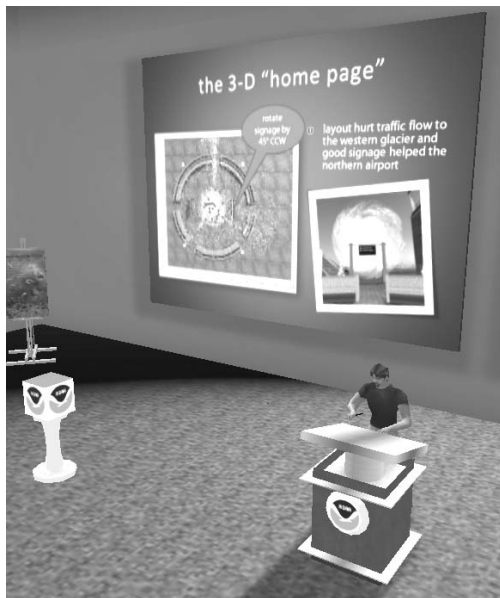
Fig. 6. Hackshaven Harford delivering lecture for NMC Teacher's Buzz.

Roughly one year later my library began to develop plans to remodel the first floor in order to create an academic commons that would house various academic oriented student support services. One of the biggest questions on everyone's mind was (and is), how can all these support services that are currently located in various parts of campus fit into the available space in the library. When we were shown a design layout on paper I began working on a model, and then models, in Second Life. The size of the land space I lease through the Educators Coop in Second Life was not big enough to build a full-scale (Second Life scale) model of the entire first floor. After a little experimenting I scanned a diagram of the library's current design and placed that on the biggest object I was able to work with. The result essentially created the floor plan on the floor of what would become the scale model build of the first floor. With the floor plan to build on top of, it was relatively easy to place the walls in their correct location and in the proper scale. I then made changes to reflect the new plan and completed the "scale model" in a scale

smaller than the Second Life scale. I used this model to make a fly-through video of the plan that stood by itself, and I also presented the model in meetings to give a more visual representation of the plans as they were being discussed. At one point I was even able to change the model as possible changes were being discussed. I also used holodecks to build Second Life scale models of particular sections of the new design that I could pull up or put away at will. For example, one of the ideas in the new plan was to combine the circulation and reference desks into a single desk, so I built a scale model complete with computer monitors and chairs to demonstrate what that might look like.
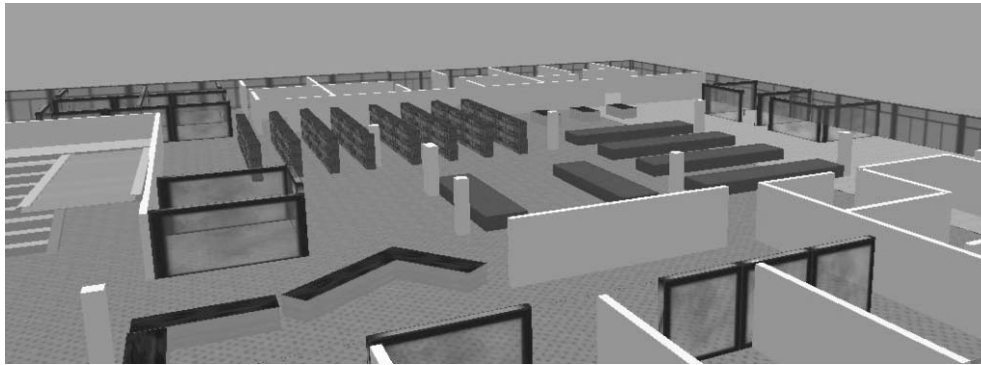
Fig. 7. View of the western half of the scale model.

The casual comments I received were along the lines that it was much easier to visualize the plans when you could see it in a 3-d model in this way. One person even commented that the design felt less concrete and more changeable viewed this way in comparison to seeing a design on paper.

Fig. 8. Togashi Jun in the full-scale model of the combined circulation, reference desk.

Implications for Library Space

If we accept that the social norms regarding our understanding of "what a library is" are changing, we can find similarity between the change taking place in real world libraries and the

development of libraries in virtual worlds. In both cases less emphasis is being placed on the library as a warehouse of collections in favor of more emphasis on a user centered model. It is becoming less important to provide space for reading a book and more important to provide space for social interactions.

On the other hand, how libraries deal with change varies greatly between real world and virtual libraries. Real world libraries are built in relatively permanent structures that have very real physical constraints that need to be dealt with. Libraries in virtual worlds are limited only by the creativity of the builder and change is an important component of a libraries ongoing attraction. Even as we acknowledge that norms are changing, we must also acknowledge that the change is not complete. Virtual worlds provide both the opportunity to explore an entirely new direction and new tools that can be used for managing change in real world libraries.

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"Can You Hear Me Now?" Student Employees and Communication Strategies

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Abstract

Imagine this: you are the supervisor for twenty plus student employees whose priorities are anything other than work. Is it your responsibility as the student supervisor to manage your employees' academic and extracurricular schedules? No. But as supervisors of student employees we do have to think about balancing student needs with the needs of the library.

This session will analyze student employee management through the use of up-to-date communication strategies. We will think outside the box and approach employee-supervisor communications from the student perspective. How do we communicate effectively with people 10, 20, 30 years younger than we and who seem to be speaking a different language? You've probably heard of Facebook and My Space, but have you considered using them for work?

The College of William & Mary's Earl Gregg Swem Library employs a tiered student population ranging from shelvers to students with higher-level staff responsibilities. Different communication strategies are needed to communicate effectively with students at varying levels of experience and training. We must be flexible in our approaches to student employees, but we must also adapt to changing norms of communication.

Implementing effective communication strategies will not guarantee that our student employees will give us everything we want from them. During this session, we will also address student employee development as a necessary step in securing reliable employees.

To ensure students are working for the library, and not just for a paycheck, we must invest in our students. As the College of William & Mary's Human Resources department has questioned its practices in regards to staff and faculty, the library staff has questioned whether we are doing enough for our students. Do your student employees have any opportunity for advancement, or to serve on a library committee? Investing in the training and development of student employees demonstrates a commitment to the student. Wouldn't you rather commit to something that is just as invested in you?

A Virtual Librarian in Any Class

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Abstract

Librarians from South Dakota State University (SDSU) share ways in which they are collaborating with non-library faculty to provide information literacy instruction and other information services to traditional, hybrid, and online campus classes. These services include: *Meebo* chat widgets on library and course web pages; Facebook chat; learning modules/tutorials; course-specific library web guides; and distance library instruction using web conferencing.

"Ask a Librarian" chat services have been very popular with students and faculty requiring research assistance at SDSU. *Meebo* chat widgets can be integrated into any library or course web page, including pages in courseware systems such as *D2L* and *Blackboard*. This enables live communication with a librarian any time the librarian is physically available at the information desk, or during office hours. In addition, library faculty use Facebook's internal mail and chat features to respond to patron inquiries during office hours.

Librarians use *Camtasia* and narrated *PowerPoint* presentations to create short one to five minute tutorials and learning modules demonstrating search strategies relevant across the curriculum. In addition, the instruction librarians collaborate with teaching faculty to create tutorials relevant to the specific research needs of a particular course. Pre-packaged learning modules (such as the Copyright Learning Module) can be shared and loaded into any course available on the university courseware system. These tutorials and learning modules allow librarians to provide focused research assistance where it is most needed, and to meet the demand of faculty teaching online courses.

Online library instruction via web-conferencing, and course-specific library research guides are another example of how librarians can "package" tailored library research materials and make them available to students enrolled in a particular traditional, hybrid, or online course. Librarians at SDSU teach distance library instruction online using *Elluminate* web-conferencing software. This allows students enrolled in distance or online-only classes to experience an introduction to library research similar to those of their peers enrolled in on-campus courses. In addition, course-specific library research guides designed according to the specifications of the course instructor are an excellent sustained online supplement to distance library instruction. Course-specific library research guides are promoted during traditional and online library instruction.

Serials Evaluation Process Improvements:
Advanced Excel "Magic"

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Abstract

For the past decade, the Collection Management Team at Northwest Missouri State University has been transferring serials holdings from print to full-text online due to yearly periodical subscription increases and user preference for online access. They have employed a variety of methods to objectively evaluate serials titles. The evolution of these methods is briefly covered in the presentation. The following advanced Excel features are demonstrated in relation to serials data; IF and nested IF statement, conditional formatting, hide/unhide, filtering, hyperlinking, and data validation. For example, IF and nested IF statements are used for cost per use by format, conditional formatting eases identification of titles under consideration. These features are applicable to any academic library for collection management decision making about serials and student, faculty, and staff needs and preferences.

Collection Development in Tight Economic Times:
A Homegrown Workflow Analysis Program

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Abstract

Collection development decision making requires accurate and clearly presented information about a library's holdings. Today's tight economic constraints necessitate libraries making use of resources in order to shape collections that best meet the needs of users. Relevant data are often difficult to compile due to factors such as the limits of integrated library systems (ILS), database-generated statistics, and overlapping, sometimes diverging, approaches among staff toward collection development.

How can collection management and electronic resources specialists best collaborate to support a collection development program that encompasses books and serials in a variety of formats, especially when those formats are evolving continuously? How can they support decision-making that involves faculty members who may be unfamiliar with library terminology, tools, and concerns such as access and licensing? What opportunities does a collegial management model offer for library staff to collaborate on collection development workflow analysis across the boundaries of traditional roles? With these questions in mind, librarians at Gustavus Adolphus College facilitated parallel workflow analyses of collection development and electronic resources management tasks and applied recommendations to a book weeding project and an electronic resources review. These efforts, conducted as a pilot program for future workflow analyses, emphasize generating information and forging new collaborative relationships to support collection development decisions. Initial findings from the book weeding project indicate a need to better utilize the ILS in order to gain a more comprehensive view of the collection. Initial findings from the electronic resources review indicate a need for a more centralized and efficient system for gathering, organizing, and analyzing electronic resources information, particularly usage statistics. The pilot program also maps an approach that requires no outside funding and can be adapted to analyze other workflow issues.

This session tracks the projects, provides assessment data, and presents outcomes such as new policies, procedures, and tools for providing information to inform collection development decisions. The session also highlights new opportunities for collaboration among collection management and electronic resources staff.

Introduction

The unique collegial management structure of the Folke Bernadotte Memorial Library at Gustavus Adolphus College provides opportunities for staff to work in a truly collaborative manner. Since all library employees assume responsibility for operations, the staff is able to work across traditional boundaries to tackle projects benefitting the library. In spring 2009, the authors undertook an initiative that drew on the expertise of multiple personnel and the strength of our collegial management structure to create a more effective collection development model.

Our initiative took the form of two parallel workflow analyses, which led to pilot projects, and required no outside funding. The authors each facilitated a workflow analysis in her particular area; the systems librarian (Gilbert) worked with the collection manager and collection development librarian to analyze current weeding procedures while the electronic resources librarian (Hulseberg) collaborated with the serials manager to analyze procedures for electronic resources management. The systems librarian applied recommendations from her workflow analysis to a book weeding project and the electronic resources librarian applied recommendations from hers to an e-resources and serials review.

This paper presents findings from our projects and provides a model for creating flexible procedures, forging new cooperative relationships, and developing new initiatives—a model that we plan to apply to other projects in our library and that can be appropriated by other libraries seeking similar methods of collaboration.

Literature Review

Weeding Workflow Analysis & Collection Development

Weeding is collaborative by nature and libraries benefit when they consider the barriers, motivating factors and opportunities facing those involved. In a 2008 column, Lugg and Fischer identify weeding as a pesky chore librarians too often ignore: "[Overcrowded stacks] press on the conscience like that extra ten pounds we'd like to shed, or those files we really should back up" ("Weeding" 87). They stress the necessity for weeding and call for a "Golden Age of Weeding," citing advances in digital technology, service to users, and space constraints as primary reasons libraries need to reconsider their print holdings (Lugg, "Weeding" 87). After discussing barriers such as the amount of time required to cull the collection, Farber highlights the risk to the library's reputation as one of the biggest obstacles to weeding: "If the faculty feels that the library has been at all arbitrary in its weeding process...[the] approval rating of the library is going to be greatly diminished" (2). Metz and Gray emphasize the need for good public relations when a library undertakes a weeding project; they present methods for communicating (and re-communicating) with the library's community. Finally, Crosetto, Kinner, and Duhon outline a weeding project undertaken during a tight timeline that is enhanced by using circulation data available through the integrated library system (ILS).

E-resources Workflow Analysis & Collection Development

The literature suggests that libraries handle e-resource workflow in a range of ways, depending on a number of variables. Carr reports on e-resources workflows at five academic libraries in

terms of the key areas of product consideration, negotiations and technical evaluation, implementation processes, and maintenance. He emphasizes the "degree to which a library's size, resources, user community, and organizational structure can combine to impact its workflows for managing e-resources" (331). A number of authors, including Copeland, Leffler, and Parsons; Mi and Sullenger; and Rupp and Mobley provide case studies of e-resource workflows at a range of academic libraries. Poe et al. describe e-resources management as a "multifaceted process [that] requires the cooperation of all areas of a library from public services to technical services" (87). Price provides guidelines for e-resources collection development in a time of shrinking budgets; topics covered include activating online access for paid journals, evaluating and weeding collections, negotiating, connecting users with open access resources, working with consortia, and using open access e-resource management tools. Joshipura discusses best practices for the selection, acquisition, and renewal of e-resources, and provides checklists of issues to consider when developing e-resource collection development policies and making selection and renewal decisions.

Parallel Workflow Analyses

Many of our staff members participated in a workflow analysis workshop in fall 2008 and were intrigued by the notion of using workflow analysis as a foundation for "task-based strategic planning" (Lugg and Fischer, "Task-Based Strategic Planning" 84). We returned to the library excited about the possibility of applying a workflow analysis to our operations. Our interest in workflow analysis was an organic development rather than a mandate handed down from our library chairperson, an approach in keeping with collegial management. Hiring an outside consultant to conduct a comprehensive workflow analysis was not an option due to budgetary constraints, so the authors elected to pursue a homegrown workflow analysis project in spring 2009.

Weeding Workflow Analysis

Weeding was a logical candidate for workflow analysis due to several factors. The collection has not been weeded on a systematic basis for many years, has outgrown its space and is outdated in many areas. Although all six librarian faculty members share responsibility for collection development, including weeding, our collection work has primarily taken the form of acquisitions. The library recently hired a collection manager, whose responsibilities include assisting the librarians with weeding. A workflow analysis of previous practices provided the perfect springboard for initiating a new weeding program.

The workflow analysis primarily involved conversations between the collection manager, the systems librarian, and the collection development librarian. After reviewing past practices and collection development policies, we identified the two biggest barriers to weeding:

- Due to the heavy workload of librarians, lack of time has always been a barrier to developing a systematic weeding program.

- Circulation data generated by the ILS has not been fully reliable or comprehensive.

In order to address these issues, the systems librarian and the collection development librarian committed to spending time weeding the collection and the team explored available circulation reports generated by our ILS. The collection manager also drew up new weeding procedures, since none existed prior to the analysis. These actions formed the basis of the weeding pilot program.

E-resources Workflow Analysis

Just as all librarians participate in our book collection development program, they also make collective e-resource and journal collection development decisions. The e-resources librarian and serials manager coordinate all other aspects of e-resources and journals management, including gathering and organizing information to inform collection development decisions. Our e-resources librarian and serials manager saw a pressing need to collaborate more closely on e-resources and e-journal management and tear down the artificial walls that were built upon an outdated notion of journals management (think "print") as completely separate from e-resources management.

To initiate our workflow analysis, we created worksheets to analyze tasks related to managing individual resources—tasks such as coordinating trials, adding new resources, processing invoices, and renewing subscriptions. We analyzed tasks related to internal management systems—systems such as spreadsheets with administrative passwords, usage statistics, and vendor contact information. We also created worksheets for tasks related to external systems, such as managing the link resolver, administering the proxy server, and overseeing our *LibData* content management system. The process helped us uncover points of overlap, redundancies, and opportunities for improved efficiencies. Our major findings were as follows:

- Because print journals, e-journals, and e-resources are often intertwined in terms of subscription options and terms (e.g., e-resource licensing terms may affect print subscriptions), it is counter-productive to isolate print journal management from e-journal and e-resource management.

- An electronic resource management (ERM) system would help centralize our program, especially a shared ERM system for e-resources (at the database level) and e-journals (at the title level). We need to explore the feasibility of this approach, as the architecture for such a system could get quite complicated.

- The e-resources librarian and serials manager should collaborate more on managing external systems. Collaboration leads to cross-training, sharing our individual expertise, and reducing redundancies in our workflow.

- We should explore new opportunities to collaborate with other staff. Our analysis suggested that our acquisitions manager, cataloging coordinator, and collection manager could be more involved with projects such as adding e-resources to the ILS, implementing an ERM, cataloging and updating resources in *LibData*, and gathering, organizing, and interpreting usage statistics.

Pilot Projects

Once we conducted our workflow analysis, it was time to test our recommendations. We undertook pilot projects we hoped would confirm, and perhaps call into question, some of the assumptions we made during our initial workflow analyses.

Weeding Pilot Project

The weeding pilot project addressed two major questions: is it feasible for us to weed the entire collection in the manner we are planning and what tools can we employ to help us with this process?

The first part of the pilot program involved librarians heading into the stacks. The systems librarian and the collection development librarian went to the stacks on a regular basis, weeded designated areas, and gave discarded items to the collection manager. Although the pilot program primarily investigated how long it took the librarians to weed, discussions about the process also facilitated conversations about criteria used to cull the collection.

The collection manager met frequently with the systems and collection development librarians to discuss circulation reports from the ILS. Many of the reports were initially unwieldy and conversations focused on formatting the reports to make them usable. The collection manager developed procedures for handling discarded items, including placing materials on a review shelf for other librarians to consider. The collection manager also created forms to track the call number ranges that had been weeded.

After the pilot project concluded, the two librarians and the collection manager discerned salient findings:

- Time will always be a major factor in the weeding process, although it is less daunting than initially believed. Both librarians in the pilot project averaged forty-five minutes to an hour each to weed one case (there are approximately nine cases in a range). Considering the number of ranges in the collection, if a librarian weeds one hour per week during the semester, it will take six librarians approximately three years to weed the entire general collection, which we feel is reasonable.

- After testing new procedures for handling weeded books, the collection manager found that these procedures were efficient in terms of her workflow. As more librarians weed in the upcoming years, her workflow and workload could become a concern. At that time, we would brainstorm how others might collaborate to help with the work.

- Circulation reports are very helpful for weeding. For librarians, circulation data is a defining criterion for weeding, if not always the primary one. Although some of the reports did not initially sort correctly, the collection manager worked with our library's consortium headquarters to develop workable reports.

Sharing results with the other librarians and soliciting their comments helped assess the pilot program and its feasibility, as well as highlight areas of concern:

- Communication during the weeding process is vital. The forms that the collection manager devised to track areas that had been weeded were popular: "I think the forms worked well, as long as folks use them." One librarian recommended finding a way to note if we are purchasing newer editions of withdrawn items. Another librarian suggested figuring out how to communicate with each other about the collection as a whole, such as where gaps could be filled with new acquisitions.

- Although librarians are cautiously optimistic about the amount of time it will take to weed the entire collection, many express concern over how it fits with our other numerous obligations. Opinions are mixed as to whether we should commit to one hour per week or agree that we will weed 12 -15 hours per semester, regardless of when it's scheduled. One librarian suggested we weed in teams: "I think that so much as it is feasible and practical, teams of two weeding together in proximity to each other could be good -- for bouncing questions off each other and for motivation to get into the stacks."

- Librarians are unsure about involving others in determining which books to weed. While a few librarians suggested having work study students pull materials based on strict parameters, such as books published before a certain year, other librarians disagreed: "I'd rather not have them pulled off the shelf for me, just because it's so neat to see them in their natural habitat."

- While involving faculty from other disciplines in weeding decisions is desirable, doing so is difficult: "The more we can involve faculty outside the library in the weeding process, the better, as they are the subject experts. It might also be eye-opening for them to see what we actually have in the stacks. Of course, getting faculty involved means they need the time, interest, and incentive to do this." Another librarian outlined a possible approach: "I have often thought a summer program that involved learning about publishing and libraries, weeding the collection and finding gaps, and how to use these materials in instruction would be cool if we could have lots of money to do it. But even so, the benefit would be more faculty familiarity with the collection rather than efficient weeding, because I think they'd be more reluctant than we are to toss books."

- In addition to circulation data, librarians indicate that our laptops might be the most valuable tool, since they make it easy to learn more about a work in question (such as viewing the number of holdings in WorldCat) before deciding to withdraw it.

E-resources Pilot Project

Due to a budgetary crisis in spring 2009, the library worked with all academic departments to review book allocations, e-resource subscriptions, and journal subscriptions. The review provided a welcome opportunity to analyze our workflow in action; since we attempted to analyze our overall e-resources workflow over the course of a month, we did not have the opportunity to analyze each task in conjunction with actually conducting the task. For instance,

we analyzed the workflow of renewing a subscription, but not during a month when we actually had any subscriptions up for renewal.

Since the review was unexpected and conducted in a tight time frame, we quickly gathered, organized, and formatted data such as pricing, journal format, and print and electronic usage statistics before sharing this information with departments. The e-resources librarian and serials manager assessed the effectiveness of our review process workflow by debriefing about our procedures once the project was complete, soliciting comments from the liaison librarians who participated in the review, and surveying classroom faculty about the review process. In general, our assessment of the pilot project confirmed the findings of our initial workflow analysis:

- We need to adapt our workflow to better integrate electronic and print resource management. For example, a number of titles that appear on one department's journal review list as print subscriptions will soon become part of a large, interdisciplinary, online publisher package and will no longer appear on the subscriptions review list. But the faculty members in that department have requested a comprehensive list of the journals to which we have access in their field. Our current system, which involves tracking e-resources at the database level in a spreadsheet and journals at the subscription title level through our subscription agent website, does not capture titles that are now part of the publisher's package.

- Inefficiencies in our system might be corrected by a more centralized ERM system. For instance, we store our usage statistics in spreadsheets by vendor while our subscription pricing information is saved in a separate spreadsheet by database. This leads to tedious and time-consuming work pulling the database pricing information together with the usage statistics to compute cost per use for databases—and journals are more complicated yet. An ERM that facilitates the storage of subscription pricing as well as usage statistics would provide effective generation of reports.

- Perhaps what struck us most in the pilot project was how much our workflow needs to support a variety of task types. Our workflow called for information-gathering tasks, such as collecting pricing information and usage statistics; technical tasks, such as creating cost-per-use formulas in spreadsheets; and decision-making tasks, such as from what sources we would gather usage statistics. All of these tasks had to come together to support our communication and decision-making responsibilities. We had to communicate our information well with both our librarian colleagues (so they would be prepared to field questions from their assigned departments) and the classroom faculty in the departments.

An online survey of faculty after the review helped assess our communication process. Our findings included the following (n=18):

- The survey suggested that we did some things well. A majority of respondents (83%) found the database and journal pricing helpful and 72% found the journal format information helpful. Many respondents expressed that we communicated well about the review process, but regretted the fact that it was necessary to cut resources: "[O]ur task

was to trim journal subscriptions. You were very clear and forthcoming with usage, open access windows, costs—but the task of shrinking our journal offerings was one we shouldn't be engaged in!" The process overall helped to make the academic program aware of the difficult choices we must make in the face of a tight budget: "My colleagues now have a much better understanding of the resource challenges faced in the library than they did previously."

- Usage statistics are confusing to faculty. While nearly half (44%) found the online and print usage statistics for databases and journals helpful, over 63% reported that they were confusing: "I think many students simply look at journals then place them back on the shelf. Thus, I was not convinced of the accuracy of the usage statistics." Others remarked, "I'm not sure if the usage statistics incorporated use for class using [our course management software] *Moodle*," and "if I remember correctly, we didn't have [statistics] for online journal usage, or maybe that was for journals that were part of a publisher's package? Something was incomplete."

- Faculty want a holistic picture of the journals to which we have access in their areas of specialty, not merely a list of those journals to which we subscribe on a title-by-title basis. The most popular request for additional information was details on journal availability in aggregator databases (66%), followed by journal availability via interlibrary loan (56%). One respondent asked for a "personalized list of journals"—a list of all journals in the faculty member's area of specialty to which we have access, "including those that come as part of a publisher's package."

- Respondents expressed a preference for a paper review, in conjunction with either e-mail communication (37.5%) or an in-person meeting (also 37.5%) with the library liaison. One quarter of respondents preferred an online review. Their comments reflected a preference for an in-person meeting: "the in-person [meeting] is crucial," and a "regularly scheduled in-person meeting will keep us more organized and leads to better discussion and understanding."

Where Do We Go from Here?

Perhaps one of the best ways to support collection development in tight economic times is to take advantage of open source access. We plan to do so in a variety of ways. During fall 2009, the systems librarian will coordinate an all-staff investigation into new front end products, including open source programs such as Evergreen and Koha. Reliable collection reports will be high on the priorities list. The e-resources librarian and serials manager will work to provide increased access to open source e-journals, particularly in light of our recent paid journal subscription cancelations. We will also contribute to the open source movement: in May 2009, our library faculty adopted an open access pledge for our own scholarly work.

We will investigate not only open source resources but also open source tools for helping us to manage those resources. For instance, we are in the initial stages of implementing *ERMes*, an open source ERM developed by librarians at the University of Wisconsin-LaCrosse. During the first phase of implementation, we plan to use it for e-resources (database-level) subscriptions and

to manage administrative information for e-journals by publisher; we will investigate whether we can adapt it for journal management as well.

We will pursue opportunities we have identified for collaborating with other staff. We already see these new collaborative models moving us further from a print-centric and ILS-centric workflow. For instance, our acquisitions manager, who previously dealt with few electronic materials, will be helping to manage our e-resource usage statistics, thus adding a new system—the ERM—to her workflow. At the same time, our catalogers will integrate e-resources into their workflow by cataloging e-resource subscriptions in the ILS, and they may begin maintaining resource information in *LibData* as part of their regular workflow.

In addition to implementing the recommendations of our parallel workflow analyses, we plan to undertake a new project: an interlibrary loan (ILL) workflow analysis. This new project, built on the groundwork of our initial workflow analyses, will allow us to bring additional staff into our workflow analysis efforts. Discussions at our recent library resources review meetings reinforced the idea that ILL is intimately connected to our book, journal, and e-resource collection development efforts. In times of flat or shrinking acquisitions budgets, when we are decreasing book allocations and canceling journal subscriptions, the logical next step is to see how these shortages and cuts affect ILL requests and fulfillments, and how we can use ILL request information to inform collection development decisions.

Conclusion

Above all, our workflow analyses suggest three key concepts to meeting the challenges of collection development in tight economic times:

- Flexibility: Although we rely on our procedures for concrete guidance in performing our daily work, we must remain sufficiently detached from specific practices and procedures to step back, analyze them, and change them as needed. A variety of factors—from evolving formats to budget cuts to staffing changes—necessitate continuous evaluation of our practices.

- Collaboration: We found that we were energized by working in teams for our collection development workflow analysis projects. Working across traditional library boundaries on these projects led to new ideas for even more cross-boundary collaboration.

- Initiative: Our workflow analyses motivated us to look critically at what we do, ask why we do it, and revise our practices as necessary. Examining closely what we do helped us initiate new projects such as implementing an open source ERM and undertaking an interlibrary loan workflow analysis.

These key elements of flexibility, collaboration, and initiative are not limited in applicability to collection development, nor are they limited to libraries with a collegial management structure. They can be applied to analyze other library workflow issues, and can be used in any organizational structure that supports collaborative work and staff involvement.

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Creating Usability Tests that Work for
Your Web Site and Other Web Applications

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Abstract

Library websites are an extension of our physical presence. While librarians know how their patrons use the library based on everyday experiences, determining how patrons use the library online may be elusive. Usability testing provides a framework for investigating the interaction of your online constituency. This presentation will discuss how to create simple and effective usability tests for the library website and how to extend these techniques for testing of other applications such as Springshare *LibGuides* and tutorials created using Adobe *Captivate*. Usability testing web applications provides valuable insight when considering productivity and employee resources devoted to these tools. Discussion will include tips on generating good questions and tasks ultimately resulting in thoughtful responses, techniques to encourage participation, and the implications of this information for design.

Introduction

Since the introduction of the Internet in the 1990s and the expansion of online resources, libraries have become aware of how powerful their web presence is for their library users. These web sites have evolved from pages with simple links to other web resources and pages, to vast dynamic-driven sites that encompass pictures, audio, and widgets. However the need for these web sites to be organized and usable has been in the forefront of some librarians' minds since the beginning. In 2001, Nicole Campbell edited a LITA Guide on *Usability Assessment of Library-Related Web Sites: Methods and Case Studies* where she introduced the importance of conducting usability testing in order to evaluate "whether users can actually use [library] sites successfully, whether they can find what they are looking for, or whether they get frustrated and decide to look elsewhere for help" (1). Originally, usability testing focused on web design guidelines such as format, fonts, colors, loading time, and general appearance (Norlin and Winters 12-15). Today, usability tests have become increasingly sophisticated and have a greater focus on user interaction over visual appeal.

To effectively design a usability test, defining what usability means is important. In international product standards, usability is defined as the "extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (International Standards Organization 8). There are five main attributes by which

a product is measured: easy to learn, efficient to use, easy to remember, few errors, and pleasant to use (Reeb 9). So how does one create a usability test on a non-tangible product such as web site? A variety of methods have been designed that test the functionality of web sites, from simplistic card sorting to the more complex testing using task based activities. Usability testing has enabled librarians to view their web sites in a different way, from the perspective of the users and how they find information which may be vastly different than that of the creator. Testing has transformed the library web site user experience by extending the library's physical presence to the web becoming a one-stop destination for information.

Usability Testing Methods

There are three primary types of usability tests for web sites: card sorting, heuristic testing, and assessment testing. Each has its own advantages and disadvantages, and each is designed to yield a different type of information about the usability of a web site. It is recommended that a full testing regime use multiple approaches to get a broader understanding of the web site usability and address the concerns of a larger group of patrons.

Before commencing testing, determine whether your institution follows a code of conduct or code of ethics regarding test participants used for research. For instance, many colleges and universities submit their research proposals to an Institutional Review Board before any testing takes place if the results are going to be used for research. Many times with usability testing, the testing is exempt from review because it may not be declared as human or animal testing (Reeb 29-30). Regardless, it is a best practice to have participants sign a waiver of consent form outlining the purpose, scope and application of the testing. Included in this waiver should be information about confidentiality and the intended use of the results. Many institutions provide a waiver of consent form template that may be altered for use with a usability testing project.

One of the easiest methods of usability testing is card sorting, which is used to gauge the usage, demand, or perceptions of the library web site. To perform card sorting, the practitioner creates a deck of index cards that contain the headings of a small web site or a subsection of a larger web site. The practitioner then asks a participant to sort the cards into logical groupings and create headings or labels for each of the card groups. After this is completed, the practitioner briefly interviews the participant to better understand the motivation behind the card groupings and headings (Reeb 12). The goal of the testing is to reveal "the cognitive mental models that users have regarding the content planned for the site," and will provide insight about the expectations users bring to library web site content (Reeb 13). In many cases, card sorting approaches will lead to a redesign of web site navigation elements, using headings or categories developed by card sort participants (Lehman and Nikkel 41; Reeb 14). However, this approach does have its disadvantages. Even though card sorts are easy to create and test, analyzing the results can be time consuming. Card sorting can also cause challenges to validity arising from the process of administering the test, the scope of chosen terms, and the number of cards used (Reeb 14).

A more complex and intricate test for usability of a web site is heuristic testing, in which users who are familiar with the web site design and interface evaluate the site against best practice guidelines. The most common and widely used set of heuristics for user interface design are those created by Jakob Nielsen or OCLC. The result of a heuristic test is a listing of the major

usability problems in the overall web site interface design. Heuristic testing can help identify potential interface design problems in a current web site, or suggest if a web site should be redesigned entirely. The best test subjects for heuristic testing are library staff members or patrons who frequently use the library web site. However, this approach is also not without disadvantages, including finding experts to be test participants, and the learning curve of the tests technical terminology. The nature of the tests results can also pose a challenge, as they tend to be primarily negative comments for the designer, which can be frustrating (Reeb 15-20).

Another complex but valuable usability test is the assessment test, which consists of a series of tasks or scenarios to be completed by test participants using the library web site. These task-based assessments can focus on all or part of the overall web site, and they should be representative of normal tasks a user would perform. In *Usability Testing for Library Web Sites,* the authors recommend creating distinct goals and objectives for the testing, along with acceptable results (e.g. "80% of test participants should successfully find a listing of research databases"). After creating test objectives, the tasks should be reviewed to reducing duplication, then arranged in an appropriate order, preferably from easiest to hardest. If questions are hard at the beginning, test participants will get frustrated and give up easily, limiting potentially helpful feedback (Norlin and Winters 32-33). It is also recommended the practitioner consults the whole library staff to identify crucial tasks as a group, ultimately leading to higher quality tests, greater staff buy-in, and improved acceptance of the results (Lehman and Nikkel 54-55).

Assessment tests are the best method at providing useful feedback on the functionality of the web site and also feedback on how the participant used the web site navigation. To get to these results, there are two ways in which an assessment test can be conducted, formally or informally. When conducting the test, the participant may be at the testing site alone in an isolated area where the usability practitioner observes the participant's actions from a separate room with a one-way mirror or uses screen capturing software to record the participant's actions. The other more informal option is that of having the practitioner in the room next to the subject. In both instances, it is recommended that the practitioner refrain from talking to the participant in order to avoid asking leading questions that would skew the overall results. The problems associated with assessment tests primarily focus on the questions or tasks created. Some tasks may have been written too ambiguously, were hard to complete, or were unrelated to the goals of the site (Reeb 24). At the end of test, it is important to thank the participant and ask them some debriefing questions such as "What three things could we do to make this web site better?" or "What frustrated you the most about this site?" (Lehman and Nikkel 59).

Usability Testing for Web Sites

In addition to considering the various methods of usability testing, it is important to think about the individual user population and what method best fits the needs of that group and the institution. Card sorting and assessment tests are routinely chosen for usability testing because they do not require the identification or involvement of experts and better reflect user populations at most institutions. The results of usability testing on web sites are instructive in the creation of a new web site or the redesign of an existing site. Some possible outcomes include improved site navigation or the exchange of library jargon for user defined

vocabulary. Librarians have a predisposition to provide as much content as possible, but writing content for a web site is fundamentally different than writing for other purposes. Such an inclination may lead to confusion and information overload on the part of the user. Testing can help to identify areas in which content needs to be streamlined for easier viewing, access, and comprehension. Testing leads to "aha" moments, in which the practitioner gains a greater understanding of how the web site is utilized by the very people for which it is designed. For example, during assessment tests the practitioner has the opportunity to visually see how the users interact with the site and where they go to complete the assigned tasks. In card sorting, the practitioner is able to observe the thought process of the tester when they are systematically organizing the cards.

In the development stages of usability test creation, it is an important to design tests that pinpoint the areas of the site that need attention. Try not to overwhelm the participant by mixing and matching questions. If the focus of the testing is on site navigation, it is imperative to avoid including questions that pertain to site appearance or content.   These may create confusion with the participant and lead to inconsistent results. Another recommendation is to recruit testing participants from several different user groups in order to discover different perceptions and uses of the library web site. For instance, three different user groups that should be examined to test a college library web site may be students, faculty and library staff members. Each user group will have a unique web site experience which is important for the web site designer to consider for overall functionality. One simple example that may be overlooked in the design process is that of font readability, which will vary by age range.

How one recruits usability test participants varies by institution and need. It is popular to offer participants incentives such as gift certificates, coupons, free food, or extra credit. Some of the incentives do have potential budgetary implications, and others, like extra credit, require outreach and communication on the part of the practitioner to garner and verify participation. One of the best methods to recruit for card sorting is to set up a testing location by the reference desk and ask random users to participate in the brief test with a small reward such as a candy bar. This technique allows for a diverse population of users and results. For assessment tests, participants need to be recruited for a specific appointment and it is best to ask for library staff and faculty suggestions on potential participants. In the college setting when looking for students to test the web site, also consider library student workers as student recruiters. Heuristic testing participants must be carefully vetted to ensure that they meet preset parameters of experienced web site users. Once recruitment is complete, practitioners must ensure testing times and locations are convenient for the user. For example, if testing a student group, choose a time that does not conflict with classes or extra-curricular activities. A possibility may be during a meal break, especially if free food is available.

Usability Testing for Web 2.0 Applications

While usability testing has a long history for web pages and web site design, it has infrequently been applied to other library web applications – in particular, electronic user guides and web-mounted tutorials used for asynchronous library instruction. While it is common to include testing of these individual components during a web site usability test, they generally constitute only a small portion of the overall test. Due to the increasing importance of online instruction

and its related tools, including electronic user guides and web-mounted tutorials, and their potential to introduce and encourage use of library resources, more in-depth usability tests of these components can lead to improved planning and design of online instructional materials.

Although the traditional theory behind usability testing still applies to electronic user guides and web tutorials, some adjustments must be made to the testing approach for these sorts of applications. First, since these applications are aimed at a specific target audience, assessment tests are the best approach to usability tests for either application. Next, while web site usability testing asks the user to explore multiple aspects of a single site, usability testing for electronic user guides and web tutorials asks users to consider a more focused object in greater depth. These variances require the development of task questions in a more deliberate manner, creating a cross between focus group questions and those of traditional usability tests. Additionally, though subjects are expected to have prior knowledge of the general use of web sites, a designer must consider a user who may not have previous experience with electronic user guides or web tutorials. Even if a user does have a background with these applications, a brief demonstration or explanation may be necessary for a particular format. Aside from these points, most other determinations regarding the type of test subjects and focus of testing should occur during a traditional planning phase, as it would in usability testing of library web sites.

When considering the design of usability tests for web-mounted materials, it is important to make a distinction between usability of the content and usability of the software. The former focuses on the actual information content of the tutorials or user guides, with tasks based upon interaction with the librarian-generated content. The results of this testing may lead to improvements such as recommended limits to number of tabs, time limits, and standardizations. The usability of software focuses on the ease with which the user is able to navigate the user guide or tutorial, independent of the content. Tasks in these sorts of tests emphasize site navigation, along with understanding the impact of out-of-the-box proprietary interfaces, which may not be easily altered to remedy functionality.

After an initial design for the test has been established, it is important to then perform a pre-test, where the testing is carried out with a small number of test participants. This phase is especially important when testing electronic user guides, as users may easily misinterpret a task when faced with multiple guides on a variety of subjects. Although use of screen capture during testing is standard practice, during usability testing of web-mounted tutorials; it is also important to video record the user's activities during the test to determine his or her engagement level while working on the tasks. However, this also requires a higher level of user permission.

After adjustments are made based upon the pre-test results, further cycles of refinement and pre-testing should take place until the experiment naturally progresses from one step to the next. Testing execution should then be straightforward according to the usual usability testing approaches.

When usability testing focuses on the functionality of web-mounted materials, the debriefing with participants will be similar to that of typical usability tests. However, if the focus of the test is on the content of the materials, the debriefing will solicit greater participant opinion. When

designing tests focused on content, it is recommended to review literature on focus group testing as well as usability testing.

How to Design Test Tasks and Questions

Designing test questions and tasks are the most important parts of test preparation. However, the process can be frustrating and time consuming to the practitioner. It begins first by identifying tasks to be completed on the site or with the web-mounted application. Carefully scripted questions are then developed which, when answered, result in completion of a linked task. Once tasks and questions are identified, they must be vetted in a pre-test to determine their validity and clarity. Pre-testing also serves to alert the practitioner to possible technology complications and allows time to rectify problems, such as a loss of Internet connectivity, prior to wider testing. The tests must be structured to begin with basic tasks and build to the more complex. During pre-testing, the most common problem with questions is a scope that is too broad or narrow. Such issues will result in difficulty with task completion and inaccurate results during final testing (Reeb 23). For all usability testing, regardless of application, a longer test does not guarantee better results. Usability tests of entire web sites will generally be five to ten questions longer than those for other web applications and should be designed accordingly. Examples of linked tasks and questions for web sites can be found in Table 1, web mounted applications in Table 2.

Table 1
Tasks and Questions for Web Site Usability Tests

Typical Tasks	*Example Questions*
Find a book in the library collection	Does the library own a copy of *Gone With the Wind* by Margaret Mitchell?
Find if the library has access to a database	Does the library have access to EBSCOhost *Academic Search Complete*?
Find library hours	What time does the library close on Fridays during summer break?

Table 2
Tasks and Questions for Web Mounted Applications

Typical Tasks	*Example Questions*
Find a database with business information	Does the library have access to EBSCOhost *Business Search Complete*?
Find the contact information for the science librarian	A librarian gave a presentation for your biology class last week. Where is her office located?
Use the back button during a tutorial	You are viewing a tutorial and would like to review the previous material. How do you proceed?

Implications of Testing

Usability testing may lead to a number of unanticipated results. In many instances, testing reveals participants will use parts of the site or application in ways that were unexpected or unintended during the design phase. It can inform the designer about the content they actually use and pinpoint what needs regular updating or maintenance. Information on content updates is especially useful for the discussed web applications as it can help provide management with data to allocate time to the upkeep of these materials. Even with pre-testing, it is possible a seemingly simple task is actually complex to the participants. An example of such a problem is the task of finding a specific journal publication from the library web site. Usability testing may create a situation where the designer needs to reconsider numerous aspects of the web site or application and will be forced to undertake a whole or partial redesign.

Despite the potential issues usability testing may unveil, it is still a fundamental part of evaluating both web sites and other library web applications. It provides a deep insight into a variety of user experiences and allows libraries to more efficiently provide information and access. In times where budgetary and personnel constraints abound, and assessment has increasing importance, usability testing helps determine how your web presence is used and the impact it has for the user. Unlike transaction logs, usability testing provides a greater depth of information, including anecdotal evaluations and task success rates. As library web applications continue to compete with large search engines, usability testing can highlight areas of strength and weakness in order to improve the user experience and encourage use of these tools. Ultimately, usability testing will take time, energy and perseverance, but the information gleaned from the process is essential to understanding and designing a library's web presence.

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11,000,000 Words:
An Avalanche of Academic Archive Photos at K-State at Salina

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Abstract

Institutional archives have always provided a sense of history and unity for most universities. This is especially emphasized for the K-State at Salina photographic collection. The school has gone through four different name changes in the last fifty years and the library has amassed an overwhelming assortment of photographs documenting various events on campus, from groundbreaking ceremonies to student social occasions. With an estimated total of over 11,000 unlabeled photographs, the K-State at Salina librarians have worked hard to begin the process of providing the university community with a useful resource for historical research in the future. Using a variety of methods, both digital and face-to-face, to identify the photos' events and participants, the librarians have sorted a small portion of the photographs thus far and plan to create a finding aid in the future. Come learn about this unique project if your own archives project has been on the back burner and you're looking for some tips on how (and how not!) to get started.

Introduction

An old Chinese proverb states "a picture is worth 1,000 words". If that is true, then the pictorial collection in the K-State at Salina archives touts approximately 11,000,000 words. The photographic collection of nearly 11,000 items documents the rich history of the institution. However, most of the photographs are not labeled with names, dates, or locations; rendering the collection impossible to catalog or use. This paper details the processes and procedures developed in order to organize and classify the photographs for patron use.

Literature Review

Pictorial archive collections in libraries and museums exist to fill a need in the society for which they serve. Mildred Simpson of the Los Angeles Times Editorial Library suggests libraries faced with organizing a photograph collection must start by first considering "the use to which your

collection will be put" (Berinstein). "Intelligent analysis" should be employed to ensure items are not incorporated into the collection simply because they exist, but rather because they add value to the collection (Baxter). Schmidle acknowledges limited resources coupled with competing interests often create difficulty with value assessments. He states, "Librarians, archivists, and conservators must weigh economic, societal, cultural, and technological values to determine what is to be preserved, displayed or consigned to the depths of the vault" (15).

There are four basic components in the collection management of archive collections: inventory, appraisal, cataloging, and proper housing and storage ("Care, Handling, and Storage of Photographs"). Inventory and appraisal have been defined above as the determination of which objects are retained in the collection as evidenced by the institution's mission. While no standardized approach to cataloging photographs exists, experts recommend providing the acquisition source, date (of acquisition and event depicted), subject and an accession number (Berinstein; "Care, Handling, and Storage of Photographs"). Baggett suggests the proper housing and storage of photographs involves storing "the files or envelopes vertically in an archival box or metal filing cabinet" as well as packing "the files or envelopes tightly so they are supported and stand upright" (5). Significant damage can be caused to photographs from improper handling. The Library of Congress states, "When handling photographs and negatives, be sure that hands are freshly washed, wear clean lint-free cotton gloves…and avoid touching the photograph surface" ("Care, Handling, and Storage of Photographs").

The technological revolution has many libraries scrambling to digitize their photographic collections. Schmidle recommends libraries adequately reflect on their motives for digitization. Digitizing photographs is beneficial in capturing an image before deterioration occurs. It also increases access to resources. However, "digitizing for preservation does not result automatically in increased access" (Schmidle 16). Digitization should only be considered when an institution is firmly committed to providing the resources (time, equipment and funding) required to maintain a digital collection.

The Collection

K-State at Salina has a rich and varied history. Over the past 40 years, the college has transformed from the Schilling Air Force Base (1957), Schilling Institute (1965), Kansas Technical Institute (1969), Kansas College of Technology (1988), to its current orientation as Kansas State University's College of Technology and Aviation (1991). Items in the collection are the product of various student organizations and retiring faculty's donations over the years. The photographers for both the Kansas College of Technology and Shilling Institute yearbooks also donated a sizeable amount of the proofs previously used in yearbook layouts. The collection currently consists of nine green photo boxes containing about 11,000 photos and forty-one photocopy boxes full of various scrapbooks and college memorabilia.

Getting Started

K-State at Salina librarians conducted research on possible options for preserving the photos, with a specific emphasis on best-practice methods regarding the handling and displaying of the artifacts. Information was gathered via the use of books, the Internet, attendance at the 2008

Kansas Library Conference, personal interviews with local archivists, and a Preservation Workshop at the Dwight D. Eisenhower Library that focused specifically on photo preservation.

Fireproof file cabinets were purchased as a way to save and store the collection. Additional cabinets will be ordered over the next several years until storage is adequate for the collection. Filing cabinets will also store university paperwork, course descriptions, faculty files, information about college mergers and name changes, college handbooks, flight records, and other miscellaneous papers. A collection of yearbooks was discovered in the archives and excess copies sent to the local public library and the Smoky Hills Genealogical Museum to fill holes in each collection. Should a natural disaster or fire occur on campus, there will be copies located in different facilities around the county so the history of the college would not be completely lost.

Gathering Supplies

The library first purchased print sleeves in two different sizes, 3x5 inches (100) and 8x10 inches (25), to keep fingerprints off the photographs. Next, acid-free marking pens were ordered so names, dates, places, and topics can be written on the back of the photo as the photo's subjects are identified. For example, if the picture contained a lecturer and an audience, the speaker's name, the occasion he/she was speaking at, the place and the date would be recorded. Twelve pairs of white cotton gloves were ordered as well to protect the integrity of the materials during the sorting until they found a permanent home in the cabinets, as well as for handling the materials while displays are being created. Finally, a flash drive was purchased so photos could be digitized as they are scanned.

In addition to supplies for handling the artifacts, reading materials were sought to learn about specific preservation techniques for photographs. The library applied for and was awarded a book grant, *Connecting to Collections Bookshelf,* by the Institute of Museum and Library Services. Twenty-three books, which cover a range of preservation topics, will serve as reference tools and manuals on how to build and preserve the collection. The archival budget has also become a permanent subdivision of the library's general budget because the library hopes to maintain the organization of this collection in the coming years. The K-State at Salina Library feels the archival budget is an expense that must be preserved to provide this service to alumni, students, and staff.

Off and Running

Although several boxes were opened to determine the supplies that might be required, the first box of photos was not "officially" opened until late June 2008. Sorting through the photos and finding identifying marks was the first step taken in organizing the collection. These identifiers turned up in various forms, such as hand-written names, dates and/or locations, typed labels adhered to the back and sometimes, through a stroke of luck, even the film development date stamped across the Kodak paper. Eras and locations were also estimated by studying the subjects of the photos and focusing on hairstyles, cars and clothing worn in the picture. Now and then even the background was recognized as "before the renovations" to a certain building so a year could be estimated as well. Bundles of photographs of the same event were tied and placed back into photo boxes.

The second step in the process was to have student employees compare photos in the boxes to photos in the yearbook collection. Because of storage space restrictions, the librarians decided if a photo could be matched to photos printed in the yearbook, it would not be kept. Multiple copies of photos that do *not* appear in the yearbooks were also discarded, and the best copy kept on file. By June 2009, nearly 400 photos had been matched to photos in the yearbooks and the duplicate photos discarded. One unpredicted outcome of having student workers sift through photos is that faculty interest in the project has increased. As student employees work on this task at the circulation desk, faculty members walking by have stopped to help identify photos. In addition to using yearbooks, student newspaper publications from the 1970s have also been used to identify some events taking place in the photos.

As a result of this tedious work, the K-State at Salina Library wrote a new policy to avoid these dilemmas with future incoming donations. All new items donated to the archives by outside contributors must include names for the subjects in the photo, as well as the date, location, and event type documented. The accepted materials must be associated with K-State at Salina campus activities and/or previous activities occurring on the campus under the aforementioned K-State identities. To date, approximately one hundred new hardcopy photos have been added to the archives documenting commencement ceremonies from the last three years. Sixty photos in electronic format have been added from various activities on campus from the previous school year, including Casino Night, softball tournaments, the Awards Banquet, and Campus Open House.

Trying Something New

Following the task of sorting photos by era and activity, the librarians decided to seek outside help for this endeavor. Utilizing 21st century technology to reach back to earlier times, staff selected and scanned five to ten pictures, and posted them onto the library's blog, with the hopes that faculty, staff, or students would recognize some*one* or some*thing* in the photos and could give the library information for the photo. These pictures were posted every month beginning in November 2008 to garner new interest and to keep expanding the online collection. The photos were to stay up for a twelve-month period before being taken down to allow room for new photos. The physical copies of photos posted on the blog were put in a separate filing system so when a person came forward to identify a photo, it could easily be pulled out and labeled with the new information. The photos selected for this process were predominantly "solo" photos that did not belong to a larger group of photos documenting a certain occasion, making them harder to identify. As of July 2009, using this method, the campus community has identified thirty of the photos that were posted online.

The online posting of photographs has proven to be successful means for identification. To increase the visibility of items, the K-State at Salina Library has partnered with the Public Relations and Alumni Coordinator as means to expand the web audience. In July 2009, one of the librarians received a mailing from her alma mater with a similar project asking alumni to identify people in a single photograph published in the newsletter. Following this example, the K-State at Salina Alumni Coordinator agreed to put one photo to be identified in the annual

newsletter followed by a link to twenty more photos on the Alumni web page, asking all alumni to contact the university if they had information on any of the photos.

Looking Beyond

By scanning in the photos, the library has attacked three projects at once; labeling, digitizing, and generating publicity. First, with countless past and present university faculty receiving the online alumni newsletter, the odds increase that someone can provide the library with valuable information on the subjects in the pictures. Displaying the photos on the alumni website helps the college body recognize these resources are available for their use. Presently, hardly any people on campus are even aware the library possesses this superb collection, and it could prove to be extremely helpful for historians doing research about Kansas State University at Salina, the surrounding community, or the state of Kansas. Next, digitizing a few photos at a time for the newsletter has paved the way to someday digitizing every photo in the collection to create an online searchable database for patron use. This digital collection would be useful to the alumni and students who live across the country and would not have easy access to the physical copies stored in the archives room. However, the library does not want to focus too heavily on digitizing the collection until the photos have been labeled as there would be no way to identify the electronic files. Finally, the library will work with the Alumni Relations Office in an attempt to find former students willing to donate some time to look through old photos, as well as retired faculty living in the area who could also help to identify certain events.

As the library plans for the future, it must also focus on the smaller projects it can complete in the next three to five years. The prevalent goal for the library is to have the photos sorted and labeled as soon as possible, with a timeline of four boxes a year in order to complete the project in less than ten years. Single pictures will go into smaller photograph boxes and larger topic boxes will contain photos as well as souvenirs that have been collected from the occasion, such as posters, invitations, and schedules. A finding aid will be created using Microsoft Excel software which includes the person's name and will cross-reference with the year and topic. This finding aid will be available in hardcopy form in a binder so patrons working in the archives can easily use it.

Although the collection may never be fully cataloged and labeled, the library feels it has a duty to share these artifacts with the community. The first public display was in December of 2008 during the library's Open House, where photos were displayed in hopes that visitors would recognize the people and event in the photos. With the eager help of long-time faculty and staff members, roughly eighty photos were identified in three hours. Two retired staff members who attended the Library's Open House even volunteered to work on identifying the photos the next day. They spent three hours in the library sifting through boxes of photos and identified almost one hundred photos while the archive staff member labeled each photo as quickly as it was identified. The next public display will be in the new Student Life Center, which houses the campus recreation complex. At the Student Life Center dedication in the fall of 2009, the library will display sporting event photos for people to identify, such as intramural basketball games, ping pong tournaments and previous University Olympic Games. It is the library's hope that once the photos are identified, copies of the photos will be made and enlarged for visitors to enjoy through the recreation center. Third, photos will be placed in the library's large display

case near the entryway so that during the spring campus-wide Open House visitors can view a sampling of the collection as they walk through the doors.

Conclusion

Kansas State University at Salina has made a commendable attempt to start their archives project, despite budget and storage restraints. Starting from scratch, they have jumped in with both feet to protect these important historical campus documents and to provide a significant service to prospective historians and university community members. In a time when budgets are tightening and the latest online resources are touted at conferences across the country, it is heartening to see librarians sacrificing time and money to meet the archival needs of their library and its patrons in a truly selfless fashion.

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Are You Ready for "The Cloud"? Implications and Uses of Cloud Computing for Libraries

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Abstract

Are you, and your library, ready for "the cloud"? Cloud computing is the new buzzword in education. Many people are moving from office applications on their own computers, to free or low-cost collaborative applications on the Internet "cloud." Librarians will discuss implications and uses of cloud computing for libraries. This presentation will be beneficial to anyone who is interested in exploring ways new technology such as cloud computing can be used to collaborate with other librarians, faculty and staff and enhance library users' information seeking experiences.

During this presentation, librarians will give a brief demonstration of some web-based cloud computing applications (i.e., *Google Apps*) and share their experiences using these applications. They will discuss the pros and cons of cloud computing, along with implications and uses for libraries. Librarians will talk about the benefits of cloud computing including mobility, flexibility, universal access and the fact that it can save time, money and resources. The cons of cloud computing will also be examined, including privacy and security issues. Attendees will be encouraged to brainstorm ways that cloud computing can be used in their libraries to collaborate with students, faculty and staff for a variety of purposes such as instruction, research, reference, etc.

Cloud Computing

The 2009 Horizon Report mentions "cloud computing" as one of several emerging trends in higher education likely to have a large impact on teaching, learning and research (with the time adoption being one year or less). The term "cloud computing" describes how people access and manage digital information. The report describes the "cloud" as "networked computers that distribute processing power, applications, and large systems among many machines" (Johnson, Levine, and Smith 11). Instead of information being tied to one computer, the information is stored "in the cloud" with the "cloud" meaning the internet. "The emergence of cloud-based applications is causing a shift in the way we think about how we use software and store our files…. Instead of locking files and software inside a single computer, we are gradually moving

both the products of our work and the tools we use to accomplish it into the cloud." (Johnson, Levine, and Smith 12). According to *The 2009 Horizon Report*, "Applications like Flickr, Google, YouTube, and many others use the cloud as their platform, in the way that programs on a desktop computer use that single computer as a platform. Internet "cloud" applications do not run on a single computer; instead they are spread over a distributed cluster, using storage space and computing resources from as many available machines as needed" (Johnson, Levine, and Smith 11).

Horrigan describes cloud computing [for everyday users of the internet and computers], as "any online activity, such as accessing data or using a software program, which can be done from different devices regardless of the on-ramp to the internet" (3). He also states, "data or software applications are not stored on the user's computer, but rather are accessed through the web from any device at any location a person can get web access" (4).

Use of Cloud Computing Services: The Pew Internet & American Life Project

Although most internet users are unlikely to be aware of the term "cloud computing," many people are already using cloud computing web-based services without realizing it - whether it be for email (i.e., *Gmail*), video (i.e., YouTube), managing bibliographic citations (i.e., *RefWorks*) or word processing (i.e., *Google Docs* or *Zoho*). In fact, according to the *Pew Internet & American Life Project*, 29% of all internet users use online applications such as *Google Documents* (Horrigan 4). The survey found younger internet users more inclined than older ones to use services or applications that require personal data to be stored online. For example, 39% of 18 to 29 year olds use online applications such as *Google Docs* while only 19% of persons over 65 use the application (Horrigan 5).

In spring 2008, a *Pew Internet and American Life Project* surveyed over 2,000 adults and found "69% of all internet users have either stored data online or use a web-based software application" (Horrigan 1). The survey reported on the number of internet users who are engaging in cloud computing activities, their usage of cloud computing applications and their reasons for, and concerns about cloud computing. Grouped into six categories, cloud computing activities used included: webmail services; online personal photo storage; online applications such as *Google Documents* or *Adobe Photoshop Express*; online personal videos storage; online computer file storage; and using an online site to backup a hard drive (Horrigan 1).

The Pew Survey found convenience and flexibility were two of the main reasons people engage in cloud computing. Since a person's information is not tied to one computer, it allows for mobility and universal access to the information anytime, anywhere with internet access. Web applications make content accessible from any device capable of accessing the internet. The fact that the applications are always available online is important. In this survey:

- Fifty-one percent of internet users who have done a cloud computing activity say a major reason they do this is that it is easy and convenient.
- Forty-one percent of cloud users say a major reason they use these applications is that they like being able to access their data from whatever computer they are using.
- Thirty-nine percent cite the ease of sharing information as a major reason they use applications in cyberspace or store data there (Horrigan 2).

At the same time, users are very concerned with the safety of their data:

- Ninety percent of cloud application users say they would be very concerned if the company at which their data were stored sold it to another party.
- Eighty percent say they would be very concerned if companies used their photos or other data in marketing campaigns.
- Sixty-eight percent of users of at least one of the six cloud applications say they would be very concerned if companies who provided these services analyzed their information and then displayed ads (Horrigan 2).

Other Pros and Cons of Using Cloud Computing Services

As librarians, it is important to understand both the pros and cons of using cloud computing services, whether we are using them ourselves or teaching our patrons/students how to do their own research. Advantages of using cloud computing service applications, both to IT departments and to end users, include: lower-cost computers for users; improved performance; lower IT infrastructure costs; fewer maintenance issues; lower software costs; instant software updates; increased computing power; unlimited storage capacity; improved compatibility between operating systems; improved document format compatibility; easier group collaboration; universal access to documents and latest version availability. Also, by using these applications the user is not tied to one specific device (Miller 24-8; Cunningham 23).

Some disadvantages of using cloud computing service applications include the fact that the tools: require a constant internet connection; do not work well with low-speed connections; can be slow; may have limited features; may not secure data; and may lose data (Miller 28-30). Barriers to using web-based applications include technical issues; internet issues; security issues and compatibility issues (Miller 35).

Privacy and security issues are especially important for private records or sensitive data. If the cloud computing service ceases to exist, what happens to your data? How long will the "third party" outside of the organization keep it? Will they share it with anyone? Will they charge for their services later? In the end, the user needs to judge cloud-based services by the same criteria they would evaluate any other information technology: reliability, availability, restorability, customizability, and security, and then choose the tool that is best for their purposes.

The user needs to evaluate his or her situation. He or she may, or may not, benefit from using cloud computing applications. Persons who benefit from using cloud computing services include people who have a need to collaborate, who are "road warriors", or who are cost-conscious. Organizations/IT departments that may benefit from cloud computing include those that want to save time, money and resources. Due the no/low cost and low maintenance cloud computing applications, for example, organizations no longer need to invest in a server or new software. However, other persons may not want to use some cloud computing applications (i.e., the internet-impaired; offline workers; the security conscious; and anyone "married" to existing applications) (Miller 33-4).

Earlier this year, a document called the *Open Cloud Manifesto* was released in an attempt to explain the significance of cloud computing technology, bringing together both cloud users and

providers. The manifesto outlines the challenges facing organizations that want to use the "cloud" and calls for action from the IT industry to ensure that the cloud remains as open as all other IT technologies. According to the document, cloud computing should be user centric, philanthropic, open, transparent, interoperable, representative of all stakeholders, not discriminatory, evolving, have a balance of interests, and secure (Cloud Computing Manifesto).

Web-based Cloud Computing Applications

Librarians need to become familiar with both the concept of cloud computing and the tools since cloud computing will have a significant impact on the teaching and learning environment in the near future. There are many free/inexpensive cloud computing applications available for people interested in using online office tools, presentation software, screen capture, file storage, reference transactions, videos, educational materials and online polling. *Google Docs* is one example of a web-based office application that includes word-processing, spreadsheets and presentation functions. Other examples of online office applications include *Open Office*, *Microsoft Office Live* and *Zoho*. Presentation software tools include *SlideShare*, *SlideRocket*, and *280Slides*. *Dropbox* is used for file storage; *Jing* for reference transactions (i.e., snap a picture of the computer screen and share instantly over the web) and *aniMOTO* to produce library videos. *Curriki* supports the development and free distribution of educational materials and *Poll Everywhere* uses text messages for polls that can be embedded in a presentation or web page and updated in real time (Peterson).

Importance of Cloud Computing Services for Libraries

The *ACRL 2009 Strategic Thinking Guide for Academic Librarians in the New Economy* mentions that cloud computing as one of the technology developments that has strategic importance for libraries. According to this guide, since cloud computing allows users to access data and applications through any web-connected device this "signals a move away from locally supported services. Library use of computing resources will also tend to move away from physically stored on-site capacities to the networked "cloud"." The guide goes on to say that by moving programs to the cloud, cost reductions may be realized, but there are also "risks related to the stability of the cloud or the industries hosting it, including security of information and privacy" (Deiss 7).

Cloud Computing and Mobility

According Lowry et al., libraries need to deliver services and resources to the virtual environments used by students, faculty and researchers or they risk alienating users. Libraries will need to supply content, tools and services to mobile users and mobile devices.

Mobile devices are everywhere now. Brown studied college undergraduates and discovered several trends in what kinds of IT gear they own: "Laptop ownership during the period of 2005-8 increased at a rate of 55 percent (from 53% of students in 2005 to 82 % in 2008). Smartphone ownership also increased dramatically "from 1.2 percent in 2005 to 66 percent in 2008" (Brown). These trends support several conclusions. First, mobility is important and second, web access is what is valued in a mobile device and mobile devices encourage cloud computing (Brown).

Are we as librarians, ready to deliver library content to mobile devices? Hopefully, the answer is yes, since "as we move into a world that is increasingly mobile, where users often work across several different devices in the course of their day, we need unified access to our applications and data. This requires that our applications and data do not reside on local devices anymore, but rather that they will live in the cloud and be accessible via Web services" (Spivack). For example, cloud computing tools can be "synced" with mobile devices like cell phones, and Smartphones can use the cloud for extended storage as well as applications (Griffey).

Cloud Computing and Library Instruction

"Teaching critical thinking skills about the cloud will become just as essential as teaching how to evaluate a website…" (Levine)

Cloud computing applications can be used in libraries for many purposes, one of which is library instruction. Cloud computing "is becoming an increasingly important phenomenon that should allow many libraries to extend their reach online and enable collaborative work in ways not thought possible just a few years ago" (Farkas 27). Stephens, in his *Ten Trends & Technologies for 2009,* predicts librarians, information professionals and libraries will be "touched by the ubiquity of the cloud" and so "educators should incorporate information and use of the cloud into coursework." They must have "coursework on navigating and managing leased or purchased content stored in other places as well as a focus on reaching users wherever they happen to be" (Stephens).

Levine believes it is important to teach students critical thinking skills about the cloud and about multiple cloud computing service applications so students can evaluate their options and understand the pros and cons including potential consequences of using the cloud (i.e., data loss for an online document). Besides how to use these tools, Levine stresses the importance of teaching students how to synchronize or backup files across multiple devices so if one service fails, they have not lost everything. Levine also believes librarians need to think about privacy in the context of web-based cloud computing.

Teaching Cloud Computing to College Freshmen at Troy University Montgomery Campus

The Course

All Troy University students are required to take a one-credit hour university orientation course, TROY 1101. Several Troy University Montgomery Campus librarians teach this freshman course which is designed to help students adjust to campus life and covers information such as studying, note-taking, effective time management, financial management, choosing a major, career planning and library services.

Choosing Google Apps for Education

In the Fall of 2008, librarians at Troy University Montgomery Campus decided to introduce students to the concept of cloud computing and applications such as *Google Apps* in the TROY 1101 freshman orientation classes. In so doing, students would have the knowledge and ability to communicate and collaborate using these tools with other students and instructors on papers,

presentations and other assignments throughout their college career. The librarians chose *Google Apps* in particular, because it is one of the most popular of the emerging Web 2.0 tools for communication and collaboration. For example, the Centre for Learning & Performance Technologies compiled a list of the *Top Tools for Learning 2009* from the contributions of over 200 learning professionals who shared their Top 10 Tools for Learning, both for their own personal learning/productivity and for creating learning solutions for others. They ranked *Google Docs* fifth on the list of *Top 100 Tools for Learning 2009*; *Google Apps* number 38; and *Google Calendar* came in at number 56.

Google Apps for Education Team Edition

What is It?

Google Apps is a web-based suite of office applications including *Gmail*, *Google Calendar*, Google Talk, *Google Docs*, *Google Video*, *Google Sites*, etc. *Google Apps for Education* Team Edition is free (for anyone with a university email address) and is web-based so there is no hardware or software to install. Google encourages educational organizations to use *Google Apps* as an outside provider of services to save time and money for both users and IT departments. They call it the Google "cloud computing" model – or Google as a services platform and as such, it has the general advantages and disadvantages of cloud computing.

Advantages and Disadvantages of Using Google Apps

The two most common concerns about using *Google Apps* (and any other cloud computing services) include privacy and security. Privacy and security may be a concern, especially for private records or sensitive data. Google claims data will not be shared and that the user can keep their data as long as they like. When asked, Google says it will let users remove their data and will let them take their data with them elsewhere.

Other disadvantages to using *Google Apps* include size limits, few "bells and whistles" and technical glitches. There are size limits on how much a user can store on his/her account. For example, a presentation with many photos/graphics may have to be shortened when uploading it into *Google Apps*. In addition, *Google Apps* also has relatively few "bells and whistles" (i.e., fancy graphics, etc.) in comparison to some other web services and software available; however, Google is constantly adding new features. There have also been some technical glitches with certain types of files (i.e., docx files) but Google Help is available if needed.

What Does All of This Mean for Students?

Google Apps encourages online collaboration among students. Students can brainstorm topics, share information and work collaboratively on the same document, presentation or spreadsheet at any time from anywhere with internet connectivity. Presentations can be created, shared, and edited by groups of people in various places simultaneously or separately. Students can compare revisions, view the history of a document, read and react to inserted comments, and publish the final document, presentation or spreadsheet directly to the web. They can work on their research assignments collaboratively and all of their library research will automatically be saved in their own accounts and accessible via any computer. Students can use *Google Docs* to take notes,

upload them, and then write and edit research essays and presentations, inviting their instructors and other students to view and comment on various drafts. *Google Apps* has real-time editing and chat features. Students can collaborate online in real-time with other users to see results/edits of their document, presentation or spreadsheet almost instantaneously. *Google Apps* has a chat feature where multiple people can view and make changes at the same time using an onscreen chat window.

Google Apps and TROY 1101: Designing, teaching and evaluating instruction

Designing Library Instruction for TROY 1101

Librarians at Troy University Montgomery Campus learned how to use *Google Apps* to design library instruction sessions, collaborating on library orientation presentations; design library assignments/quizzes; create web forms (i.e., student surveys & library instruction schedules); and email instructors library instruction schedules and library orientation presentations and assignments. Librarians used *Google Calendar* to create/sync library orientation schedules. Using *Google Docs*, librarians published the library instruction schedule and the library presentation to the web for viewing by students and instructors. Using Google web forms, librarians also created an online TROY 1101 Library Orientation Survey and an online library quiz/assignment.

Teaching Library Instruction for TROY 1101

Librarians incorporated *Google Apps* into class activities. Students watched YouTube videos explaining *Google Apps* – "Why *Google Apps for Education*" and "*Google Apps* Team Edition Overview". Students also watched "*Google Docs* in Plain English" to learn about using *Google Docs* for documents, presentations and spreadsheets.

After watching the videos, librarians showed students how to access *Google Apps* via their university email accounts. They also demonstrated how to use *Google Apps* (i.e., *Gmail*, *Google Calendar*, and *Google Docs*) to collaborate on projects.

Librarians gave assignments that required the students to use features of *Google Apps*. For example, students had to login to *Google Apps*, view the library presentation created in *Google Docs* and experiment with various features of *Google Apps*. Becoming familiar with *Google Apps* also helped them complete an online library orientation assignment in class.

Evaluating Library Instruction for TROY 1101

Librarians used library orientation schedules created in *Google Docs* to track instruction sessions and gather information for later evaluation. The web forms that the librarians created in *Google Docs* are used to keep track of orientation statistics such as which librarians taught what classes, number of students attending, subject matter of session, etc.

After the library orientation, students received an email requesting that they complete an online library survey. The survey asked students for their opinions of the library presentation and library activity. Librarians received immediate feedback from the library survey and the

quiz/assignment since results from the survey were automatically sent to a *Google Docs* spreadsheet.

Results of the library survey showed that students liked having the library orientation presentation published to the web so they could view it anytime, from anywhere. Some students preferred viewing the presentation before the library orientation, while others said they liked having it for future reference. Both students and instructors enjoyed the convenience of having the presentation online so students who missed the class could view it later. Students either "agreed" or "strongly agreed" that the library exercise helped improve their ability to use the library and its resources and that overall, the library orientation helped familiarize them with library resources.

Conclusion

Teaching *Google Apps for Education* to students has been a valuable learning experience for librarians at Troy University Montgomery Campus. Librarians feel they have been successful in teaching the students to become more knowledgeable about cloud computing. They taught themselves how to use *Google Apps* and then demonstrated it to the students. As a result of the instruction, students now know what cloud computing applications are available and how to assess those tools to decide which one is best for them. Because of the positive response in introducing cloud computing to the students, librarians at Troy University Montgomery Campus plan to continue to incorporate *Google Apps for Education* in library instruction classes.

However, library instruction is just one area that can benefit from the use of cloud computing tools such as *Google Apps*. Librarians need to brainstorm ways that *Google Apps* and other cloud computing tools can be beneficial to all areas of the library and how they can be used in other library functions (i.e., reference, library administrative tasks and meetings, collaborating on reports, keeping track of statistics, etc.). Cloud computing is an emerging technology that is here to stay and can provide enormous opportunities to better serve our patrons.

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Using *Jing* to Turn Your IM or Chat Reference into a Multimedia Educational Experience

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Abstract

Many librarians have expressed concern about the one-dimensional aspect of instant messenger (IM) and chat services. Virtual reference services no longer need to be solely text-based. Instead, they can be turned into multimedia educational experiences using customized videos made on-the-fly. These videos can replicate what we show patrons in-person at the reference desk and include both visual and audio instructions. The videos can be created quicker than typing instructions into a chat box - saving the librarian from excessive typing and showing the patron exactly what you want them to see. The great potential for this kind of service is its customization and personalization - the two factors that have made in-person reference so successful. Perhaps most importantly, these custom-made videos provide librarians the opportunity to employ instruction strategies such as meta-cognitive modeling and other teaching methods that are difficult to employ using text communication alone.

Introduction

Many librarians have expressed concern about the one-dimensional aspect, lack of face to face interaction, difficulty of instruction using text, and other problems of virtual reference services (Gorman 170; Lauer and McKinzie 45-56; Steiner and Long 42). No doubt critics have identified some of the challenges to providing high quality virtual reference service. However, with the growing proliferation of course management systems, online courses, and the general expectation that services will be available online, developing high-quality virtual reference services is of paramount importance if libraries intend to continue their missions of linking people to information. Virtual reference services no longer need to be solely text-based and there are a number of technology tools that can be used to enhance the service (Breitbach and DeMars). In fact, librarians must be creative in communicating online if there is any hope of developing the personal connections to patrons and quality service described by Samuel Green in the first issue of *Library Journal* in 1876 - the kind of service that makes patrons feel libraries are indispensible (74-81). Using videos created on-the-fly for specific queries can help ensure that patrons receive the same kind of high-quality services in the virtual world that librarians have been providing at the reference desk for more than a century.

Video in Virtual Reference

The use of video in virtual reference transactions can enhance interactions by providing images and audio to supplement text communication. This makes the transactions more visually appealing, efficient for librarians to conduct, provides opportunities for instruction, and allows

content creators to preserve and reuse content. Researchers have shown that students retain content-based video instruction better than text instruction in online educational environments (Choi and Johnson 222-25). Wisniewski and Fichter also make a good case for the use of visualization in presenting library related information when comparing library websites to commercial websites (57-60). They point out that library websites are text heavy, while more appealing commercial sites enhance content with a wide variety of visualizations. While libraries are not commercial enterprises, we must acknowledge that most patrons have experience navigating commercial websites and have developed expectations and search strategies in this type of environment. They may need our assistance understanding that our sites operate differently. Moreover, patrons may be new to the research process and expect it to go much more quickly than it does. Providing instruction in the least pedantic and most visually appealing way possible is crucial to keeping the attention of online patrons and satisfying their information needs. Content-specific video instruction can help librarians in this process.

Increased efficiency is another compelling argument for the use of video in virtual reference services. Typing detailed instructions into a chat box can be both time consuming and tedious. Moreover, the user interface of most instant messaging clients and virtual reference services makes reading multiple lines of text in a small chat box very difficult. The technology to produce videos is becoming increasingly accessible in terms of price and the technological expertise required to use the software is now minimal. A number of libraries have recognized the value of providing instructional videos for patrons. At least one study has shown that videos are an adequate alternative to live library instruction sessions. In this study, videos were produced to give introductory "library" information to a particular engineering course. No significant difference in student impressions of the content was found between live and video instruction. However, it should be noted that no attempt was made to assess learning outcomes in the study (Maness).

No doubt videos made for specific courses will become an increasingly important part of the librarians' tool kit for online/distance education as well as reference services. But videos for courses are typically made in cases where specific information needs are known ahead of time and librarians often take time to write scripts and produce polished videos. Some libraries also produce videos that show users how to use a particular resource. However, most of these videos are, by necessity, very general and may not address individual information needs. Instead, the videos are typically produced to answer a wide variety of questions using a particular tool such as the library catalog or a particular database. However, individual patrons usually come to librarians with very specific needs that may not be satisfied by a pre-existing video designed for a general purpose or a specific course. These videos will likely leave patrons with lingering questions and concerns.

Enter *Jing*

Jing is a free video and image capture tool that allows librarians to create custom content on-the-fly and send the content to the patron via a URL during a virtual reference transaction. The *Jing* interface is easy to learn and can be mastered with little practice. Producing short videos (or just screen images with annotations) can be done quickly and easily. Once a librarian has identified where they want to begin the video, they simply launch the application, select the screen area they want to capture, and click record. When the video or screen capture is finished, the software

then provides the opportunity to preview the content. Videos (or images) are then uploaded to a free hosting site called Screencast.com. Alternatively, the software can be configured to upload the file to an institutional server, but that requires a little more technical expertise and FTP permissions from an IT administrator. However, these extra steps eliminate some of the bandwidth restrictions of the free hosting that comes with *Jing*.

At the present time, the free version of *Jing* has a bandwidth-use limit that resets monthly for each account. If you reach the limit, your content will be inaccessible until the bandwidth is reset. The limit is quite high and the majority of users will not reach it. However, if you re-purpose the videos, create large numbers of them and post them online, or if multiple librarians use the same account, it is possible to reach the limit and have your content locked and made inaccessible at crucial times. This can be avoided by hosting frequently or heavily-accessed content on another server and reserving the use of the Screencast.com server to content that is created on-the-fly. This is unlikely to happen with librarians using *Jing* for virtual reference; however, if it were used for instruction sessions where large numbers of students access the content, these problems could occur. All of these limitations can be overcome for a subscription fee of approximately fifteen dollars.

Whichever method of upload is selected, once it is complete, a URL is placed on the computer's clipboard. The link can then be sent to the patron via the virtual reference chat interface. Virtual reference is then transformed from a simple text-based communications system into a multimedia experience. These videos can simulate what we show patrons in person at the reference desk and include both visual and audio instructions. The user sees exactly what is being described and should be able to easily replicate navigation and search techniques - saving the librarian from excessive typing.

For a subscription fee, more advanced features are available: options for multiple file formats, webcam recording, videos without the *Jing* branding, and a one button upload to YouTube. However, the upload to YouTube takes a significant amount of time and would therefore not be appropriate for creating content on-the-fly to share during a virtual reference encounter. Although the other mentioned subscription features are nice, they will not enhance the product much for use in virtual reference transactions. Therefore the subscription is unlikely to be useful for virtual reference.

Perhaps the most important aspect of these custom-made videos is that they give librarians the opportunity to place more focus on real information literacy instruction rather than simple website navigation. Using *Jing* creates an experience akin, although certainly not identical, to the one-on-one teaching librarians do at the reference desk. The combination of audio and video allows librarians to employ instruction strategies such as meta-cognitive modeling and other teaching methods that are difficult, tedious, and time consuming to employ using text communication alone. Now, instead of simply instructing patrons where to click, librarians are free to model the kinds of cognitive processes one goes though in selecting a resource, developing a search strategy, and identifying appropriate content. One could argue that this process still eliminates the dialogic nature of a traditional reference transaction. However, this does not need to be the case. Once the video is sent, the user can be given time to take a look and invited to ask additional questions. The librarian can then easily supplement with text or produce another video depending on the context of the follow up question.

An added benefit to this kind of instruction is that the patron can review the video or videos as many times as needed to learn the content. The ability of patrons to revisit content certainly makes learning and using the software worth pursuing for librarians who provide virtual reference services. That said, it may also be useful to capture video and images during traditional reference transactions and send the content to the patron for later use. *Jing* is simply one tool that allows librarians to take advantage of some of the benefits of working in the web-based information environment. There are surely many others.

Concluding Remarks

Librarians at California State University, San Marcos (Carr and Ly) and at the author's institution, California State University, Fullerton are having success using *Jing* to enhance reference services. At both institutions anecdotal evidence shows that students appreciate the service they receive when a video is made especially for them and several librarians are excited about using *Jing*. Since *Jing* is free and the learning curve is insignificant, the technology is accessible to any librarian with the desire to make virtual reference a multidimensional educational experience. Moreover, librarians are free from the tedium of typing detailed instructions into a tiny little box. Creating on-the-fly videos is perhaps the best way, currently available, to emulate some of the valued aspects of the type of instruction that occurs at the traditional reference desk - modeling how to select a resource, developing a search strategy, and choosing the most appropriate content for a specific information problem. In other words, this technology allows librarians to efficiently and effectively provide patrons service with a high level of customization and personalization - the two factors that have made in-person reference so successful.

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Empowering College Students' Research Skills via Digital Media

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Abstract

As the face of education and the idea of the university library are changing, getting students to ask for research help presents a challenge in higher education. Evidently, learning is not the same for the digital natives compared to the previous generations of learners. The use of traditional methods such as lectures or handouts in delivering research strategies can no longer meet the digital learners' needs. University libraries must embrace technology-based learning styles to create a familiar Web environment where virtual research tips are provided for students to learn at their own pace.

Smaldino, Lowther, and Russell articulate media as "means of communication" that carry information between "a source and a receiver" with a purpose to facilitate communication and learning (6). Among different types of media (text, audio, visuals, video, objects, and people), digital media are "digital, often having characteristics of being manipulability, networkable, dense, compressible, and impartial" ("Digital Media"). Briggs suggests that digital media are the content and services delivered over digital channels such as the Internet. While watched, the content and services can be connected (streaming/live) or unconnected (downloads/DVD).

Several universities have begun to set up channels on YouTube since October 2008. The video collection is not only distributing educational content, but also "selling" the university to the outer world. For example, being the first to launch on YouTube, the University of California-Berkeley offers a series of university courses for free. The UChannel by Princeton University provides a collection of international and political affairs videos. MIT also provides a new collection of classroom lectures. In addition, some university professors have used YouTube to extend their classroom. A well-known example is an assistant professor of Cultural Anthropology at Kansas State University, Dr. Michael L. Wesch, who made the video "Web 2.0: The Machine is Us/ing Us" that has drawn more than ten million views (Wesch). Unquestionably, "Web video offers a new way for scholars to communicate" and express their ideas (Young 16).

In spring 2007, a multimedia production team was established at the University of Northern Iowa Library. The team's primary goal is to produce an ongoing series of podcasts, YouTube videos, and *Flash*-based tutorials for virtual services. While the ultimate goal for these projects is to empower college students' research skills, these digital media projects are designed as small modules with clear purposes to meet the needs of diverse students. For example, for college freshmen, a series of "quick tips" on how to use online databases, electronic newspaper resources, and how to schedule a research consultation were developed. For international students, tips for how to check out books, study rooms, DVDs, laptops, and lockers were created. For specific research tools such as how to use the print-based Social Science Citation Index and the library's meta-search engine, a series of *Flash*-based tutorials were produced. After the production, the

videos were then announced in the University's online newspaper, the library's news blog, and the library's print newsletter.

In this session, the presenter will share the design and development process for producing low-cost digital media projects.

Introduction

The role of academic libraries is shifting. Problems in this transition have been mentioned throughout the literature by various researchers. One of the main concerns is a disconnect between how Net Gen students are using the Web and how academic libraries are offering services via their virtual presence. Learning scientists have revealed "that successful learning is often active, social, and learner-centered" (Oblinger and Oblinger 2.6). "With the appropriate use of [digital] technology, learning can be made more active, social, and learner-centered," and most important, meet the expectations of the digital and visually literate Net Gen students (Oblinger and Oblinger 2.6). Libraries have done little "to retain and expand their usefulness for online users" (McDonald and Thomas 4). As McDonald and Thomas suggest, the library should "create opportunities to make library information look and behave like information that exists in online entertainment venues" (5).

Literature Review

Today's college students are often referred to as the Digital Natives, the Millennials, or the Net Generation who have their distinct attitudes, behaviors, values, and learning habits. To help us understand Net Gen students' expectations and motivations about education, there is a need to discuss their characteristics.

The Characteristics of Net Generation

The most cited writers who describe the Millennial Generation, Howe and Strauss, sketched out seven core traits of the Millennials as special, sheltered, confident, conventional, team oriented, pressured, and achieving (Howe and Strauss 77-95). According to them, the Millennials are "more numerous, more affluent, better educated, and more ethnically diverse. More important, they are beginning to manifest a wide array of positive social habits that older Americans no longer associate with youth, including a new focus on teamwork, achievement, modesty, and good conduct" (4). Based on these observations, Net Gen advocates suggested academic libraries to rethink "library as place", reinvent physical buildings and services to embrace group collaboration, provide a social presence on networking sites, and extend virtual services to meet the Net Gen students' instant gratification and high expectation needs (Gibbons 93-94; Sweeney 173-175).

Some other characteristics that have been fully addressed include Net Gen students' views toward values, their changing learning needs, and how they use digital technologies for schoolwork. These characteristics are discussed in the following paragraphs.

Net Gen' Views toward Values

To better serve the current generation students, DeBard developed a list of collective views that described Net Gen students' views toward twelve descriptors used by Howe and Strauss as well as other researchers (40) (see table 1).

Table 1
Debard's List of Descriptors and Collective Views

Descriptor	Net Gen Students' Collective Views
Level of trust	High toward authority
Loyalty to institutions	Committed
Most admire	Following a hero of integrity
Career goals	Build parallel careers
Rewards	Meaningful work
Parent-child involvement	Intruding
Having children	Definite
Family life	Protected as children
Education	Structure of accountability
Evaluation	Feedback whenever I want it
Political orientation	Crave community
The big question	How do we build it?

Source: This table is extracted from a table which appears on page 40 in DeBard, Robert. "Millennials Coming to College." *New Directions for Student Services* 106 (2004): 33-45. *Academic Search Elite*. Web. 15 Jun. 2009.

Changing Learning Needs

Although some educators still see education as transferring stuff into students' heads, a changing paradigm of learning is shifting from "being taught" to "learning on your own with guidance." Especially, today's young people understand that power comes from being the first to share information, and those who share more learn faster. According to Prensky (who coined the terms Digital Native and Digital Immigrant), people's "thinking patterns change depending on one's personal experiences" – which he refers to as the malleability of their mind ("Digital Natives" 2). Therefore, "children raised with the computer really think differently" from the digital immigrants (Prensky, "Digital Natives" 3). For example, digital natives "develop hypertext minds", they "leap around" on the Web, and they are good at multitasking (Prensky, "Digital Natives" 3). "It's as though their cognitive structures were parallel, not sequential" (Prensky, "Digital Natives" 3). In response to digital natives' shorter attention spans, Prensky argues that digital natives do have shorter "attention spans - for the old ways of learning", not for the things that interest them very much such as being online or gaming ("Digital Natives" 4). "Digital natives accustomed to the twitch-speed, multitasking, random-access, graphic-first, active, connected, fun, fantasy, quick-payoff world of their video-game, MTV, and Internet are *bored* by most of today's education, well meaning as it may be" (Prensky "Digital Natives" 5). Prensky continues, "But worse, the many skills that new technologies have actually enhanced (e.g.,

parallel processing, graphics awareness, and random access)—which have profound implications for their learning—are almost totally ignored by educators" ("Digital Natives" 5).

Today's education system is still dominated by linear thinking processes that can actually hinder learning for those brains that have developed and evolved with modern technologies. New approaches including animation, computer games, and videos that digital natives are familiar with and really enjoy are "capable of meeting the digital natives' changing learning needs" (Prensky, "Digital Natives" 5).

Net Gen Learners' Use of Technology

Today's college students are the most wired generation in history. In order to best serve these Internet-savvy students, it is important to understand how they think about technology. Levin & Arafeh identified five virtual metaphors of how students are using the Internet for schoolwork:

- "The Internet as virtual textbook and reference library"**;**
- "The Internet as virtual tutor and study shortcut";
- "The Internet as virtual study group"**;**
- "The Internet as virtual guidance counselor"**;**
- "The Internet as virtual locker, backpack, and notebook" (6-7).

Definitely, learners today are different on the Web. They are both consumers and producers. As Brown suggests, the Web is a transformative medium that creates "a new kind of information fabric in which learning, working, and playing co-mingle" (16). The "learning ecology" today is for "anyone to lurk and learn" on the Web, is in situ, is life-long, and is happening everywhere (Brown, "Growing Up Digital" 16). Therefore, we need to seek each opportunity to see where technology fits, to extend "reach, and to engage students in new and thoughtful ways" (Levin and Arafeh 25).

The Disconnects

McDonald and Thomas depicted three core disconnects between the existing library culture and the Net Gen students, as shown in Table 2 below:

Table 2.
Three Core Disconnects

"Technology disconnects"
"Libraries lack tools to support the creation of new-model digital scholarship and to enable the use of Web services frameworks to support information reformatting and point-of-need, Web-based assistance such as multimedia tutorials or instant messaging assistance."
"Policy disconnects"
Using "electronic text-based collections . . . [where] multimedia content is noticeably absent", libraries are "usually 'outside'" of the primary channels for "online . . . student activity."
Opportunity disconnects
Libraries should "enable flexibility for new learners . . . "and offer technological enhancement" instead of "obsess[ing] with a single management system theory that has rarely worked" with Net Gen audiences.

Source: McDonald, Robert H., and Chuck Thomas. "Disconnects Between Library Culture and
Millennial Generation Values." *EDUCAUSE Quarterly* 29.4 (2006): 5. *ERIC (EBSCO).*
Web. 15 Jun. 2009.

These three disconnects suggest the importance of integrating multimedia technology into library
content and services to bridge the gaps for the new generation of learners.

The Emergent Role of Academic Libraries

Brown and Duguid distinguish knowledge from information: One can simply hold information
because information is easy to locate, share, receive, and process, but knowledge is hard to pick
up and transfer. Knowledge is "something we digest rather than merely hold. It entails the
knower's understanding and some degree of commitment" (120). The "creation, transmission,
and dissemination of knowledge require human involvement"; therefore, librarians can serve as
guides and aids that help students to "assimilate, understand, and make sense of" the various
disciplines they encounter through their coursework ("Taiga Forum" 429).

As Gibbons states, "the goal of an academic library is to be the best in the world at serving the
unique teaching, learning, and research needs of its home institution by being active participants
in the creation, transmission, and dissemination of knowledge" ("The Academic Library and the
Net Gen Student" 10). Therefore, the mission for academic libraries today is to be an effective
learning space, physically and virtually, and librarians can be part of the scaffolding that helps
turn information into knowledge. Sweeney also suggests librarians show Net Gen students how
library work can be flexible, innovative, and intellectually compelling- not boring- and how the
important skills they will learn can be applied to their future jobs (168).

Although there is no easy solution to bridge those disconnects, McDonald & Thomas suggest to
start evaluating what we are doing in our libraries by asking ourselves these questions:

- "Are we supporting the user's affinity for self-paced, independent, trial-and-error
methods of learning?"
- "Are we creating opportunities to make library information look and behave like
information that exists in online entertainment venues?"
- "Are we exploring alternative options for delivering information literacy skills to
users in online environments and alternate spaces?"
- "Are we applying the typical user's desire for instant gratification to the ways that
libraries could be using technology for streamlined services?"
- "Are we redefining administrative, security, and policy restrictions to permit online
users an online library experience that rivals that of a library site visit?"
- "Are we preserving born-digital information?" (5)

Digital Media

"Digital media usually refers to electronic media that work on digital codes" ("Digital Media").
Digital media are the content and services delivered over digital channels such as the Internet. In
recent years, YouTube has become one of the most popular online channels to deliver videos.
Nielsen Online recently released "that YouTube continued to rank as the No.1 Web video Web

brand with 5.5 billion total streams in April" 2009. ("YouTube Maintains Top Ranking"). No wonder more and more universities have been setting up channels on YouTube. The video collection is not only distributing educational content, but also "selling" the university to the outer world. For example, being the first to launch YouTube, the University of California-Berkeley offers a series of university courses for free; the UChannel by Princeton University provides a collection of international and political affairs videos, and MIT has also provided a new collection of classroom lectures. In addition, some university professors also use YouTube to extend their classroom. For example, a Cultural Anthropology professor at Kansas State University, Dr. Michael L. Wesch, uses YouTube to examine the impacts of digital technology on human interaction with his students (Wesch). Unquestionably, "Web video offers a new way for scholars to communicate" and express their ideas with the learners (Young 16).

According to Prensky, YouTube should not be just used for one-way broadcasting as it is very much a two-way medium ("Make Those You Tubes!" 2). Feedback in YouTube comes in four formats: number of times viewed, number of stars awarded, text comments, and video responses. As Prensky declares, video has now become such a standard means of communication that more and more important information is available only in video form. In order to meet the needs of Net Gen students, Mrozek and Sielaff suggest five main reasons for libraries to use digital technologies, especially the videos, in order to connect and communicate with Net Gen students:

- "Appeals to visual generation";
- "Personalizes services/products";
- "Puts a fun face on the library";
- "Another means of communicating with users" (Mrozek and Sielaff)

What We Do at Rod Library

Rod Library established a multimedia production team in spring 2007. The team consists of the department head of Reference and Instructional Services, the instruction coordinator, an instructional designer, and a student assistant. The team's primary goal is to produce virtual research help via digital technologies. Three types of projects have been created: podcasts, YouTube videos, and *Flash* tutorials. Each digital media project was designed into a small module with a clear purpose to meet a certain need.

Applying an ID Model

An instructional design model, ADDIE, was used. ADDIE is the "generic term for the five-phase instructional design model consisting of Analysis, Design, Development, Implementation, and Evaluation. Each step has an outcome that feeds into the next step in the sequence" (Reiser and Dempsey 18). ADDIE's originator was unknown, yet the model was refined by Dick and Carey and others (Reiser and Dempsey 18). The five phases are briefly described below.

Analysis

The primary tasks in the analysis phase are to identify the learning problems, set learning goals and objectives, and analyze leaner characteristics such as finding out who our audiences are,

their existing knowledge, and their learning needs. A contextual analysis should also be carried out to understand the learning environment, constraints, delivery options, and so forth so as to determine the timeline and cost of the project.

Design

In the design phase, tasks include determining content, specifying learning objectives, writing scripts, preparing graphics, developing storyboards (see fig. 1), and deciding technology tools to be used. In addition, developing assessment plans is also considered in the design phase.
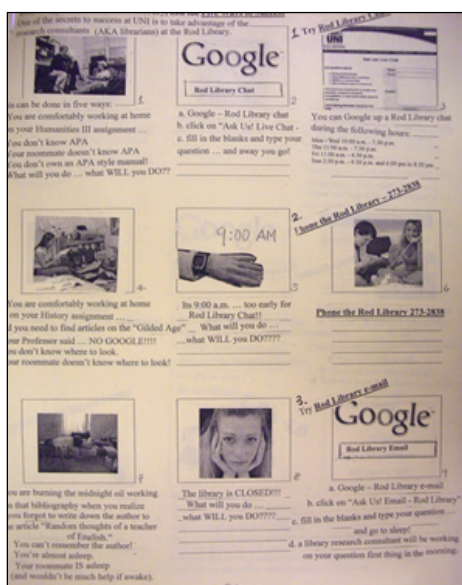
Fig. 1. A storyboard example: YouTube video- *Five Ways to Success*

Development

In the development phase, content and learning materials were being created based on storyboards. The main tasks include developing projects, filming, editing, and pilot testing. Drafts are sent to the content provider(s) for review. Revisions are made as necessary.

Implementation

In the implementation phase, the finished media projects were uploaded to the Web for easy access. The podcasts and *Flash* tutorials (made by *Adobe Captivate* or *Adobe Flash*) were hosted on the library's own server and the videos were uploaded to YouTube.com. Although our university currently can stream videos in *Quick Time (MOV), Real Video (RM), Windows Media Video (WMV),* and MPEG-4 formats using the Real Helix Universal Server, it does not support the *Flash* Video (FLV) format at the time of this paper was written. Since all YouTube videos are stored in *Flash Video (FLV)* format, they can be easily viewed through Adobe *Flash* Player within a browser. In addition to the wide range of video formats, other issues to consider include the cost, bandwidth, technical support, and the concern that the hosting server could become overloaded.

After a project was made live on the Web, a promotion plan was launched including one or more of the approaches below to reach students:

- Refresh the YouTube Playlist on the library website (see fig. 2)
- Announce it on the library's news blog (see fig. 3)
- Announce it in the library's newsletter (see fig. 4)
- Announce it in the student newspaper (see fig. 5)
- Mount a library exhibit
- Send out an email announcement to Library's faculty and staff

Fig. 2. An announcement on Rod Library's news blog.

Fig. 3. An embedded YouTube playlist on Rod Library's instruction page.

Fig. 4. An announcement in Rod Library's newsletter

Fig. 5. An announcement in the student newspaper

Evaluation

In the evaluation phase, both formative and summative evaluations need to be considered. Formative evaluations can be conducted in each stage of the ADDIE process. Summative evaluations consist of interviews or surveys "providing opportunities for feedback from the users" (Reiser and Dempsey 18). To help us understand students' opinions about our media projects, a pilot study was conducted. This study was designed to gather opinions about the projects (summative evaluation) and suggestions for improvement (formative evaluation).
Three assessment tools, *Google Analytic, YouTube Insight,* and *a survey,* were used to help understand the usage of multimedia projects that we have created.

1. Google Analytic

The statistical data was retrieved from reports generated by the library's Webmaster using *Google Analytic* tool. The file extension for *Flash*-based tutorials is SWF, which stands for Shockwave *Flash* or Small Web Format. The figure below shows the number of downloads requested for SWF files that have been increased from 986 times (5.13% out of total downloads) in fall 2007 to 1,541 times (9.12% out of total downloads) in spring 2009.
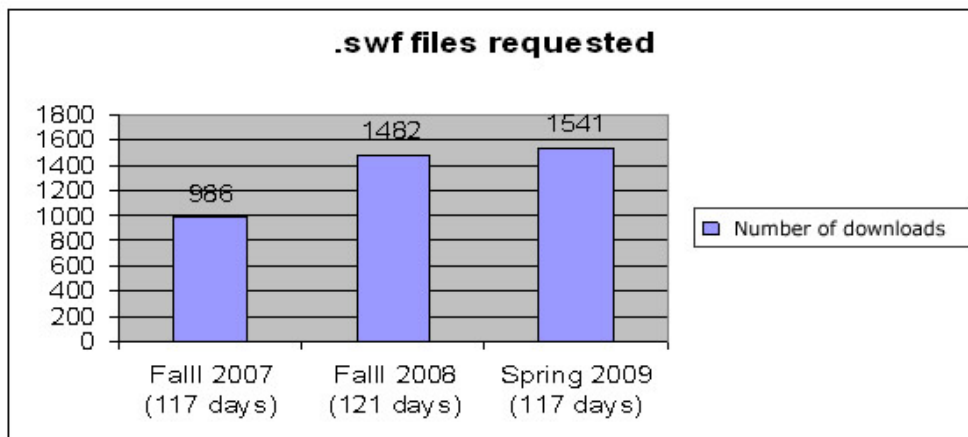
Fig. 6. SWF files requested from the Rod Library web site (Fall 2007 - Spring 2009)

The file extension for the podcast file is MP3, which stands for MPEG-1 Audio Layer 3**.** Because we haven't had a chance to produce podcasts in 2009; the statistical data for downloading the MP3 files have been decreased for 0.02% from 108 times (0.19% out of total downloads) in 2008 to 71 times (0.17% out of total downloads) in 2009.

2. YouTube Insight

YouTube released its video analytics tool *YouTube Insight* in March 2008. Anyone who has a YouTube account can easily retrieve statistical data for their own videos. For example, the statistical data shows the 10 videos we have submitted between November 26, 2007 and June 25, 2009 (129 weeks) were viewed 3,315 times, an average of 331.5 times per video. Table 3 below provides the number of views for each video from the day the video was added to YouTube to the day the data were collected:

Table 3.
Rod Library YouTube Videos Viewed on *YouTube*.com (11/26/07 – 06/25/09)

Title	Date Added	Total Views
Good Ideas and Bad Ideas 1: Study Room	11/26/2007	672
Five Ways to Success- Rod Library RIS Services at UNI	11/26/2007	770
Good Ideas and Bad Ideas 2: Rod Library Services	04/17/2008	860
Good Ideas and Bad Ideas 3: Rod Library Services	07/31/2008	209
Rod Library Services For International Students	10/16/2008	183
Library and the Internet	12/09/2008	134
Quick Tips from Rod Library	01/20/2009	184
Quick Tips 2: Newspaper Database	02/10/2009	91
Quick Tips 3: Gimme Stats! Gimme Charts! Gimme Graphs!	02/24/2009	93
Quick Tips 4: Call Numbers	03/04/2009	119
Total Views		**3,315**

Not only you can find out who is viewing your videos and where they are located through the "Discovery" feature embedded within *YouTube Insight*, you can also discover how the visitors are finding your videos. For example, visitors might be finding your videos through a direct link, an external link like Facebook.com, a YouTube search, a Google search, a related video, or an embedded video player that you have provided on your Web site. Nonetheless, all the reports can be downloaded as a CSV (comma separated value) file to be opened in any spreadsheet program for further analysis. The figure below shows our top 10 videos, the percentage of each video viewed, and the frequency of views within a one-year period of time in the USA.
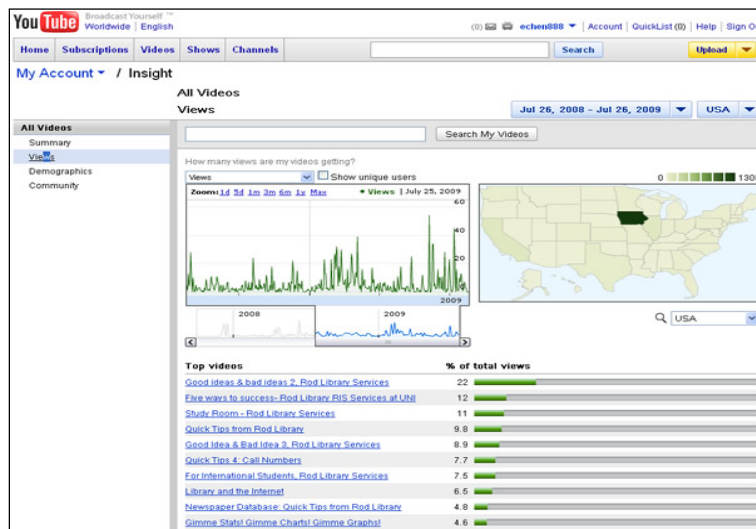
Fig. 7. A screenshot of *YouTube Insight*

3. *Rod Library YouTube Survey*

In summer 2009, a research pilot project was conducted focusing on Rod Library's YouTube videos. The goal of this research is to gain a better understanding of students' awareness about the library's digital media projects. Students were presented with three to five YouTube videos produced by Rod Library. After watching those videos, students were asked to answer these questions:

- Did you recall ever seeing a Rod Library video on YouTube?
- (If yes, how did you discover those videos?)
- Watch three to five videos and tell me what you like about the videos.
- Tell me what you dislike about the videos.
- Which of the videos is your favorite?
- What type of content would you like to see or expect to see in Rod Library's YouTube videos?
- Where should we place the announcement for new videos?

Results

Did you recall ever seeing a Rod Library video on YouTube?
Not surprisingly, most of the participants were not aware of Rod Library's YouTube videos. The result suggests that our promotion plan needs to be reevaluated in order to reach more students.

Where did the participants discover those videos?
Some students found our videos because they know the student assistant(s) who worked on the videos. Some students told us that they discovered our videos through the library's website. Although we did place an announcement in the student newspaper, none of the participants mentioned finding the videos through this approach.

Which of the videos is your favorite?
The answers vary depending on which three videos the participant chose to watch. Although there has not yet a favorite video being identified, the ones participants mentioned included *Google Uncle Sam*, *Call Numbers*, and the *Good Ideas and Bad Ideas* series.

What do the participants like about the videos?
The following comments were offered:
- Right to the point
- Both entertaining and informative
- The title is exactly what the guy talks about
- Instructional
- Easy to pay attention and get the information
- Concise information given
- Useful tips of not well known utilities
- The information was presented in a clear fashion
- The music (although a bit "corny") was good

- You can find the academic resources website while you need to do a research project

What do the participants dislike about the videos?
These comments were shared:
- Background music
- Audio is hard to hear
- Presented in a boring way
- The editing is so-so
- Did not actually show where and how to access those databases

What types of content do students expect to see?
Students made these suggestions:
- Informative videos with an entertaining spin
- Walkthroughs of how to use the databases
- A tour of the library for newcomers to know where things are
- How you find the company/related organization database including company background info, financial statement, etc.
- How to locate U.S. government documents
- Commonly asked questions pertaining to research

Where should we place announcements for new videos?
Student ideas included:
- Facebook Page
- Library homepage
- Email notification
- Notify faculty and professors so that they could mention it to their students
- Subscription alerts via YouTube
- Restroom newsletter
- School newspaper
- Union

Suggestions for Producing Low-Cost Digital Media Projects

Hardware

A digital camcorder is strongly recommended because it takes a significant amount of time to download video clips from a tape-camcorder to a movie editor. In addition to the computer, the hardware we used includes:
- *Sanyo Xacti* HD700 MPEG4-High Definition 720p Camcorder with 5x Optical Zoom ($499.55, *Amazon*.com, 06/22/2009)
- *Transcend* 8 GB SDHC Class 6 Flash Memory Card TS8GSDHC6 ($19.65, *Amazon*.com, 06/22/2009)
- *SanDisk* MobileMate™ SD™ Plus 5-in-1 Reader ($12.99, S*anDisk*.com, 06/22/2009)
- Additional hardware: microphone, tripod, earphone, etc.

The video editing software we used is *Adobe Premiere Elements* 3.0. It came with the Sanyo HD camcorder. For graphics, we used *Adobe Fireworks*. We also use an open source program, Audacity, for recording voiceover as well as for editing background music. See table 3 for a list of free of charge open source software and applications for producing low cost multimedia projects:

Table 4.
Open Source Software and Applications for Producing Low Cost Multimedia Projects

Image
Gimp (similar to Photoshop)
Inkscape (vector graphics, similar to Adobe Illustrator)
Blender (3D modeling)
Google Sketchup
Screen Capture
Zscreen
Greenshot
Thumbalize (for Web page)
Screen Casting
CamStudio
Wink
Jing
The Recordist
Audio
Audacity
Video
Jashaka
Jumpcut (online video editing)
JayCut (online video editing)
Loyalty Free Music for Education
Creative Commons
Incompetech

Conclusion

As McDonald and Thomas indicate, "research libraries have done little to embed themselves and their resources into the everyday tools, spaces, and activities important to today's learners" (4). Although it calls for more studies to find out whether students' research skills are improved by watching the digital media projects we have produced, our goals to embrace technology-based learning styles and to create a familiar Web environment where virtual research tips are provided for students to learn at their own pace will be achieved through a continuous team effort.

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Extend Student Learning after Class:
Moodle and Library Instruction

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Abstract

To promote learning outside of the classroom and supplement traditional learning models, many institutions are looking to Course Management Systems (CMS), like *Moodle*, to enhance student learning. This presentation will discuss how libraries can use this technology too - to complement library instruction sessions and create a library presence in the online academic community.

Moodle is easy to use and librarians can quickly create material to correspond to a particular instruction session or to provide information relating to the library in general. *Moodle*'s built in features allow for the development of course documents, quizzes, discussion forums, polls, glossaries, and more. With some imagination, librarians can use these features to construct and manage dynamic resource guides, answer students' questions, post lesson summaries and handouts, and provide documentation for material that may or may not have been covered in class. Students have the opportunity to contribute as well, by populating glossaries and participating in online discussions. In addition to complementing instruction sessions, *Moodle*'s calendar and news forum features offer information about the library. Librarians can populate the module with basic How do I? help sections, database guidance, and staff contact information that is accessible to students even when a library staff member may not be. For instructors, *Moodle* also provides usage statistics by section which facilitates assessment of particular features and resources. Overall, it is a user friendly platform that provides a means to strengthen and reinforce the library instruction experience in an online environment students already visit because of other coursework.

Meebo: Jumpstarting an Instant Message Reference Program

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Abstract

Like many academic libraries, the Hickman Johnson Furrow Learning Center at Morningside College has had trouble convincing students to use the library as a physical space. In an effort to reach out to students who were less than enthusiastic about entering the library for reference help, in 2005 the library rolled out instant message reference through *MSN*, *AIM* and *Yahoo*. By 2008, due to lack of use from users with *Yahoo* and *AIM*, the service had been scaled back to *MSN* only. In early 2009, hoping to increase the number of online reference interactions, a *Meebo* instant message widget was installed on the library website. Among the many reasons for this move was hopes that the library website would become more heavily trafficked, providing a way for students to ask potentially sensitive questions anonymously, and to stop forcing students to download a specific instant message client (particularly non-traditional students).

What are the benefits to instant message reference service? Do libraries actually accomplish anything by reaching out to students via instant message services? What are the benefits to using a web-based widget rather than specific instant message clients? What are some creative ways of implementing instant message reference? These questions will all be briefly touched up in this presentation along with the results of Morningside College's experimentation with web-based widget instant message reference.

Introduction

Morningside College (Morningside) is a small, primarily residential college located in Sioux City, Iowa. Morningside has a traditional, liberal arts undergraduate curriculum and slightly over 1,000 undergraduate students. Of the undergraduate students, the majority of students are traditionally aged (eighteen to twenty-four) and live on campus. Morningside also offers a Masters degree in education. The graduate program is completely online. Most of the graduate students are older individuals who are already working in education. The program has many students from throughout the state of Iowa. These two groups are the constituencies that Morningside's library, the Hickman Johnson Furrow Learning Center needs to serve.

Reference service at Morningside has always primarily consisted of face-to-face interactions, but we have also offered phone, e-mail, and instant message reference. E-mail reference has long been provided on an informal basis with students sending messages to any of the librarians. There is also a dedicated reference e-mail address that rolls over to our Reference/User Instruction Librarian's e-mail account. Beginning in 2005, Morningside began offering reference services via instant message services. Instant message reference was initially offered through *MSN Messenger*, *AOL Instant Messenger*, and *Yahoo Messenger*. Over the years, use of the AOL *Instant Messenger* and *Yahoo Messenger* accounts ceased until instant message reference help was only offered through *MSN Messenger*. Before the beginning of the Winter 2009 semester, I installed a *MeeboMe* widget on all library web pages (with the exception of the

OPAC). Since installing the widget (a small piece of code that may be inserted into a web page), virtual reference interactions have increased dramatically and student response to the service has been extremely positive.

On Virtual Reference

Virtual reference can refer to any type of reference interaction that falls outside of the face-to-face model. Telephone, e-mail, chat, instant message, and text reference services may all fall under the virtual reference umbrella. Virtual reference can take place through e-mail, instant message, chat services, or even through websites such as Second Life or Facebook. I have always defined the term virtual reference to mean chat, instant message or text message-based reference interactions. I would also say that chat reference includes interactions within websites such as Second Life or Facebook. Virtual reference interactions may be synchronous or asynchronous and oftentimes (such as in the case of *MeeboMe*) the same tool may be used for both synchronous and asynchronous interactions.

Why is it important for libraries to offer virtual reference services and how is virtual reference different from face-to-face reference? It is important for libraries to offer virtual reference because that is where the users are (Stephens and Gordon 37). Eighty percent of young adults use instant messenger. How many times have you heard a student say that they no longer need to go into the library because there is the internet? One of the goals of a virtual reference program is to create a relevant online experience for users. A significant portion of creating a relevant online experience for users is to provide assistance at the point of need (Trump and Tuttle 465). The need for reference services where the users are can be seen in the proliferation of tools such as *ChaCha* and *KGB*. Every time a new service crops up that charges for reference questions, librarians should see this as a failure on the part of the profession to keep the user at the center of services. Users have moved online and "they expect to find the same level of support for the information they find online as they would in the library" (Trump and Tuttle 464). The library has put a great deal of effort and money into making resources available online, and now needs to move towards making assistance as available as those resources (Broughton 26).

Virtual reference services need to provide the same level of service that a user would receive in a face-to-face interaction. It is easy to forget the humanity of the user on the other end of the computer in a way that it is not when confronted with an actual person. However, the level of service needs to be maintained. When a user asks a librarian a question online, the librarian must provide information that cannot be found through a simple Google search (Zino 94). The users know how to use Google. They probably have already tried Google or want to avoid it altogether. The librarian must prove to the user that they are going to a superior resource. It is crucial to let the users know that they are communicating with another human being. Research into online reference interactions have found that users feel more positively about the interaction when the librarian on the other end uses "greeting and closing rituals" (Tenopir 34). This simply means greeting the user in a friendly manner and closing out the conversation in a similar manner. I have used virtual reference services where at the end of the interaction the librarian simply went away. I did not want to use that service again. Perhaps the most important factor in a successful virtual reference program is good customer service. A key part of good customer service in a reference interaction is the reference interview. Yes, some users may simply want a link for an article on their topic of interest. However, other users may have a more complex

question than they initially present. Librarians seem to believe that users are choosing virtual reference over other types of reference interactions because they are in a hurry. The librarians, therefore, feel pressure to get users information as quickly as they possibly can. This, obviously, can negatively impact the quality of information a user receives. However, Marie Radford of Rutgers University has found that less than ten percent of virtual reference users are actually in a hurry. Most patrons are using virtual services because it is convenient for them (Radford 112). They should not receive substandard treatment because they choose to connect with a librarian online.

Virtual reference services developed when librarians started using various web-based instant message clients to provide reference services (Rethlefsen 14). Internet Relay Chat evolved into a variety of messaging systems (one of which, *MSN Messenger*, was used by Morningside for virtual reference for several years). These systems have continued to evolve into web-based systems that allow users to be logged into multiple instant message clients simultaneously and widgets that can be placed within a webpage. There are currently several library-specific commercial chat services available, but on a whole, these services are designed for libraries or consortia with a large volume of reference questions. These commercial services have been expensive, leading small libraries to believe that virtual reference is simply out of their financial range (Stephens and Gordon 36). This is simply not true. There are many low-cost or free services that may be used for virtual reference (particularly if you are a library with low reference question volume). It seems to be that every few months I run across a new tool that I think would be great for providing reference help. Unfortunately, we cannot be everywhere all the time and decisions do need to be made. We can, however, be everywhere on our own websites. A good library site should have a place to ask a librarian a question on every single page. AskColorado's coordinator, Kris Johnson, has discovered that the library sites with the most links out to the AskColorado service were the library sites that most of AskColorado's users came from (Radford 111). Prominent placement is critical to the success of a virtual reference program. If there is only one location on a site that a user can ask a reference question virtually, that library's program will not be successful.

Morningside and *MeeboMe*

MeeboMe was simply one of several options that we considered for Morningside. All librarians agreed that it would be beneficial to expand our virtual reference options. There were two basic ways that were considered to expand virtual reference. First, we considered simply expanding access through various instant message clients. There are several services that combine various instant message clients together, such as *Trillian* or *Jabber*. However, all of these require that the individual asking a reference question has some sort of instant message client and is comfortable giving the library somewhat personal information. Alternatively, we explored and eventually chose a widget that could be inserted into our website. The two widget-based solutions we looked into were *MeeboMe* and *Hab.la* for Libraries. Both had attractive points, but the *MeeboMe* widget satisfied our needs most simply and allowed students who were used to asking reference questions through *MSN Messenger* to maintain their current service. *MeeboMe* also is visually much more dramatic and noticeable than *Hab.la*, which was appealing for us as we did not have the time to market the service. The final point in favor of *MeeboMe* was that we could easily modify the widget to coordinate visually with our website.

Morningside's experience with *MeeboMe* as our tool of choice for virtual reference has been a great success. The semester before *MeeboMe* was installed, Autumn 2008, the library received twelve reference questions through instant messenger. The first semester using *MeeboMe*, Winter 2009, the number of virtual reference questions increased to forty-four. Each month of the Winter 2009, the number of virtual reference questions asked increased. For the entire 2007/2008 academic year, only seven questions were asked via instant messenger. Clearly, this service is filling a need that our previous virtual reference service did not. Additionally, this increase in the number of questions asked online was accomplished without any sort of marketing or outreach efforts.

In addition to the increase in virtual reference questions asked, students have spontaneously praised the service to librarians and new users to the service have mentioned that a friend had used the service, thought it was great and passed the word on to the new user. Graduate students have been particularly enthusiastic. The librarians here have been told over and over again by graduate students that they appreciate the ability to simply type their question into the widget without having to download or install any third party programs. Students have also expressed that they like the ability to enter a question when and where they are working, rather than having to interrupt their work to go to the library or setting aside their question for later. A few students have even realized that so long as they provide an e-mail address when they ask their question, they may ask a question through the widget after reference hours and a librarian will respond to their question via e-mail. Students have also told us that they really like that they can copy exactly what searches we are doing and what databases we are searching in. One student even told me that he will copy and paste a virtual reference interaction and save it for when he is doing research in the future.

Of course, there has also been some negative feedback regarding the *MeeboMe* widget. On the librarian end, the main issue that has cropped up is that *Meebo* stays open in a browser window or tab and when there is a new message, unlike *MSN Messenger*, that message does not pop-up in front of other open applications. We have worked around this by enabling sound on the reference computers and purchasing speakers. Now, when we receive a new message through *Meebo* there is a rather loud "beep" to get a librarian's attention. This is not fool proof as the Hickman Johnson Furrow Learning Center is not a quiet library. During the academic year, there is a class in the library for at least some portion of every day. There is also a coffee shop rather near to the reference desk that often times gets extremely noisy. Sometimes the notification "beep" can be drowned out by the ambient noise, but overall the speaker solution has worked quite well. We also added a second monitor to the reference desk, so that *Meebo* can always be open and have its own space on the desktop. The second monitor has been extremely helpful in managing *Meebo* but also in face-to-face reference interactions.

Further negative feedback has come our way with regard to wait times. Students are almost all extremely understanding about waiting for assistance when they are waiting in person. However, students in the library have gotten upset about waiting for help when a librarian is in the midst of a virtual reference interaction. Similarly, students who ask us questions online tend to want their presence acknowledged immediately, and do not respond well if we are working with a student already in the library. Of course, one of the greatest advantages of *Meebo* is that a librarian can work with multiple students at once, provided the librarian is comfortable with that sort of multi-tasking. If we had a larger staff at the Hickman Johnson Furrow Learning Center, I would

propose having two reference shifts. One reference shift would consist of being present at the reference desk and handling face-to-face interactions. The other reference shift would be behind the scenes and would address telephone reference questions and virtual reference interactions.

There have also been a few technical issues with regard to the *MeeboMe* widget. It is a *Flash* based widget and if a user's *Flash* player needs to be updated, the Widget will not appear. This is not as large of an issue as we had anticipated, in part I suspect, because so much web content is *Flash*-based. *Flash* also means that the widget is not compliant for users with low vision. We have had students express confusion about where to type their question in the box and some students have also had difficulty determining if a librarian is online to answer questions. A few students have told us that they were under the impression that the presence of the chat box indicates that a librarian is available. We edited the widget, so now when no one is online, at the top of the chat box it says "InfoDesk is offline. Leave a message." Since adding this message, we have received no more complaints about confusion over whether or not a librarian is available. Links within the chat box will not automatically open a new tab or window and a few sessions have been lost when either the student or the librarian clicks on a link and navigates away from the *Meebo* session.

There are some concerns with the entire concept of virtual reference from librarians and a few faculty members. One librarian feels particularly strongly that virtual reference will always be less than face-to-face reference interactions. On the other hand, I feel I provide better reference service virtually than I do in face-to-face interactions. Face-to-face reference and virtual reference both require a competent and in-depth reference interview and knowledge of the tools at hand. Customer service is at the core of providing useful reference service in both environments.

Future Directions

Morningside's foray into virtual reference service can, of course, still be improved. There are three main ways I would like to expand our service that would allow us to reach a greater number of students. First, I would like to install the widget in our OPAC as a pop-up that would appear when a search has yielded no results. The Topeka & Shawnee County Public Library has an Ask Now button that appears with all catalog search results. Second, I would like to get permission to place the widget on Morningside's portal page, MyMorningside. All students must go through the portal to access their Morningside e-mail, grade and other campus services. Having the *MeeboMe* widget installed on the portal would greatly increase awareness of the service. Finally, I would like to receive permission from a faculty member to install the *MeeboMe* widget as a pop-up in the online component of a class. Morningside is moving from *Blackboard* to *Moodle* for online course management, and it is incredibly simple to add widgets to *Moodle* course shells. All faculty members who have attended *Moodle* training sessions have been offered this opportunity, but no one has yet accepted the offer.

Morningside's experiment with the *MeeboMe* widget has been successful so far, but a huge component of our current success is based on our earlier lack of success with virtual reference. In order for our virtual reference service to continue growing, library staff will have to start marketing this service more aggressively. In particular, we need to make this service better known amongst faculty members and adjuncts. Morningside faculty members are excellent about getting students to come into the library to ask for research help and I hope once faculty members learn about our virtual reference service, they will also push students to ask for help in

that format. Adjuncts are a more difficult audience for us to reach, as they often only teach online course and can be very geographically dispersed. As adjuncts teach the majority of Morningside graduate students (also geographically dispersed), it is critical for the library to find ways to effectively inform adjuncts of library services, such as virtual reference.

There have been a few conflicts between students present for face-to-face reference and students asking reference questions via *MeeboMe*, as outlined earlier. To avoid these conflicts, participation in a virtual reference consortium could also be considered in the future. Another future option to consider would be the expansion of virtual reference services beyond chat to include text-message reference service. Of course, everyone at the Hickman Johnson Furrow Library is always on the lookout for new tools and technologies that will allow us to better serve our users. For now, the tool of choice is the *MeeboMe* widget, but in the future, we must be willing to move to a new virtual reference tool as technologies move forward.

Conclusions

The Hickman Johnson Furrow Learning Center's experiments with virtual reference through a *MeeboMe* widget have been extremely successful. We have increased the number of virtual reference questions asked without any marketing or public relations efforts. Virtual reference fills a need and allows us as librarians to be where the researchers are, that is to say, online. Having a virtual interactive presence is simply a must for academic libraries that wish to stay relevant in an online environment.

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Taking the Library Where Our Users Are (Where Is That, Exactly?)

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Abstract

Most librarians today recognize the need to "be where our users are"—that is, to integrate library services into users' preferred online environments. Libraries are on Facebook and Flickr; they blog and tweet; and some of them even contribute to Wikipedia. But how do we know that our users are actually in these places? Even if we think we know where our users go when they are online, do we know how these Web sites and services fit into their academic lives?

I attempt to answer these questions through a study of which Web resources students and faculty use and how they incorporate these sites into their academic workflows. Knowing where students and faculty go online, and what they do when they get there, allows librarians to better prioritize our online outreach efforts. This makes it more likely that we can succeed not only in "being where our users are," but, more importantly, in being in the places where we will be most useful to our students and faculty.

Introduction

The digital world has not always been kind to academic libraries. An oft-cited statistic says that only two percent of students begin their information searches at library Web sites (De Rosa et al. 1-7). Many users have switched from asking a reference librarian to asking Google or Wikipedia when seeking certain types of information. The number of items circulated from academic libraries' general collections declined by over twenty percent between 1994 and 2006 (Calahan, Justh and Williams 3; Holton, Hardesty and O'Shea 4). All of these facts point to a potentially diminished role for libraries in connecting academic users with information.

Although these facts may paint a bleak picture, a positive response to these trends is possible. If, in fact, users are bypassing library content and library Web spaces, libraries can take their content to their users' preferred Web spaces. However, in order to do so, librarians must know where it is that their users go online when they do their academic work.

Thus, this piece of research is the first in an ongoing project, first to study where students and faculty spend time online, and second, if current library content proves not to be in their regular online workflows, to research ways of integrating scholarly resources into students' and faculty members' preferred Web environments. This article reports on selected results from the first segment of this research: a survey of faculty members' online information preferences. Specifically, this article discusses whether and how often faculty use a variety of online tools and Web sites. A later survey of students will allow for comparisons between students' and faculty members' online information habits, and one-on-one interviews with students and faculty will hopefully provide a richer view of how students and faculty members integrate electronic resources into their academic lives.

The original plan was to survey both students and faculty simultaneously in the spring of 2009. Circumstances prevented the student survey from going forward on that timeline; as a result, the student survey will not be administered until the fall of 2009. The four-month gap between the surveys is regrettable, but, barring any major changes in the technological landscape, it is unlikely that there will be a dramatic shift in either student or faculty online information behavior in such a short timeframe. Thus, direct comparisons between the student and faculty responses should still be possible.

Literature Review

Studies of the impact of technology on students' information-seeking behavior have abounded in recent years. In addition to the countless smaller studies, three particularly ambitious pieces of research deserve mention. Booth's study of students and emerging technology at Ohio University may be the best example of the genre. The Foster-Gibbons anthropological study of undergraduate students at Rochester University is one widely-cited piece of research into students' academic lives; chapter 6, by Briden, contains particularly intriguing information about which technological hardware students own and about how and where they use them (46). In addition, OCLC's survey on *College Students' Perceptions of Libraries and Information Resources* is a particularly valuable source, since it is not limited to a single institution, as are the Booth and Foster-Gibbons studies (De Rosa et al.).

Similarly ambitious, recent (within the past four to six years) studies of the impact of technology on faculty's information-seeking behavior are harder to find, at least within the library literature, but there have been several studies that have examined some aspect of this issue. Barjak, who studied the use of the Internet for informal communication by scientists, discovered that younger scientists were more likely to use various networked technologies than were older scientists (1359). Barjak also provides an extensive overview of the literature on the use of the Internet by scientists and its effects on such topics as research productivity and collaboration.

A number of studies, including several by Tenopir, have examined the effects that the transition from print-based to electronic journals is having on faculty's searching and reading habits. Among Tenopir's findings are that researchers are increasingly reading electronically accessed articles from library databases, rather than print articles from their own subscriptions (Tenopir, King, Edwards and Wu 16-17). The same study found that researchers use search engines such as Google to find a surprisingly high portion of the articles that they read: of articles found through online searching, 14.2 percent were found via a search engine (14).

David Flaxbert has found that some researchers, dissatisfied with the electronic tools available to them, have created their own. For his qualitative study of the information-seeking behavior of chemists, he interviewed two chemists who describe creative ways that they have leveraged technology—in one case *EndNote* and in another case a custom script—to build their own information discovery tools (13-14).

The question of faculty acceptance and use of various technologies has also received attention from educational technologists. Pearce's study of technology usage by faculty at Lancaster University in England is an excellent example of a relevant study from an educational

technology perspective. Pearce surveyed the Lancaster University faculty and found, among other things, that a substantial minority of the faculty use Wikipedia to discover academic resources, while a majority use *Google Scholar* and basic Web searching to find such resources. Pearce also found a relatively low uptake of RSS among the faculty (5).

Method

The survey was administered online using *Vovici*, an online survey software product licensed by Grinnell College. A link to the survey was e-mailed to the all-faculty e-mail list on May 18, 2009; the survey was closed three weeks later, on June 8. The content of the survey is shown in figure 1.

Faculty Research Preferences Survey

The Grinnell College Libraries are inviting faculty and students to participate in a study about how members of the college community get information for their academic work. You have been invited to participate in this study because you are a faculty member at Grinnell College.

If you consent to participate in this study, you will complete a questionnaire about the strategies and technologies you use to gather information for your research and teaching. There are 38 questions, and it should take about fifteen minutes to complete. You are free to skip any question for any reason and to quit the survey at any time. All surveys are anonymous. The only risks involved with this study concern the possibility that questions regarding Web site usage may be considered sensitive. While there are no direct benefits, you may benefit from improved library services as a result of this study.

If you have any questions, please contact the researchers: Julia Bauder([bauderj], 269-4431) or Liz Rodrigues ([rodrigel], 269-3674). If you want to talk to someone other than the researchers, please contact Richard Fyffe ([fyffe], 269-3351).

Completing this survey acts as your consent to participate in this study.

Thank you for consenting to complete this survey.

First, we would like to know how you keep up-to-date with new literature being published in your field.

How do you find out about new articles published in your field? (Mark all that apply.)
   ❑ I browse the printed journals in Burling and/or Kistle.
   ❑ I browse journals that I personally subscribe to and receive in the mail.
   ❑ I have tables of contents automatically e-mailed to me by a journal publisher,
      database, IngentaConnect, etc.
   ❑ I receive tables of contents via RSS. (<u>What is RSS?</u> [link is to a 4-minute video])
   ❑ I go online and look for new electronic issues of the journals I read, either on the publisher's Web site   or in a database, without first receiving an e-mail or RSS feed notifying me of a new issue.
   ❑ I hear about important new articles from colleagues.

❑ Other. (Please describe below.)

Please describe:

_____
_____
_____

How do you find out about new books published in your field? (Mark all that apply.)
  ❑ I see book reviews while browsing the printed journals in Burling and/or Kistle.
  ❑ I see book reviews while reading journals that I personally subscribe to and receive in the mail.
  ❑ I see book reviews while reading journals online.
  ❑ I read the "Choice" book review cards given to my department by the library.
  ❑ I get e-mail alerts from major publishers in my field.
  ❑ I subscribe to an RSS feed with information about new books. (If so, please list which one(s)   below.) (What is RSS? [link is to a 4-minute video])
  ❑ I hear about important new books from colleagues.
  ❑ Other. (Please describe below.)

Please describe:

_____
_____
_____

Next, a few questions about Web sites, online services, and other technologies that you may use. How often do you use the following Web sites or services?

	At least once a day	At least once a week	At least once a month	Less than once a month / Never	I don't know what this is
Grinnell e-mail	❍	❍	❍	❍	❍
Other e-mail (GMail, Yahoo! Mail, etc.)	❍	❍	❍	❍	❍
A personalized Web portal (e.g. iGoogle, My Yahoo!). If so, please tell us which one(s) below.	❍	❍	❍	❍	❍
PioneerWeb	❍	❍	❍	❍	❍
The search boxes that let you search the library catalog or databases from PioneerWeb	❍	❍	❍	❍	❍
The MyChannels/RSS Feeds module in	❍	❍	❍	❍	❍

PioneerWeb

Another RSS reader (e.g. Bloglines, Google Reader)	○	○	○	○	○
The Grinnell College Libraries Web site	○	○	○	○	○
The Grinnell College Libraries catalog	○	○	○	○	○
Database(s) that you access through the Grinnell College Libraries Web site	○	○	○	○	○
Other database(s) besides the ones on the Grinnell College Libraries Web site. If so, please tell us which one(s) below.	○	○	○	○	○
Online bookstores (e.g. Amazon.com, BarnesandNoble.com)	○	○	○	○	○
LibraryThing	○	○	○	○	○
Google Search (plain old Google)	○	○	○	○	○
Google Scholar	○	○	○	○	○
Google Books	○	○	○	○	○
Wikipedia	○	○	○	○	○
A social networking site (e.g. Facebook, LinkedIn). If so, please tell us which one(s) below.	○	○	○	○	○
Twitter	○	○	○	○	○
How often do you access Web sites via a	○	○	○	○	○

cellphone, iPhone, Blackberry, or similar device?

How often do you send or read e-mail via a cellphone, iPhone, Blackberry, or similar device?	◯	◯	◯	◯	◯
How often do you send or receive text messages?	◯	◯	◯	◯	◯

Please describe:

_____
_____
_____

Next, we would like your opinion about some services that the library might offer.
If the library offered the following online services, how likely would you be to use them?

	Definitely use	Probably use	Probably not use	Definitely not use
A personalized "library home page," where you could choose the links and search boxes that you wanted to appear.	◯	◯	◯	◯
An option to add search boxes for your favorite databases to your PioneerWeb home page.	◯	◯	◯	◯
An option to subscribe to an RSS feed that would let you know when the library gets new books about a topic. (What is RSS? [link is to a 4-minute video])	◯	◯	◯	◯
An option to subscribe to automatic e-mail alerts that would let you know when the library gets new books about a topic.	◯	◯	◯	◯
An option to subscribe to an RSS feed that would send you the tables of contents from new issues of	◯	◯	◯	◯

journals. (What is RSS? [link is to a
4-minute video])

An option to have the tables of contents from new issues of journals e-mailed to you automatically.	○	○	○	○
A button in the library catalog that would send you a text message with the call number and citation for a book that you have found.	○	○	○	○
A library Web site that was easy to view on cellphones/iPhones/Blackberries/etc.	○	○	○	○
A library catalog that could be searched from cellphones/iPhones/Blackberries/etc.	○	○	○	○

Thanks for sticking with the survey. You're almost done!

Now we'd like to ask you a few questions about yourself.

I am:

○ An assistant professor

○ An associate or full professor

○ On Senior Faculty Status

○ Other

I am in the:

○ Humanities division

○ Social studies division

○ Science division

I identify as:

○ Female

○ Male

○ Other

I go to Burling or Kistle:

○ At least once a day

○ At least once a week

○ At least once a month

○ Rarely or never

Fig. 1. Faculty survey.

The population included 269 faculty members: the 278 faculty for the 2008-09 school year (not counting emeritus/emerita faculty), minus 9 librarians who were asked not to respond to the survey. Of that population, 55 provided usable data for the survey, for an overall response rate of 20.4%.

However, there was a very low response rate was for faculty with "Other" status, which includes lecturers, visiting professors, and the like. Only 3 responses came from this group, out of a possible 74 persons. Since the "Other" group had such a low response rate, their responses were not included in the analysis. Also excluded was one person who did not answer the question about faculty status. After excluding "Other" faculty and the single non-respondent for the question on faculty status, the overall response rate for the remaining faculty (assistant, associate and full professors and those with Senior Faculty Status was 26.2% (see table 1). (Senior Faculty Status allows faculty aged 60 or over to reduce their duties to the equivalent of a half-time appointment for up to five years before their retirement. Persons on Senior Faculty Status may continue to teach and/or do research, but not all are actively involved in both.)

Although persons on Senior Faculty Status (SFS) had a good response rate, the small number of faculty with this status makes it difficult to generalize from their responses. Thus, the SFS data has been combined with the data for associate and full professors in the tables below.

Table 1
Survey Response Rate

	Responses	Population*	Response Rate
Assistant Professors	17	68	25.0%
Associate and Full Professors (not including those on SFS)	30	111	27.0%
Senior Faculty Status	4	16	25.0%
Total	51	195	26.2%
* Note: Population does not include library faculty, as library faculty were asked not to respond to the survey.			

The respondents were not significantly different from the faculty population in terms of gender or academic division (humanities, social studies, or science).

Findings

Core Library Content

Despite the concerns about declining use of library resources, faculty are still using core library content, such as the library Web site, local library catalog, and library-provided databases. A clear majority, 62.7% use the library Web site at least once per week, and 9.8% use it daily.

However, assistant professors seem to use the library's Web site, catalog, and library provided databases less frequently than associate and full professors (see tables 2, 3 and 4.) For all three questions, the mode response for assistant professors was "at least once a month," while for senior faculty it was "at least once a week." Almost three-quarters (74.2%) of associate and full professors use the library Web site once a week or more, while barely more than half (52.9%) of assistant professors do. Similarly, less than half of assistant professors (47.1%) use the library catalog once a week or more, while almost two-thirds (65.6%) of senior faculty do. The differences are even starker for library-provided databases: two-thirds (66.7%) of senior faculty use them at least once a week, while just over one-third (35.3%) of junior faculty use them that often. These differences were not statistically significant, but given the small sample size, only very large differences would have been judged significant. It would be very interesting to test this hypothesis with a larger sample size to see if the results are replicated and if they are significant with a larger sample.

Table 2
Frequency of Usage of the Library Web Site by Faculty Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never
Assistant professors	3 (17.6%)	6 (35.3%)	**7 (41.2%)**	1 (5.9%)
Associate and full professors (including those on SFS)	2 (6.5%)	**21 (67.7%)**	6 (19.4%)	2 (6.5%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.				

Table 3
Frequency of Usage of the Library Catalog by Faculty Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never
Assistant professors	2 (11.8%)	6 (35.3%)	**8 (41.1%)**	1 (5.9%)
Associate and full professors (including those on SFS)	1 (3.1%)	**20 (62.5%)**	9 (28.1%)	2 (6.3%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.				

Table 4
Frequency of Usage of Library-Provided Databases by Faculty Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never
Assistant professors	2 (11.8%)	4 (23.5%)	**8 (47.1%)**	3 (17.6%)
Associate and full professors (including those on SFS)	2 (6.1%)	**20 (60.6%)**	7 (21.2%)	4 (12.1%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.				

Science faculty also seem to use these core library resources less often (see tables 5, 6, and 7), although again, the small sample size makes it difficult to establish statistical significance.

Table 5
Frequency of Usage of Library Web Site by Academic Division

	At least once a day	At least once a week	At least once a month	Less than once a month or never
Humanities	3 (16.7%)	**11 (61.1%)**	4 (22.2%)	0 (0.0%)
Social Studies	2 (11.8%)	**11 (64.7%)**	3 (17.6%)	1 (5.9%)
Science	0 (0.0%)	5 (38.5%)	**6 (46.2%)**	2 (11.8%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.				

Table 6
Frequency of Usage of Library Catalog by Academic Division

	At least once a day	At least once a week	At least once a month	Less than once a month or never
Humanities	2 (11.1%)	**12 (66.7%)**	4 (22.2%)	0 (0.0%)
Social Studies	1 (5.9%)	**9 (52.9%)**	5 (29.4%)	2 (11.8%)
Science	0 (0.0%)	5 (35.7%)	**8 (57.1%)**	1 (7.1%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.				

Table 7
Frequency of Usage of Library-Provided Databases by Academic Division

	At least once a day	At least once a week	At least once a month	Less than once a month or never
Humanities	2 (11.1%)	**9 (50.0%)**	5 (27.8%)	2 (11.1%)
Social Studies	2 (11.1%)	**11 (61.1%)**	3 (16.7%)	2 (11.1%)
Science	0 (0.0%)	4 (28.6%)	**7 (50.0%)**	3 (21.4%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.				

Google and "Web 2.0"

Respondents to the survey reported high levels of usage of Google and Wikipedia. Only two faculty members said that they rarely or never search Google, and the majority use Google daily (see table 8.) Google usage appears to be higher among assistant professors than among senior faculty, although, again, the small sample size makes it difficult to establish statistical significance.

Table 8
Frequency of Google Usage by Academic Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never	Don't know what this is
Assistant professors	**13 (76.5%)**	3 (17.6%)	1 (5.9%)	0 (0.0%)	0 (0.0%)
Associate and full professors (including those on SFS)	13 (41.9%)	**15 (48.4%)**	1 (3.2%)	2 (6.5%)	0 (0.0%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.					

Usage of *Google Scholar* and *Google Books* was lower than usage of *Google Search* (see tables 9 and 10.) Only 16 of 51 faculty (31.3%) reported using *Google Scholar* once a week or more, and the mode answer to this question was "less than once a month/never." Usage of *Google Books* was also relatively low, although a moderate percentage of humanities and social studies faculty use it regularly: 6 of 18 humanities faculty (33.3%), and 6 of 16 social studies faculty (37.5%), report using *Google Books* once a week or more. No science faculty reported using *Google Books* this frequently.

Table 9
Frequency of *Google Scholar* Usage by Academic Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never	Don't Know What This Is
Assistant professors	**5 (29.4%)**	3 (17.6%)	3 (17.6%)	**5 (29.4%)**	1 (5.9%)
Associate and full professors (including those on SFS)	3 (10.0%)	5 (16.7%)	7 (23.3%)	**10 (33.3%)**	5 (16.7%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.					

Table 10
Frequency of *Google Books* Usage by Academic Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never	Don't Know What This Is
Assistant professors	2 (11.8%)	4 (23.5%)	4 (23.5%)	**5 (29.4%)**	2 (11.8%)
Associate and full professors (including those on SFS)	1 (3.3%)	5 (16.7%)	3 (10.0%)	**14 (46.7%)**	7 (23.3%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.					

Faculty use Wikipedia at a surprisingly high level: the vast majority of assistant professors use it at least once a week, and most senior faculty use it either weekly or monthly (see table 11.)

Table 11
Frequency of Wikipedia Usage by Academic Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never	Don't Know What This Is
Assistant professors	1 (5.9%)	**11 64.7%)**	2 (11.8%)	3 (17.6%)	0 (0.0%)
Associate and full professors (including those on SFS)	2 (6.3%)	10 (31.3%)	**13 (40.6%)**	7 (21.9%)	0 (0.0%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.					

Fifteen of the respondents (31.3%) reported using social networking sites once a week or more, with junior faculty much more likely to report using these sites than senior faculty (see table 12.)

Table 12
Frequency of Social Networking Site Usage by Academic Rank

	At least once a day	At least once a week	At least once a month	Less than once a month or never	Don't Know What This Is
Assistant professors	**5 (29.4%)**	**5 (29.4%)**	3 (17.6%)	3 (17.6%)	1 (5.9%)
Associate and full professors (including those on SFS)	1 (3.2%)	4 (12.9%)	1 (3.2%)	**24 (77.4%)**	1 (3.2%)
The denominator in each percentage is the number of faculty of that status who answered the question. (The survey did not force faculty to answer every question.) Percentages may not add up to 100 due to rounding.					

Other Frequently-Used Technologies

Everyone who answered the survey reported checking their college e-mail account every day. This may be due to selection bias; the faculty who don't check their college e-mail regularly were presumably less likely to see the invitation to take the survey. Slightly under half (46.7%) of the respondents also check a non-college e-mail account daily. The college's course management system (*Blackboard*) is also used on a regular basis: 44 percent of respondents report using it daily, and another 42 percent report using it at least weekly. Online bookstores such as Amazon.com are also popular, with 85.7 percent of respondents reporting using such sites a minimum of once a month.

Infrequently-Used Technologies

A few technologies had very low reported levels of usage among the survey respondents. No respondents to this survey use Twitter daily, and only two (4.3%) reported using it once a month or more. Two faculty (4.1%) reported accessing Web sites on a mobile device, such as a cellphone or Blackberry, daily, with another four (8.2%) reporting doing so at least once a month. Six respondents (12.2%) also reported reading or sending e-mail on a mobile device once a month or more, with three reporting daily use and three reporting use at least once a month. RSS and personalized Web portals were also used by a minority of respondents. The daily or weekly use of personalized Web portals was reported by only 27.1% of respondents. For RSS, four respondents (8.3%)—all assistant professors—reported using *Blackboard*'s RSS reader module once a month or more, and 10.6% reported using another RSS reader once a month or more. Finally, the vast majority of faculty are not using LibraryThing to organize their personal libraries: 69.6 percent say that they do not know what LibraryThing is.

Discussion

Since the survey invitations were sent by e-mail and the survey was administered online, the results are likely to be at least slightly skewed towards faculty with some degree of comfort with technology. It is important to bear in mind, when looking at these results, that there may be a pool of faculty who are less comfortable with e-mail and online surveys whose opinions are not represented in the results.

Given that the respondents are likely to be the more technologically savvy faculty, it seems safe to assume that technologies that are little-used by the respondents are little-used by the faculty in general. In this context, the low usage of mobile devices for viewing Web sites or sending e-mail is notable. Several libraries, including North Carolina State University, have invested in making their library catalogs and/or other resources usable on mobile devices (*MobiLIB)* and the interest in "mobile libraries" is so great that "Open and Mobile" was chosen as the theme of the 2009 Library and Information Technology Association (LITA) National Forum. Based on the results of this survey, it appears that a move to a more mobile-friendly library Web presence would benefit very few faculty. Of course, such a move may still be worthwhile if it benefits a substantial number of students; the results of the student survey should shed some light on that question.

The most interesting results of this research project are likely to come in comparing the technology usage rates of faculty and students, but the potential differences between junior and senior faculty should also be of concern to librarians. Although the differences in usage levels were not statistically significant at this small sample size, the possibility that the differences are real is worthy of further attention. Much of the literature about "digital natives," Millennial students, and the like has focused on how libraries should adapt their services, their methods of outreach, and their information literacy instruction to best reach digitally literate undergraduates. Less attention has been paid to the fact that many of the junior faculty of today were, in 2001, the college students of whom Prensky was speaking when he popularized the phrase "digital native." Whatever one may think about the overgeneralizations inherent in dividing people into "digital natives" and "digital immigrants" based on their ages, the larger question remains: if, in fact, junior faculty are increasingly resembling "digital native" students rather than "digital immigrant" senior faculty in their Internet habits, how will libraries need to adapt the services that they provide to faculty?

Conclusion

This research is a small step towards determining what online tools will best serve academic library users in our increasingly digital future. The upcoming survey of students will expand on this research, allowing for comparisons of the online habits of students and faculty. Once the student data has been gathered, it will be possible to begin investigating where libraries should integrate their content to be in students' and faculty members' online workflows, and whether libraries need to be in different Web spaces to reach these two groups. Then, additional research can investigate potential methods for integrating library content into these spaces and assess the impact of such integration.

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How to be the Bad Guy without Being Bad: Strategies for Getting Your Staff Back on Track

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Abstract

As managers and supervisors we all have dealt with employees who were not working up to their potential or performance expectations. While most people respond positively to coaching and constructive criticism, there are those who continue to perform below expectations and allow their performance issues to become behavioral problems, or worse to affect their colleagues in the organization. As managers, we are expected to be leaders and motivators, as well as the person who doles out punishment when there is a problem. Consequently, dealing with these types of problems is often uncomfortable and can be inconsistent.

This session will present strategies for coaching, conducting effective performance improvement discussions, and building personal responsibility for performance shifting it from the manager to the employee. The session will also cover common types of performance issues, and how to reinforce and recognize good performance.

Expanding while Simplifying: Document Delivery Services at the University of Wyoming Libraries

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Abstract

Faced with a renovation and addition to the University of Wyoming Coe Library, the Science Library was closed for renovation and conversion to a storage facility, the Library Annex. New services were implemented to delivery documents while the compact shelving was installed: the *Voyager* Call Slip module was used to page "Science" books and bring them to the main library for pickup and a web form allowed users to request periodicals to be scanned which were delivered via email. These services were reasonably successful, but there was some patron confusion as to when to use specific request channels. As we re-opened the Annex and prepared to start moving older bound periodical volumes to this facility we decided to expand these services to all campus libraries and, at the same time, to simplify the way patrons placed requests. We installed an *ILLiad* client at the Annex to save running staff over to scan interlibrary loan requests and realized the OCLC product would be a good platform to replace the previous web form and had other benefits such as enabling OpenURL transfers of bibliographic citations from databases and tracking of requests by patrons. Library Systems staff programmed a way to scrape bibliographic data from online catalog records and bring them into *ILLiad* through OpenURL. Recognizing that the resulting service was both intra-library and interlibrary loan, we rebranded the service as *Request It*. There were virtually no concerns within the Libraries about offering such services and breaking with long-standing library practice that if an item were available on open shelving patrons were responsible for locating it themselves. Long-term library users are pleased with the new service and millennial students tend to react that this is not novel; it is the way things should have always been.

The Libraries Access Services and Systems departments continue to explore ways improve delivery speed and make things easier for our users. The Libraries van run was expanded to twice a day. *ILLiad* clients were installed at other branch libraries so paging and scanning could be done where the material was located. *Request It* (*ILLiad*) was switched to LDAP authentication so patrons had one less username/password combination to remember. Library administration reviewed interlibrary loan subsidies and decided that all charges would be borne by the Libraries. Subsequently we implemented OCLC's "Trusted Sender" feature and edged into the buy-not-borrow practice. We have implemented Colorado State's RAPIDill system as a major *Request It* component and look forward to when it will be fully integrated into *ILLiad*. The replacement of our ILS offers new challenges and new opportunities for document delivery. We still have a way to go to connect *Request It* to our regional end-user request service, *Prospector*.

Introduction

The Bible tells us, "There is nothing new under the sun" (*Jerusalem Bible*, Eccles. 1.9). While some might want to quibble with this statement, there is considerable truth when applied to library services, such as the University of Wyoming's (UW) *Request It*. Many libraries have storage facilities from which they page materials. Many libraries use *ILLiad* to manage their interlibrary loan. Some libraries make on-demand copies of articles for their users. Like other libraries we felt pressures to create new document delivery services only to discover that we had confused some of our borrowers. What makes *Request It* new for us is that we have managed to simultaneously expand document delivery while we simplified the request process. *Request It* is a service rooted in the University of Wyoming's particular circumstances but we hope other libraries can evaluate our goals, our methods and our general approaches to see if there is something that can be applied to their situations.

Certain recent events at the UW Libraries are important to mention as precursors to the development of *Request It*.

1. Our Interlibrary Loan Office uses OCLC's *ILLiad* management software. While designed for use in interlibrary loan, the software is flexible enough to be put to other purposes, such as North Carolina State's use to page materials from their storage facility (Harper).

2. Endeavor Information Systems programmed a connection between our *Voyager* library system and our regional *Prospector* union catalog in 2005. This software used an unknown (to us) *Voyager* feature, *Callslip*, which was intended to allow patrons to request materials from the OPAC, to have staff page them and to send notices when materials were ready for pick up.

3. In 2005 the Wyoming State Legislature funded both an addition to and renovation of our William Robertson Coe Library. Since the main library was to stay open during this process, the Libraries decided to convert our Science Library into an on-campus storage facility with a large compact shelving installation. This required closing the Science Library. Our Coe Shelving unit started transferring what would be over 750,000 bound periodical volumes there while we retained the original Science book collection until it would be transferred to Coe at the end of renovation. Consequently we had a large amount of material inaccessible to our patrons.

The Development of Request It

To provide structure to the story of *Request It*, we have made up version numbers, similar to common practice in software development. Developments important to *Request It* that predate the service are given in square brackets.

[Request It 0.5 (6.2006)]

For the duration of remodeling what would become known as the Library Annex, our Access Services Department developed two services to make the collections accessible. *Voyager's Callslip*, which we had used in implementing *Prospector*, allowed borrowers to request volumes to be paged, brought to Coe several times a day and our circulation system would notify them

when items were available. Electronic Desktop Delivery (EDD) allowed patrons to request specific articles via a web form, which would be scanned and emailed back, typically in less than three hours. Both services became quite popular but we noticed two problems: patrons had difficulty telling them apart and patrons asked us why they couldn't use the services to access materials in our main library or other library branches.

[Request It 0.7 (2.2007)]

Since our Library Annex staff was already scanning articles and sending PDF files through email, my Interlibrary Loan Manager asked if they could have them do the same for requests from other libraries. This would save sending Interlibrary Loan staff across campus. Our Systems Department installed the *ILLiad* client in the Annex and our Interlibrary Loan staff set up the necessary queues and trained the Annex staff to use *ILLiad*. This modest procedural change had wide-ranging consequences—it made us aware of the similarity of EDD and Interlibrary Loan and it broke the local tradition that *ILLiad* was only used in the Interlibrary Loan Office.

[Request It 0.9 (4.2007)]

Shortly thereafter the author attended Jesse Koennecke's EndUser presentation about simplification of document delivery services at the Cornell University Libraries (Koennecke). Their general theory was that patrons didn't want to know what method to use to get specific types of materials; they just wanted the material as quickly as possible. Cornell treats the request process as a black box; patrons make requests through a single interface and, behind the scenes, interlibrary loan staff makes decisions on the fastest methods for obtaining materials. The resultant pressure on the staff required the Libraries to systematically review existing policies, staffing and workflows with an eye toward making their operation as efficient as possible.

UW Interlibrary Loan and Systems staff started discussing *ILLiad* to manage *Callslip* and EDD. We quickly concluded that this would be relatively easy to do. As we reviewed recent *ILLiad* developments to improve patron usability or staff efficiencies, we started thinking about continuing *Callslip* and EDD after the Library Annex reopened and extending the services to all of our collections. Once this idea was broached it was only a minor mental leap to the notion of combining these services with interlibrary loan based on the Cornell experience.

As our plan for what we were calling "interlibrary loan on steroids" became more concrete we sought administrative review and endorsement. We'd expected resistance based on our departure from normal practice that able-bodied borrowers should retrieve their own materials from our collections. That reaction didn't materialize, at least in part because we had previously discussed service adjustments based on what we were learning about the new "millennial" students who had no difficulty asking libraries to do things for them that previous generations had taken as the way things were (Sweeny). We got the go-ahead from the library administration with the proviso that, like interlibrary loan, we would restrict this expanded service to UW students, faculty and staff.

Request It 1.0 (8.2007)

Since we were already routing interlibrary loan scan requests to the Library Annex through *ILLiad*, replacing EDD looked like an easy first step. Leaving *Callslip* in place, we eliminated

the EDD web form and redirected patrons to our *ILLiad* logon page so they could use its journal article request form. Annex and Interlibrary Loan staff paged journal volumes, scanned articles, used *Ariel* or *Odyssey* to deliver them and had *ILLiad* notify patrons when materials were available. If a request was from our e-journal resources, we would send the patron the PDF file. If we didn't have the requested article, we automatically converted the request into an interlibrary loan request because we felt stopping to ask the patron if s/he wanted us to do so was a waste of time, since most just wanted the material. Because the new service was such a change for the Libraries, Access Services staff started providing regular updates to our Reference librarians as things developed.

Few regular Interlibrary Loan users noticed the change. However, when the author was explaining the new service wrinkle in a New Faculty Orientation session, one attendee had a light bulb moment and mentioned she had gotten material from us in less than two hours. We started getting lavish compliments, which we suspected was gratitude for having stopped returning requests for locally available items.

Request It 1.05 (8.2007)

As we faced re-opening the Library Annex and the start of the Fall Semester 2007, we started thinking about publicity and what to call this new service. "Interlibrary Loan" was well known to some users but the service also had an intramural aspect. We had used "*ILLiad*" as the name for our user interface but we wanted to discontinue using product names for library services. Cornell had used "Get It" but since the Rethinking Resource Sharing Initiative had started developing a Get It web browser plug-in, we decided to avoid that term (Rethinking Resource Sharing Initiative). We settled on "*Request It*" as a succinct description of the service's purpose. Our web designer created an icon and we started replacing "Interlibrary Loan" and "*ILLiad*" in our OpenURL resolver (Serials Solutions' Article Linker) and throughout the Libraries' website. We retained "Interlibrary Loan" as the name of the unit that managed *Request It* and their physical office in Coe Library.

We did an all-out publicity push with brochures, presentations to campus groups, listserv announcements and newspaper articles. This produced a big collective yawn. Nobody seemed to care until they wanted something and they noticed improved delivery times.

Request It 1.1 (8.2007)

We had planned to investigate LDAP (Light Weight Directory Protocol) authentication at some point in order to have *ILLiad* use the same usernames and passwords that patrons used to access University systems and email. When the University announced a new identification card as part of their effort to eliminate use of Social Security numbers, our Systems staff tested linking *ILLiad* to the Information Technology Division's LDAP server. Satisfied with both the technical and public aspects, we publicized the changeover through emails to current interlibrary loan customers. *ILLiad*'s built-in features allowed most borrowers to convert their accounts smoothly. We did discover there were several small categories of UW affiliates that didn't have LDAP accounts so for them we continued using traditional *ILLiad* authentication. Though the conversion created more problems than we anticipated, it made creating new *Request It* accounts quite easy for UW affiliates who hadn't previously had *ILLiad* accounts.

Request It 1.2 (9.2007)

Early in our planning we had decided to replace *Callslip* in order to reduce request channels and to allow pickup locations other than Coe. Our Systems staff started programming a way to pull citations from our UW Catalog and send them to *ILLiad* through OpenURL. We had thought this would take some time but a *Request It* button magically appeared at the bottom of all full OPAC records. We quickly masked the button while Systems created interrupt web pages to prevent patrons from requesting non-circulating materials. We wanted to be able to pull volume holdings like *Callslip* where patrons could select from a drop-down box but we couldn't find an easy way to do it. We finally added a field in the request form for patrons to fill out. When a year later we started considering replacing our *Voyager* system, we dropped the idea of this enhancement.

Once the feature was ready, we unmasked the *Request It* buttons and removed *Callslip* from the OPAC's My Account and all website references. As we had done with articles, we decided to automatically request materials that were unavailable locally through interlibrary loan. We had a problem using this JavaScript-based feature on some web browsers on some Macintosh computers. Adding delivery of physical volumes to *Request It* required us to expand the library van runs to twice a day with the unfortunate result that it wasn't as fast as *Callslip* had been. Having hidden the different means used to supply materials (scanning, e-content, moving physical volumes and traditional interlibrary loan), some borrowers started expecting that everything could be provided in a matter of hours. We attempted to ameliorate some of the confusion by emailing *Request It* customers when we had to go off-campus to obtain materials.

As we had suspected much of the paging of bound volumes from the Annex had been so patrons would make photocopies and the availability of getting articles scanned led to a decline in paging there. However, the business of shifting materials among libraries more than made up the difference.

In a little over two months we had simplified authentication and consolidated three request channels into one—*Request It*. During the same time, we looked at ways to incorporate *Prospector* as well but ultimately decided to leave it as a separate request system even though it would cause confusion. Rather than rest on our laurels, we shifted our attention to enhancing efficiencies "behind the curtain."

Request It 1.3 (10.2007)

We had deliberately set up the Library Annex as a branch interlibrary loan operation because of its large and growing collections as we continued to transfer bound journal volumes there. Based on the Annex staff's experience in using *ILLiad*, we started letting them complete transactions after they had scanned articles and stored them on the *Ariel* or *Odyssey* servers. The success of distributing work to a branch where materials were located led us to extend the same approach to our other staffed branch libraries, the Brinkerhoff Geology Library and the Learning Resources Center. Though these branches got much less traffic because of their smaller collections, this allowed us to focus Interlibrary Loan staffing on Coe collections and our unstaffed Rocky Mountain Herbarium collection. Systems acquired common scanners and support software for scanning as well as installed *ILLiad* clients at the branches. After setting up necessary *ILLiad* queues, Interlibrary Loan staff trained the branch staff in use of *ILLiad* and the expectations of on-campus patrons as well as borrowing libraries.

Though not part of *Request It*, we also set up a parallel system to forward *Prospector* requests by installing the *Callslip* client in the branches so items could be pulled there and sent to Coe Library for processing.

Request It 1.4-1.4.5 (10.2007)

Some of you are aware of OCLC's "Trusted Sender" feature. It allows a library to stop inspecting incoming scans and photocopies from other libraries and get materials a bit faster to borrowers. Initially we assessed the quality of scans and photocopies we were receiving.

In order to start using "Trusted Sender" we had to change our interlibrary loan $10/request subsidy. As anyone that partially subsidizes interlibrary loan knows, we had to frequently ask the requester whenever something would cost more than $10 and then get back to the supplier, which delayed delivery and required more staff intervention. When we analyzed the costs we were paying for interlibrary loan, we found most showing up in OCLC's ILL Fee Management (IFM) program, which meant we were being invoiced long after receiving the item and so usually ignored our subsidy and paid for items. About the only material we were consulting with patrons was purchase of theses and dissertations. Based on several years' expenditure data, our library administration agreed for the Libraries to pay all costs associated with borrowing.

Subsequently we implemented "Trusted Sender", designating virtually all partners as trusted until we received sufficient problems that would lead us to remove the "trusted" status. We subsequently found that patrons were happy to tell us about poor quality images and more understanding of the delays when we had to get replacement pages.

Request It 1.5 (3.2008)

After settling the matter of *Request It* charges for our patrons, Interlibrary Loan and Collection Development staff discussed testing the buy-not-borrow approach as a faster alternative to getting books through interlibrary loan (for example, Gee). Given a doubling of our collection development budget, we limited our buy-not borrow test to theses and dissertations that were not available for loan, adding them to our collections after the patron returned them.

When the national financial meltdown finally made it to Wyoming in June 2009, the University cut its support budgets by 10%. Purchasing theses and dissertations found its way onto the chopping block and, as of the July 1st, we have suspended our buy-not-borrow program.

Request It 1.6 (5.2008)

Some of you know about RAPID, an article delivery system developed by the Colorado State University Libraries in the aftermath of their flood. Based on participating libraries' journal holdings, requests are matched by ISSN and routed to possible supplying libraries that are expected to fill RAPID requests through *Ariel* or *Odyssey* within 24 hours. The RAPID staff was working with *ILLiad* to interlink borrowing transactions, so that RAPID was treated in *ILLiad* as a really big library.

We were interested in RAPID because it looked like it could speed delivery of articles to our patrons, cut request charges and our local consortia (the Colorado Alliance of Research Libraries) had negotiated a collective license for the product. Unfortunately, other things kept getting in the way, like developing *Request It* or the incomplete integration of RAPID lending transactions in *ILLiad*. Late last fiscal year we found ourselves in the situation of having paid for the service for two years but never using it beyond some short-term testing. Rather than pay for it another year, we implemented RAPID in May 2008. Given the quickness of getting requested articles, we joined all of the RAPID pods (groups of participating libraries) that we could.

RAPID also increased the amount of scanning we did for other libraries and threw a spotlight on the sad state of our serial holdings. We knew we had inconsistent holdings in our local catalog and our Technical Services Department had begun a multi-year project to revise them. The transfer of older journal volumes to the Annex slowed the updating of holding records while making them more complex. We had tried to upload our serial holdings into OCLC just about the time they put an embargo on such things and we now find ourselves about a year and a half back in the queue. We have much better control of our electronic journal holdings through Serials Solutions but insufficient staffing and/or priority to analyze license agreements means we are not making the best use of our e-journals for OCLC or RAPID traffic. We look forward to when Serials Solutions will upload publishers' standard license agreements into 360 Resource Manager.

The impacts of RAPID have led us to regularly assess the number and type of Interlibrary Loan staffing. To provide some relief for the Interlibrary Loan Office, we switched all *Prospector* processing that had been happening there to our Coe Circulation unit.

Request It 1.6.3 (7.2008)

Because our circulation desks are open more hours than our Interlibrary Loan Office, we place requested materials on hold at our various desks. Since *Voyager* and *ILLiad* are not connected, our circulation units used a clunky procedure of collecting paper forms when items were picked up and sending them to Interlibrary Loan so that *ILLiad* could be updated. When *ILLiad* 7.3 provided a Web Circulation module that allowed circulation staff to update *ILLiad*, we quickly implemented it. Though we have occasional problems with the module, Web Circulation saves considerable staff time for our Interlibrary Loan borrowing staff.

Request It 1.6.5 (1.2009)

After my Interlibrary Loan Manager attended the 2009 RAPID users meeting in Denver, she brought back word of an *ILLiad* RAPID Manager module that could be installed to further automate processing of borrowing requests. Once we had checked the listservs for problems and with some early adopters, our Systems staff installed and activated the Manager. The positive results of this installation made us even more interested in the full integration of RAPID in *ILLiad*.

Request It 1.6.7 (3.2009)

Since starting up *Request It*, some of our patrons confuse it and *Prospector*. For the former you have to check your *Request It* account and for the latter you have to check your *Voyager* My Account. A particularly forceful patron complaint led us to consider ways to reduce the

confusion. The fact that we were less than a year away from migrating from *Voyager* to *Millennium* meant that programming a solution made no sense. As a stopgap measure we included a link in the *Request It* logon page to My Account and vice versa. Even so we continue to receive occasional questions at circulation and reference desks about differentiating the two systems, proof in a back-handed way of the desirability of reducing request channels for our patrons.

Request It 1.7 (5.2009)

In May 2009, we installed *ILLiad* 7.4 and learned that it does fully integrate RAPID into *ILLiad*. While automating RAPID lending doesn't directly affect borrowing by UW affiliates, it makes the Interlibrary Loan staff more efficient in general and easier for lending staff to help the borrowing staff when they are swamped.

What Comes Next?

Our experience with *Request It* tells us that we are never finished. We will continue to tweak the service, add capabilities, enhance staff efficiency and react to changes in our supporting systems (Van Arsdale).

- Implementing Millennium and Encore means we will have to rebuild our method of pulling OPAC citations into *ILLiad* for paging. It may also provide means to partially integrate *Prospector* into *Request It*.

- As part of our Millennium/Encore implementation, we are incorporating the University's separate Law Library system. Based on that cooperation we are discussing extending *Request It* to the Law Library for the mutual benefit of both libraries' patrons.

- We want to investigate OCLC's Direct Request feature, which eliminates staff processing of certain types of requests.

- We plan to double our ILL loan periods and eliminate renewals in order to cut down on staff mediation.

- The *ILLiad* 8.0 upgrade later this year may bring new features to consider for *Request It*.

Needless to say we have a lot of possibilities to consider in the months ahead.

What Have We Learned?

From the beginning *Request It*'s overall goal was: Deliver materials needed by UW students, faculty and staff quicker while simplifying the requesting process and not driving the Interlibrary Loan staff crazy. Our guiding principles include the following:

- Manage the *Request It* service centrally in our Interlibrary Loan Office.
- Share the workload among cooperating circulation units by paging and scanning where the materials are located.

- Use existing software or develop new software to make getting materials easier for both patrons and staff.
- Reduce staff handling of requests wherever possible.
- Continue to work on educating patrons about realistic delivery expectations since we obscure how we are getting materials.
- Subsidize document delivery costs to allow us to select lenders by speed rather than cost.
- Adopt the shortest turnaround expectation for all similar transactions, for example we try to respond to all book requests in three days (DOCLINE) and journal articles in 24 hours (RAPID) rather than OCLC's four days.
- Mine software or situational changes for opportunities to improve service or to enhance staff efficiencies.
- Recognize that your institutional OpenURL resolver is an important part of the document delivery system and work with it even if organizationally it is not part of your departmental portfolio.

The results of implementing *Request It* are numerous and wide-ranging. Some were easy to anticipate and some surprised us.

1. Our patrons have taken to the service. We quickly moved from worrying that our patrons didn't know about it to wondering how to cope with increasing demand.

2. We have anecdotal evidence that patrons are receiving materials quicker. While this is obvious to staff and long-time interlibrary loan customers, it seems to have only whet the appetite of our customers' expectations.

3. Our subsidy costs have increased; we are spending significantly more for IFM and buy-not-borrow activities.

4. We have taken the notions of simplification and efficiency and applied them to other aspects of interlibrary loan, for example, pulling requests from the statewide interlibrary loan system, VDX, into *ILLiad*.

5. We have reversed a decade and a half slide in interlibrary loan transaction numbers, in part by redefining interlibrary loan.

Table 1
Interlibrary Loan, Library Annex Retrieval & Request It Transactions

Fiscal Year	Lending	Borrowing	Total
2002-03	25,251	14,509	39,760
2003-04	24,188	15,914	40,102
2004-05	20,713	16,381	37,094
2005-06#	21,094	17,418	38,512
2006-07#	22,391	28,743	51,134
2007-08*	20,820	26,957	47,777
2008-09*@	34,445	31,227	65,672

= includes Library Annex retrieval services
* = includes *Request It*
@ = includes RAPID

6. We have learned anew about the importance of serials holdings data and e-journal license provisions for OCLC, DOCLINE and RAPID.

7. Even if you want to eliminate competitive request channels, particularly *Prospector*, you may not be able to and so have to deal with the resulting confusion.

8. We were lucky: we had licensed *ILLiad*; we had a history of subsidizing interlibrary loan charges; we had energetic and interested Interlibrary Loan and System staffs; and we had good administrative support.

While other libraries may not share our circumstances or interest in expanding and redefining document delivery, we hope that they can find a bit here or there that can be considered and possibly applied from our experience.

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What We Do for the Sake of Correct Citations

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Abstract

While one might expect that the quality of students' citations of sources has improved due to the many citation help screens and citations for articles currently available in databases, librarians often caution students to check the integrity of these citations against style manuals or library provided style sheets. However, Kessler and Van Ullen, librarians at the University of Albany, found that more than 90% of the citation examples provided by major databases included errors (27). Coupling this problem with the wide array of citation style examples included on Web pages and listed as "Cite this Source," professors are bemoaning the quality of students' reference lists and in-text references. Many times they return students' papers, instructing them to "clean-up" their citations. Students, unaware of where they have gone awry, show up at the reference desk asking for help.

Librarians, as colleagues with classroom faculty, have long been considered the authorities on citation form and style. Students and faculty alike turn to librarians for advice about citing unusual sources. With the advent of electronic sources, very few student papers incorporate solely traditional print sources. The evolving landscape of electronic media requires that citation styles be constantly reinterpreted and adapted to accommodate new types of sources. Librarians are often the first ones to be asked to interpret how to cite these unforeseen changes in information styles. As a result, we find ourselves creating citation guides and instructional tools to help students and faculty cite new types of resources.

Intrigued by the wide variety of instructional styles and online resources librarians are creating to assist students and faculty in citing sources that they learned about in conversations at conferences and encountered on the Web, the presenters surveyed public and private undergraduate four year university and college libraries in a nine state region in the Midwest regarding the type of citation reference services and instruction they provide. They chose to confine their research to a regional area in order to obtain a large enough sample to validate their research, while not creating such a large sample that collating the information was untenable.

This presentation will include an overview of common practices and unique models gleaned from the surveys collected. Information gathered from the survey will include:

- Service and instructional trends.
- Online resources created by librarians.

- Anecdotal information about successful services which help students produce accurate bibliographies.

Time for inclusion of audience experiences with citation services and instruction will enhance the session.

Introduction

While one might expect that the quality of students' citations of sources has improved due to the article citations available in databases, librarians often caution students to check the integrity of these citations against style manuals or library provided style sheets. Kessler and Van Ullen, librarians at the University of Albany, found that more than 90% of the citation examples provided by major databases included errors (27). Coupling this problem with the wide array of citation style examples listed on Web pages and in databases as "Cite this Source," professors are bemoaning the quality of students' references. They often return students' papers, instructing them to "clean-up" their citations. Students, unaware of where they have gone awry, show up at the reference desk asking for help. At Northwest Missouri State University (Northwest), librarians answer enough of these inquiries to justify purchasing style manuals for APA, MLA, Chicago, Turabian, and Scientific styles for each office of librarians—and they're lost if they lose their manuals!

Librarians are often considered the authorities on citation form and style. The evolving landscape of electronic media requires that citation styles be constantly adapted to accommodate new types of resources. All of the major style manuals have published updates in recent years, but none of them can keep up with the pace at which the Web is reinventing itself. Librarians are often the first ones to be asked to interpret how to cite these unforeseen changes. As a result, they find themselves creating citation guides and instructional tools to help students and faculty cite new types of resources. And, often, they "make up" citation form on-the-fly because there is no example that fits the source a student is using.

Intrigued by the wide variety of instructional and online resources librarians are creating to assist students and faculty in citing, a rising number of local citation questions, and results from the James Madison University Information Literacy Test (ILT) indicating that Northwest students were struggling with identifying sources from citations and knowing how to search for sources using information in citations, two members of the Information Services Team in Owens Library at Northwest surveyed public and private four year university and college libraries in a nine state region of the Midwest regarding the type of citation reference and instruction services they provide. They chose to confine their research to a regional area in order to obtain a large enough sample to validate their research, while not creating such a large sample that collating the information was untenable.

This paper will provide a review of literature regarding librarians' practices in the area of citation teaching and reference service; describe the survey administered by the authors; analyze and discuss the results of the survey; and suggest areas for future research.

Citation Reference and Instruction

While some professors consider instruction in the areas of research integrity and appropriate citation practices to be within their personal purveyance, others expect librarians to partner with them. Parker-Gibson describes the results of a survey of Tufts University faculty, in which approximately 50% of the faculty believe they are responsible for teaching students "about evaluation of sources, academic honesty, research misconduct, and plagiarism, [while] almost 42 percent thought that the responsibility should be the *shared duty* of librarians and faculty" (95). Parker-Gibson further highlights the one-on-one opportunities librarians are afforded in face-to-face interactions with students during reference interactions, providing ample opportunities for teachable moments in which librarians can supply guidance in appropriate citation practices and avoidance of plagiarism (99-100).

Kessler and Van Ullen characterize faculty as unaware of students' struggle with the mechanics of citing and thus not offering to help them. In their view, this is why students ask librarians for assistance. These authors outline three traditional ways in which librarians provide citation help:

1. One-on-one help at the reference desk,
2. In-house style guides,
3. Library instruction.

Other venues where students obtain citation help include software programs that create reference lists and databases which provide citations for articles (23). Kessler and Van Ullen studied the citations in seven databases commonly used in undergraduate libraries. Uncovering an average of four errors per citation and a 94% error rate, they concluded that students should not depend upon databases to provide bibliographic entries (26-27). The traditional role of librarians as guides for citing sources, as well as the development of new resources that extend style guides beyond printed resources to online tutorials and interactive learning resources, must be preserved and extended.

At the University of Wisconsin-Eau Claire, an assignment in which librarians extended information literacy instruction by 15 minutes to incorporate a paraphrasing exercise provided an opportunity for students to learn how to create citations. Students practiced paraphrasing and quoting information, as well as parenthetically documenting the material appropriately. Librarians graded the students' exercises, providing feedback to help improve their skills in appropriately using material from sources. Six classes of 20 students were sent a self-assessment of the exercise. Ninety of 140 freshman students completed the survey (a 64% return rate). Thirty-five percent of the responding students indicated that the paraphrasing exercise was the first time they were taught about citing. More than 80% of the students noted that the paraphrasing exercise aided them in learning how to parenthetically cite references. These results indicated that there is a need for citation instruction and that librarians can fill this need (Bronshteyn and Baladad).

A research study conducted by faculty in northwest England provided online resources for freshman level students with the goals of reducing plagiarism and improving citation practices. Students were not required to access the online materials, but 50% of their grade for their final

project was dependent upon the use of appropriate citations. Seventy-five percent of the students indicated on a mandatory pretest that they had not previously received instruction about how to cite sources. Sixty percent of the students indicated that they didn't know how to cite online information and 62% of the students admitted that they often had trouble keeping track of where they found information for research. Despite their realization that they needed help with referencing sources, only 35% of the students accessed the online presentation entitled *Plagiarism and Referencing* and even fewer (26%) viewed the resource named *Introduction to Referencing*. During the posttest, 59% of the students indicated that they didn't use the online materials because they had too much to do; 26% admitted they procrastinated for too long; 19% felt they didn't need the instruction; and 15% complained about access or hardware issues. When the final assignments were graded, 30% of the papers included signs of plagiarism and the mean average grade was 51%. The faculty concluded that students won't learn about citing and plagiarism unless they are required to access the learning resources during class (Brown, et al. 144-154).

Floyd, Colvin, and Bodur reported on an analysis of student bibliographies created before and after library instruction. During library instruction students learned to isolate peer-reviewed articles from other sources; which databases indexed the definitive literature in their field; skills for locating print and electronic sources; information about evaluating Web sites; and how to contact librarians for help. The students who received library instruction used a significantly higher amount of scholarly sources, peer-reviewed journals, larger range of journal titles, and a greater number of journals with lower acceptance rates for manuscripts than the control group (372). These same students cited more electronic sources, but fewer Web sites, than their counterparts, presumably because they learned how to use electronic library databases and evaluate free Internet resources. The one area where the librarians found little improvement in bibliographies was in citation style. The library instruction didn't include citation assistance. While the students improved their skills in selecting information sources, they still were unable to correctly cite those sources. The librarians concluded that citation information needed to be added to library instruction to help the students become aware of how to use APA Style and become more knowledgeable of what information is needed for citing sources (Floyd, Covin, and Bodur 375).

Knight-Davis and Sung studied undergraduate students' papers submitted to a portfolio at four levels (freshman, sophomore, junior, and senior) and discovered that students' citation practices improve throughout their college career. The improvements were defined as an increase in the number of citations included in papers and the number of peer-reviewed journals cited.

E-Mail Surveys

Most social scientists are happy to receive a 20% return rate to a survey (Denscombe 17). Critics of e-mail surveys worry that the response rates will be extremely low because the surveys will be ignored as spam. According Denscombe:

> Internet surveys operate on basically the same principle as the postal questionnaire. In the case of email, though, the mail-shot tends to be more random. It is more difficult to calculate who or how many will be contacted through the mail-shot. The potential advantage is that vast numbers can be contacted with practically no costs involved. Responding to the questionnaire can be made less

onerous for the respondent, and returning the completed questionnaire can be done at a keystroke without the need for an envelope or stamp. (60)

According to Denscombe, problems with Internet or e-mail based survey data often stem from a lack of control over the population base of respondents (60). Correcting for this risk involves careful selection of the list of survey recipients.

Another concern related to e-mail based surveys involves a widespread belief that people don't like to respond to web-based surveys. Recent research has dispelled that notion. Robust response rates to web based surveys indicate that response rates to snail mail and e-mail surveys are similar and that web based surveys may actually be the means of choice when respondents can choose their method of response (Denscombe 60).

Northwest's Interest in Citation Reference and Instruction

The research studies described above each highlight the important role of librarians in citation instruction and reference assistance. During the past few years, librarians in Owens Library at Northwest felt that numbers of citing reference questions were increasing. An analysis of reference transactions data confirmed that the number of citing questions has risen over the past three years, as shown in Table 1 below:

Table 1
Owens Library Citing Reference Questions

Year	# of Citing Questions	% of Increase in # of Citing Questions	Total # of Reference Questions for Year	Percent of Reference Questions that were Citing
2006-2007	258		2154	12%
2007-2008	347	34%	2209	16%
2008-2009	397	14%	1878	21%

We were only able to track citing questions for the years 2006 through 2009 because we first began tracking reference transactions by specific type during the 2006-2007 academic year. Owens librarians encourage students to make appointments to bring in their sources and receive assistance in locating the correct elements or format needed to match the citation style they are following. However, as shown in table 2, students rarely take advantage of this service, which requires scheduling in advance.

Table 2
Owens Library Help with Citing Appointments

Year	# of Citing Questions	Help with Citing Appointments	% of Total Citing Questions
2006-2007	258	11	4%
2007-2008	347	27	8%
2008-2009	397	11	3%

Owens Library also has two online tutorials that teach students the value of academic honesty and plagiarism avoidance, while stressing the importance of documenting sources (Hayes; Ury and Park, "Practice"). Two online tutorials provide demonstrations of creating APA Style citations using Word 2007 software (Ury and Park, "Creating Citations"; Ury and Park, "Web Sites"). A few faculty at all levels from freshman through graduate classes assign their students to complete the academic honesty and/or plagiarism tutorials and take an online, self-grading quiz that posts their grade in eCompanion courseware. However, as Brown et al. discovered, traditionally aged students who aren't required to access these materials in class rarely take advantage of the information and help available in these learning modules. These students often take the quiz without reading the tutorial (154).

Freshman level English Composition worksheets for library instruction model appropriate information to collect for citations and the *MLA Citation Style Examples* page is briefly shown to those classes (English Composition – Book; English Composition – Articles; Johnson, MLA). Fundamentals of Oral Communication students (also a first year class) are shown the *Owens Library APA Citation Style Examples* page and are encouraged to use the examples provided on this page during library instruction classes (Baudino). These students' textbook contains a research chapter authored by the Northwest librarians, which thoroughly covers the subjects of citation and appropriate use of source material (Schwartzmann et al.).

Despite the many resources Northwest librarians have created to assist students with citing, including citation guides for MLA, APA, Turabian, Chicago, and Scientific styles, students continue to have many questions about citing sources (Johnson, "Citing Sources"). Part of this question volume is due to the evolutionary nature of online and electronic sources. But many of the questions result from the students' unfamiliarity with and lack of practice in using formal citation formats. Many Northwest students transfer in English Composition and Fundamentals of Oral Communication credit and have not had instruction in citing electronic sources.

Further evidence of Northwest students' need for help with citation recognition and structure was brought to light in the results of the 2008 and 2009 Information Literacy Test (ILT) results. The ILT is a multiple choice test delivered on a web platform (Ury et al. 258). The questions are vetted by a panel of librarians and assessment professionals and are based upon academic library standards developed by the Association of College and Research Librarians (Association of College and Research Librarians 8-13). The test includes 65 questions incorporating multimedia and is password protected. The Center for Assessment at James Madison University (JMU) provides scores from the JMU server for all students completing the test. Test results provide feedback about students' performance in each of these six areas: knowledge, application, database searching, internet skills, reference, and ethical behaviors (Ury et al. 258).

At Northwest each year, four classes of freshman level English Compostion students and students enrolled in three upper level courses representing the three colleges take the test. The students' scores are compared by year in school and level of instruction. In both 2008 and 2009, areas identified in a list of questions which 50% or more of Northwest students answered incorrectly included the following skills: Recognizing the type and bibliographic elements of a source from a citation and translating that knowledge to the creation of an appropriate database search for the source.

With local levels of service in mind and deficits in Northwest students' understanding of citations, the authors were curious about the types of citation service and instruction offered by other academic libraries. They decided to study undergraduate university and college citation reference service and library instruction practices and materials in the region surrounding northwest Missouri.

Methodology

The authors chose to survey librarians in charge of instruction from four-year undergraduate public and private university and college academic in Missouri and eight surrounding states: Arkansas, Iowa, Illinois, Kansas, Kentucky, Nebraska, Oklahoma, and Tennessee. Each public institution Web site was identified through the state higher education commission or board of regents Web site (see table 3).

Table 3
State Higher Education Web Sites

Title	URL
Arkansas Department of Higher Education	http://www.adhe.edu/Pages/home.aspx
Board of Regents State of Iowa	http://www2.state.ia.us/regents/
Illinois Board of Higher Education	http://www.ibhe.state.il.us/
Kansas Board of Regents	http://www.kansasregents.org/
Kentucky Council on Postsecondary Education	http://cpe.ky.gov/
Missouri Department of Higher Education	http://www.dhe.mo.gov/index.shtml
Nebraska's Coordinating Commission for Postsecondary Education	http://www.ccpe.state.ne.us/PublicDoc/CCPE/default.asp
Oklahoma State Regents for Higher Education	http://www.okhighered.org/
Tennessee Higher Education Commission	http://www.tennessee.gov/thec/

A list of all the libraries, organized by state, was created. We located each library Web site and searched for the name and e-mail address of the head of library instruction or reference. If we couldn't identify someone in either of those positions, we used the name and e-mail address of the library director. For those libraries that didn't list personnel, we sometimes consulted the *American Library Directory*. After deleting entries for libraries where the Web sites were under construction and couldn't be viewed and e-mail addresses that were concealed to prevent spam and couldn't be found in the *American Library Directory*, the list of libraries to be surveyed included 83 public and 149 private academic libraries, for a total of 232 academic undergraduate university and college libraries.

A survey was constructed that included all of the ways in which Owens librarians deliver citation reference and instruction: including one-on-one interactions in the reference area, in offices, and

by appointment; library instruction classes; online tutorials and Web pages; and courseware. The survey is reproduced below (see fig. 1):

1. Do you work for a public or private institution?

   ○ Public
   ○ Private

2. What is the FTE at your institution?

   ○ Less than 2,500
   ○ 2,500 to 5,000
   ○ 5,001 to 7,500
   ○ 7,501 to 10,000
   ○ Over 10,000

3. What percentage of your reference questions are citation questions?

   ○ 1% to 10%
   ○ 11% to 20%
   ○ 21% to 30%
   ○ 31% to 40%
   ○ 41% to 50%
   ○ More than 50%

4. Does your library provide Web pages that include citation examples?

   ○ Yes
   ○ No

5. Does your library provide online tutorials that teach students how to cite sources?

   ○ Yes
   ○ No

6. Do librarians at your institution teach students how to cite sources during library instruction classes?

   ○ Yes
   ○ No

7. Do librarians at your institution provide online citation instruction and assistance via courseware such as e-Companion, Blackboard or WebCT?

   ○ Yes
   ○ No

8. Do librarians at your institution provide one-on-one appointments for students to help them learn to create citations and references?

   ○ Yes
   ○ No

9. Your comments about citation instruction and reference service are encouraged:

   [   ]

   [Reset]   [Submit]

Fig. 1. Survey sent by e-mail to 232 academic libraries in eight states.

There were some initial problems with respondents accessing the survey. When research personnel on the Northwest campus first sent out the survey, it was mistakenly encoded to

require access with a username and password. Because the e-mail included an introductory message with contact information, several respondents e-mailed us and we quickly asked that a new message, without the encoding, be sent (see fig. 2).
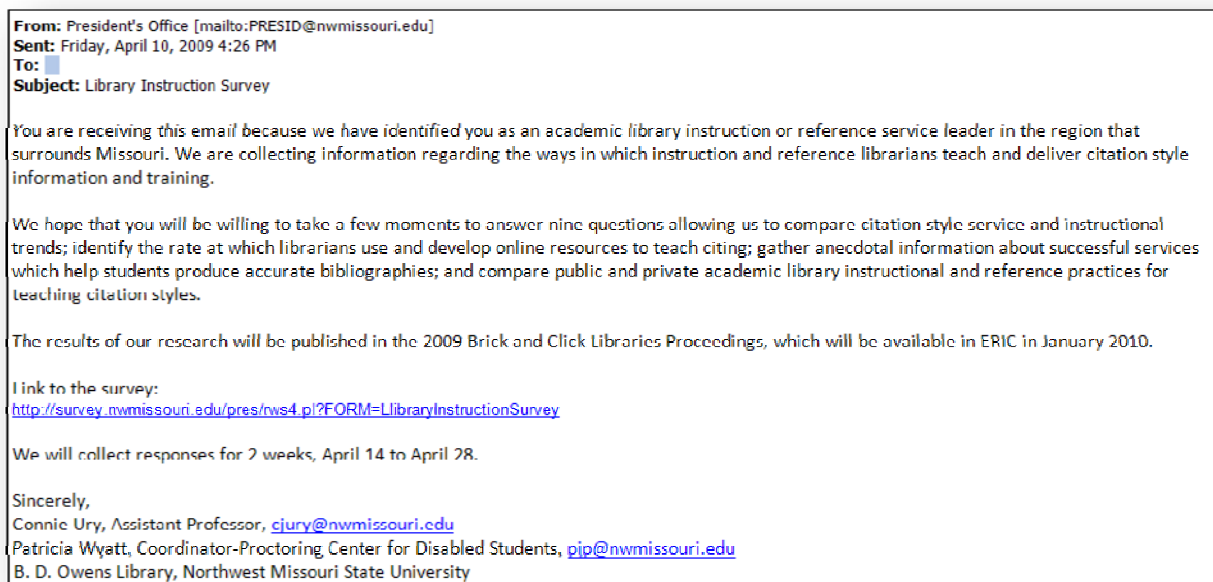
Fig. 2. E-mail sent to survey population.

The response rate to our e-mail survey, as shown in table 3, was 38%. Librarians are comfortable with using the Internet and e-mail, and the ease of answering a survey online without having to bother to mail a paper survey back to us resulted in a high return rate (see table 4).

Table 4
Response Rate to E-mail Survey

Libraries Surveyed	Respondents	Response Rate
All Academic Libraries = 232	89	38%
Private Academic Libraries = 149	55	37%
Public Academic Libraries = 83	34	41%

Results

In question one, the librarians surveyed were asked if their institution was public or private. Responses are shown in table 4 above. A total of 89 libraries responded (55 private and 34 public institutions).

The next query asked the size of the institution where the librarians worked. The breakdown for all academic, public, and private institutions is shown in figs. through through five below. The public academic institutions tended to be larger (45% had over 10,000 FTE), the private academic institutions were often smaller (78% had less than 2,500 FTE) (see table 5).
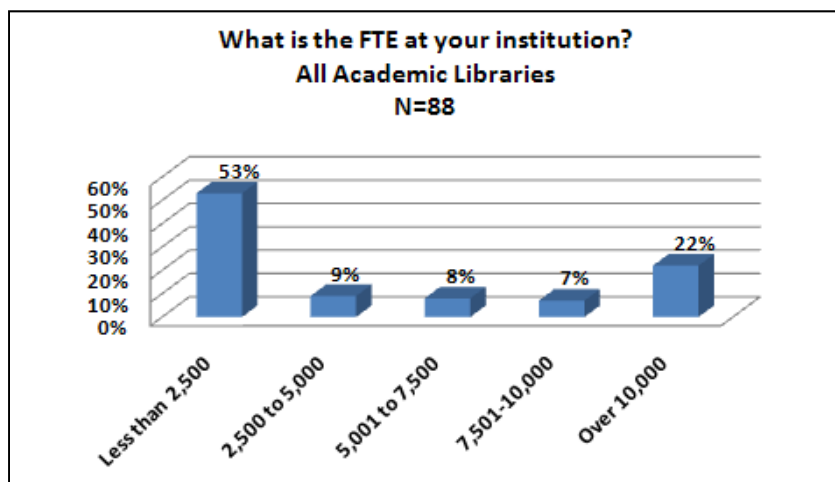
Fig. 3. All academic libraries sorted by FTE of institutions.
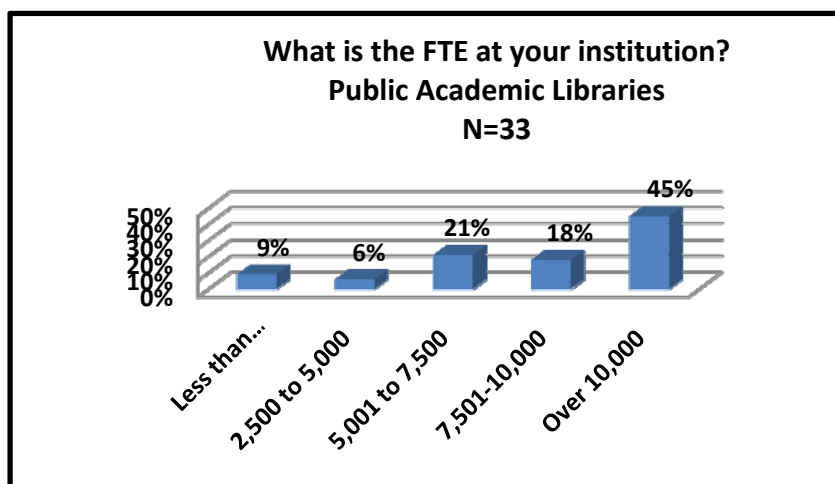
Fig. 4. Public academic libraries sorted by FTE of institutions.
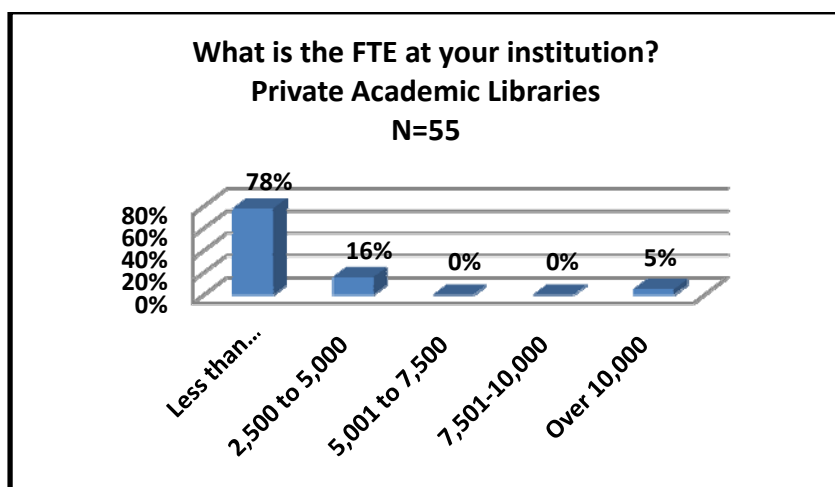
Fig. 5. Private academic libraries sorted by FTE of institutions.

In question three, librarians were asked "What percentage of your reference questions are citation questions?" The majority of both public and private libraries reported that 1 to 10% of the questions they answered were citation questions (see figs. 6-8).
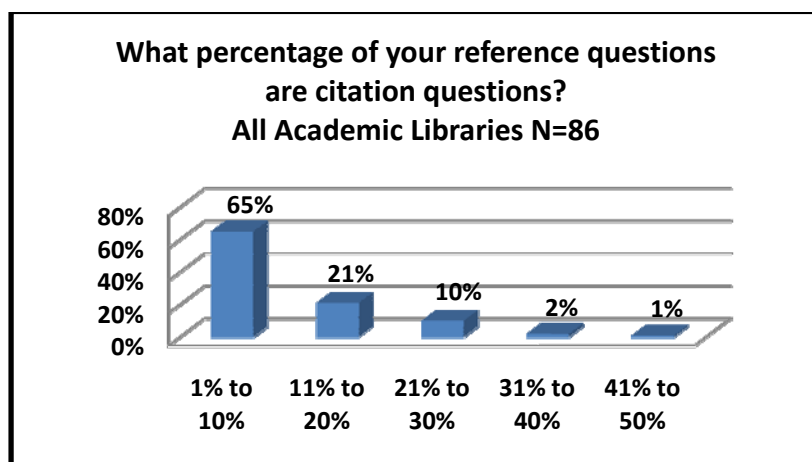
Fig. 6. All academic libraries, percent of reference questions that are citation questions.
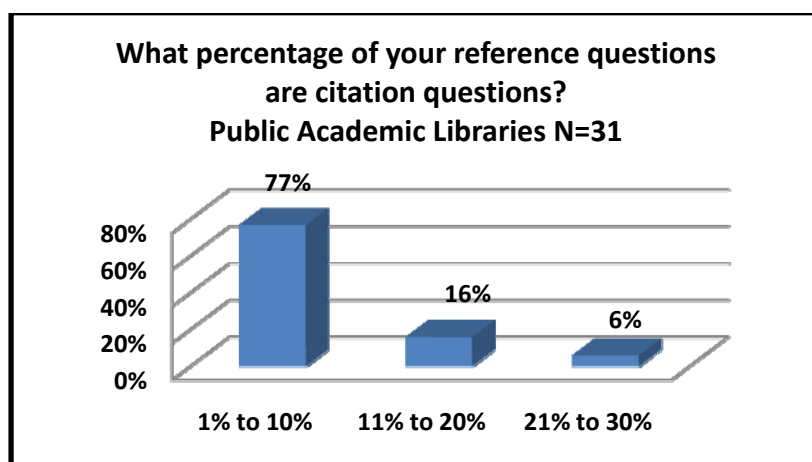
Fig. 7. Public academic libraries, percent of reference questions that are citation questions.
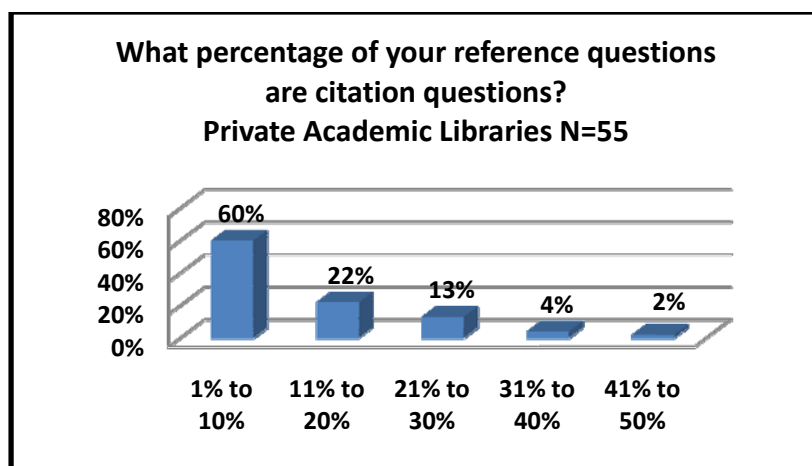
Fig. 8. Private academic libraries, percent of reference questions that are citation questions

Question four, "Does your library provide Web pages that include citation examples?" was answered by 34 public and 55 private academic libraries. Of the 34 public institutions, 70% responded that they offered online assistance through venues such as Web pages and 69% of the private institutions responded that they also offered similar assistance (see figs. 9-10).
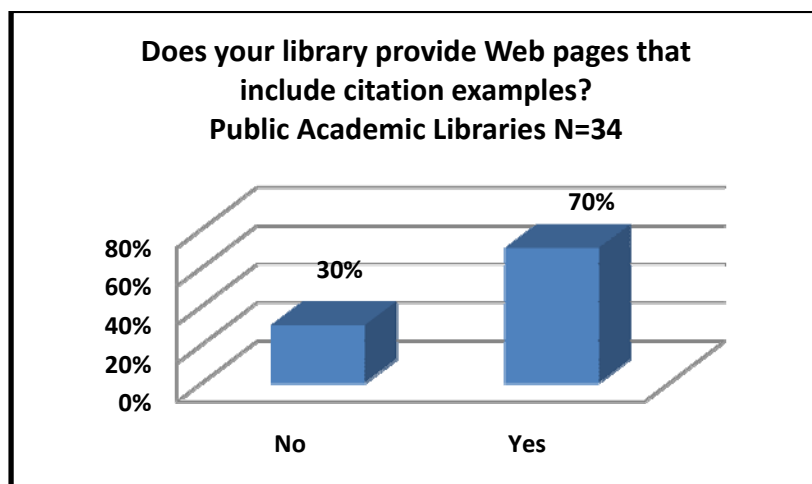
Fig. 9. Question 4, public academic libraries.
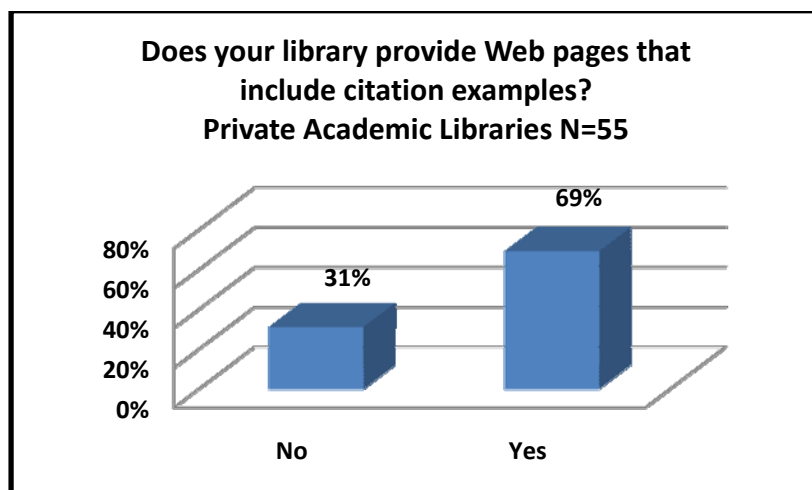
Fig. 10. Question 4, private academic libraries.

All 89 institutions responded to Question five, "Does your library provide online tutorials that teach students how to cite sources?" Seventy-one percent of the public institutions and 75% of private institutions do not provide tutorials that teach students how to cite sources (see figs. 11-12).
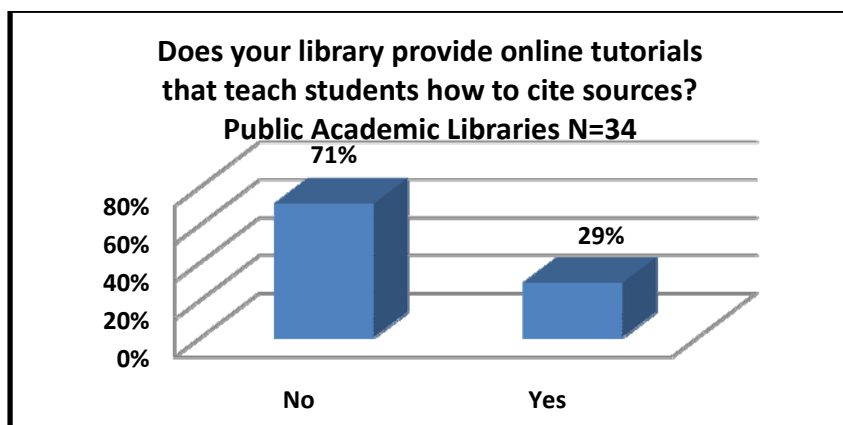
Fig. 11. Question 5, public academic libraries.
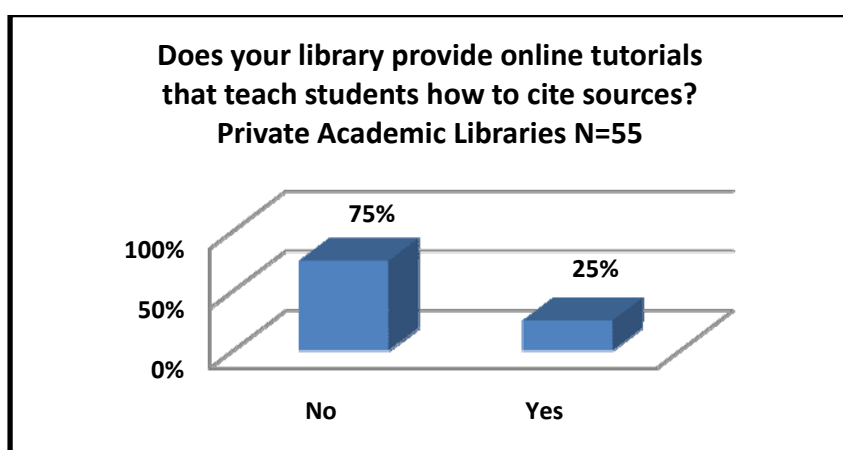
Fig. 12. Question 5, private academic libraries.

Question 6 of the survey inquired, "Do Librarians at your institution teach students how to cite sources during library instruction classes?" Public institutions responded that 65% taught how to cite sources, as did 64% of private institutions (see figs. 13-14).
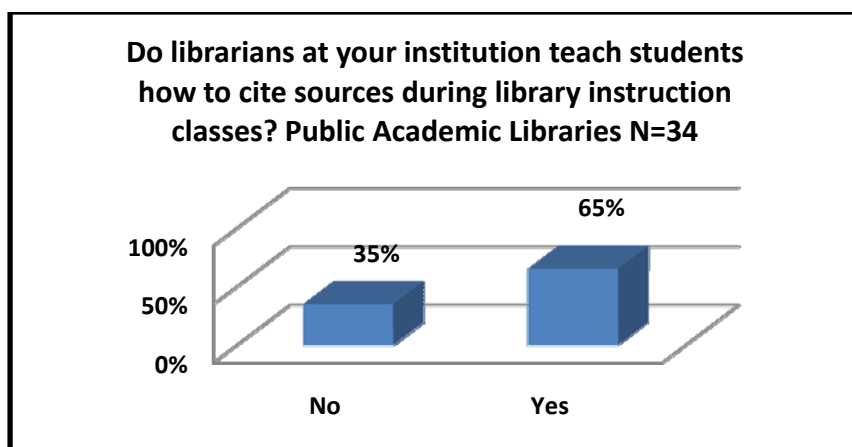
Fig. 13. Question 6, public academic libraries.

Do librarians at your institution teach students how to cite sources during library instruction classes? Private Academic Libraries N=55

100%
50%
0%

36% No

64% Yes
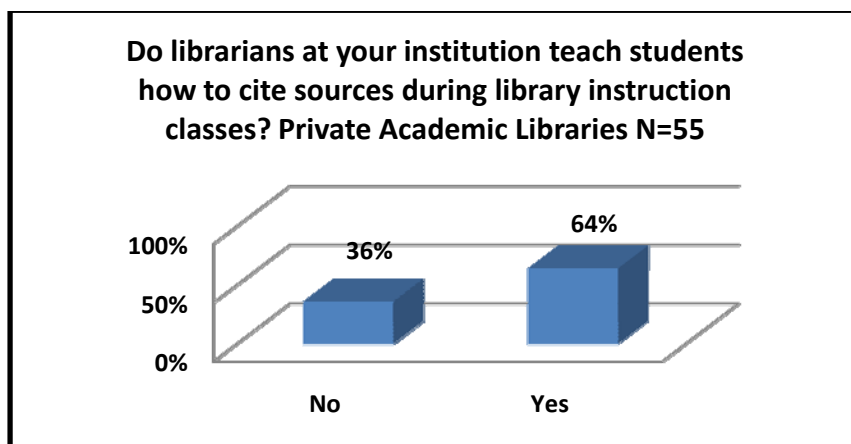
Fig. 14. Question 6, private academic libraries.

When institutions were questioned about whether librarians provide online citation instruction and assistance via courseware, public institutions responded that only 9% offered assistance in this way and 18% of private institutions, double the number of public institutions, provided assistance in this way (see figs. 15-16).

Do librarians at your institution provide online citation instruction and assistance sources via courseware such as e-Companion, Blackboard or WebCT? Public Academic Libraries N=34

100%
50%
0%

91% No

9% Yes
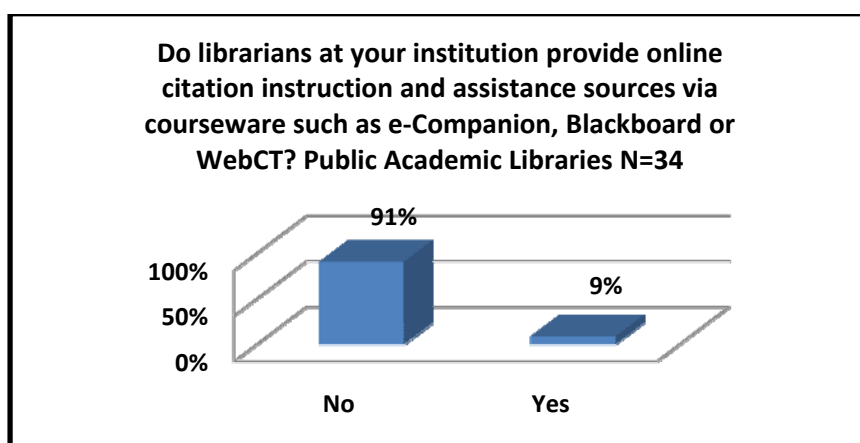
Fig. 15. Question 7, public academic libraries.

Do librarians at your institution provide online citation instruction and assistance sources via courseware such as e-Companion, Blackboard or WebCT? Private Academic Libraries N=55

100%
50%
0%

82% No

18% Yes
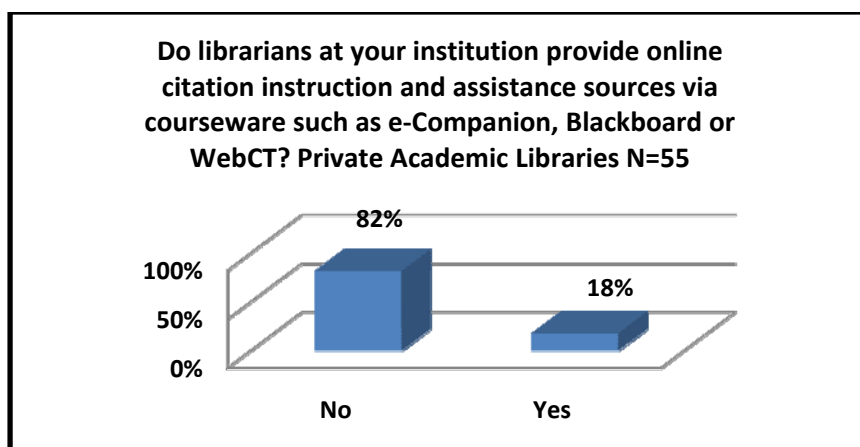
Fig. 16. Question 7, private academic libraries.

In Question 8, "Do Librarians at your institution provide one-on-one appointments with students to help them learn to create citations and references?" public and private institutions provided the following responses: Public institutions reported that 68% offered one-on-one appointments and private institutions responded that 80% provided individual appointments for citation assistance (see figs. 17-18).
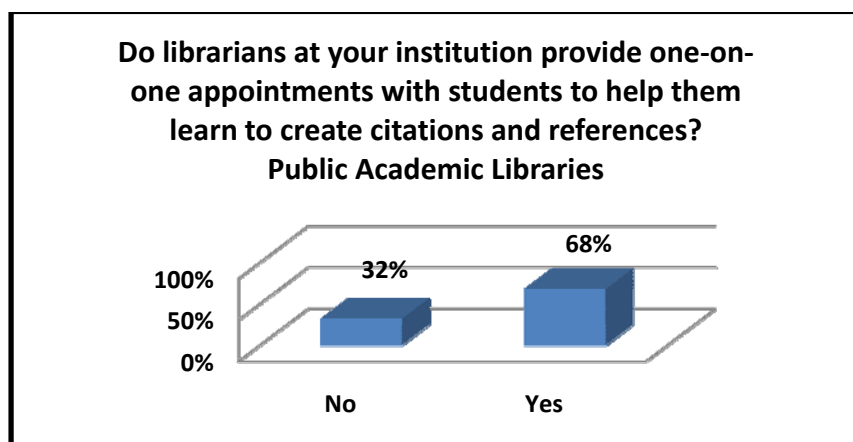
Fig. 17. Question 8, public academic libraries.
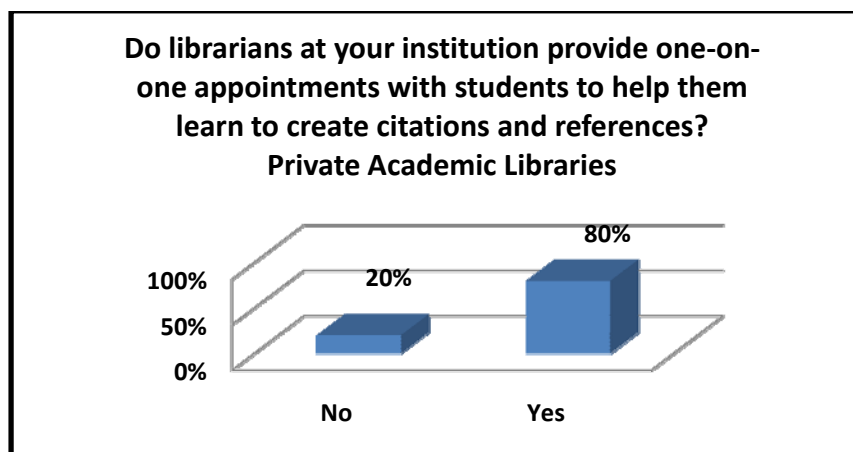
Fig. 18. Question 8, public academic libraries.

The final question provided an opportunity for respondents to add comments about citation instruction and reference service. Forty-three responses were received. The authors grouped them by similar subjects, as depicted in table 5 below:

Table 5
Comments Submitted by Respondents to Citation Survey

Comments	# of Librarians making the comment[a]	Percent of Librarians making the comment
Subscribe to, recommend, show students how to use citation programs	11	12%
We have handouts, examples & tutorials online	8	9%
Demonstrates citing during library instruction	8	9%
Professors provide the instruction	6	7%
Provides reference help with citations	6	7%
The Writing Center/Student Success Center teaches citing	5	6%
Relies on database citations	4	4%
Uses other libraries citation pages	4	4%
Offers workshops for citations	3	3%
You didn't ask us if we link to tutorials created outside this library. We do.	2	2%
Shows students the appropriate style manual	2	2%
We don't help with citations because students are just trying to get us to do their work	1	1%
We think there is a direct relationship between citation instruction and reduced plagiarism	1	1%
We are developing a how and when to cite module for a one credit university academic skills class	1	1%
Creates online citing guides	1	1%

[a]N=43 respondents. Some respondents submitted more than one comment.

Discussion

The 38% return rate was well above the 20% acceptable return rate. Both private academic libraries (37% return rate) and public academic libraries (41% return rate) responded well to the survey (see table 3).

The differentials in FTEs between public and private institutions were to be expected (see figs. 3-5). Many private colleges are small institutions with high tuition, while publicly funded colleges/universities are often larger with lower tuition due to government funding (Arenson).

The majority of academic librarians reported that 1 to 10% of their total reference questions are citation questions. Seventy-seven percent of public academic librarians report that 1 to 10% of their reference questions are citation queries, while 60% of private academic librarians estimate the same level of citation service (see figs. 7-8). These numbers confirm Owens Librarians' intuition that they are answering a high level of citation questions at 21%.

Seventy percent of the public and 69% of the private academic librarians indicated that their libraries provide Web pages that include citation examples. These results indicate that this practice is well established in academic libraries in the nine state region surveyed (see figs. 9-10). Almost three-fourths of the academic libraries recognize the need for students to see examples of citations. In retrospect, it would have been more helpful to ask if these citation examples were for online/electronic, print, or all types of resources.

Only 29% of public and 25% of private academic librarians have created online tutorials to teach students how to cite sources (see figs. 11-12). This is one of the few areas in which there was little participation by the librarians surveyed. When contrasted with the number of libraries providing sample citations (above), this was a surprising finding.

Nearly two-thirds of all librarians surveyed teach students to cite sources during library instruction (see figs. 13-14). These librarians support Kessler and Van Ullen's call for librarians to teach citing in library instruction and the Parker-Gibson's discussion of the importance of librarians' role in the development of citation skills.

Courseware is rarely used for citation instruction (see figs. 15-16). Only 9% of public and 18% of private academic librarians use courseware to provide citation instruction. It would be interesting to know if the areas where this instruction is provided dovetail with online only courses.

One-on-one citing appointments with students are provided by librarians at 68% of public and 80% of private academic libraries (see figs. 17-18). The popularity of this service demonstrates librarians' commitment to making citation help a priority.

The comments highlighted several areas of interest. Eleven librarians (12%) mentioned subscribing to and/or teaching students to use citation software/programs. Eight (9%) of the librarians discussed using print and/or online handouts and the presentation of citing examples during library instruction respectively (see table 4). The comments most often repeated provide ideas for questions in future surveys.

Suggestions for Future Research

While this survey gathered initial information regarding the type of citation reference and instruction service provided in Midwestern public and private academic four year libraries, it also identified areas for further study:

- Do online examples of citations provided by librarians include citation examples for online/electronic, print, or all types of sources?
- Why do or don't librarians provide online tutorials about citing?
- If librarians use courseware for teaching citation skills, what type of classes are targeted? Online? On-ground? Blended?
- Does the use of citation software/programs teach students correct citation format?

Conclusion

The authors discovered that Northwest's level of citation questions was above average among academic libraries in the nine state surrounding region. With an average of 21% of their questions classified as citing queries, they were comparable to only 6% of public and 13% of private academic libraries (see figs. 7 and 8). Northwest is in line with the majority of the academic libraries surveyed that provide Web pages with citation examples, teach citing during library instruction, and provide one-on-one citing appointments. Northwest provides cutting edge services that are only embraced by a minority of the academic libraries surveyed in the areas of online citing tutorials and teaching citation skills via courseware. This survey allowed librarians at Northwest to benchmark our citation reference and instruction services with other academic libraries at four year institutions in the nine state region and provided information for future research about this subject.

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Mixing It Up:
Finding New Ways to Promote Library Services and Resources

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Abstract

In 2007, librarians at IUPUI University Library began work on finding new ways to promote our library's resources and services to students. We developed a video that was shown during new student orientation, linked to our homepage and posted on YouTube. Since we found that a great number of our students use library computers to access their MySpace and Facebook accounts, we developed a presence in both of these social networking utilities.   Additionally, we use our Facebook account to advertise our Undergraduate Diversity Fellowship. Librarians have used photo albums created using Flickr to give students a "virtual tour" when it was not possible to bring the students to the library for instruction. In this lightning round presentation, Mindy Cooper, a reference and instruction librarian, will discuss her experiences in using these resources and the impact they've made in her library instruction.

New Acquisitions Retrieval System (*NARS*) - a New Tool to Promote Library Collection

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Abstract

This article describes the *New Acquisitions Retrieval System* (*NARS*) implemented at the University of Central Missouri (UCM) Library. To keep patrons informed on library collection updates, more and more libraries have added new acquisitions lists to their websites. However, most of those lists are in plain html format and are not easy for patrons to navigate—especially when there are a large amount of new purchases. It is also time-consuming and labor-consuming to manually update the list. *NARS* provides an efficient way to present library new acquisitions to patrons. Its search function allows patrons to retrieve new acquisitions either through selecting the subject area(s) or through refining the search by title, author, call number, and acquisition date. The *PHP* and *MYSQL* based content management structure allows the system administrator to update the data easily.

Another important feature of *NARS* is its Really Simple Syndication (RSS) function. *NARS* not only provides RSS feed(s), but also allows patrons to create their own feeds. By subscribing to RSS feed(s), patrons automatically receive the new acquisitions list(s) through RSS feed readers. In addition, *NARS* RSS feeds cooperate well with other web2.0 tools such as *LibGuides*.

Background

University of Central Missouri (UCM) is a four-year public institution located in Warrensburg, Missouri. The university has about 11,000 graduate and undergraduate students and more than 400 faculty members. As the only library of UCM, James C. Kirkpatrick Library provides resources and services to support university educational programs, faculty and student research, and university social and cultural activities. By the end of fiscal year 2008, UCM library had 907,297 volumes of books, government documents, journals, and electronic materials. The library collection updates frequently. The statistics show that from May 2008 to May 2009 the library has 839 new items cataloged each month in average. See table 1 for statistics of new items cataloged each month from May 2008 to May 2009.

Table 1
Statistics of New Items Cataloged from May 2008 to May 2009

Date	Number of new items cataloged
May 2008	1045
June 2008	1016
July 2008	841
August 2008	335
September 2008	372
October 2008	775
November 2008	883
December 2008	741
January 2009	1079
February 2009	869
March 2009	647
April 2009	732
May 2009	1570
AVERAGE	839

Traditionally, the library uses emails to notify library employees and users on collection update. At the beginning of each month, a list of new acquisitions exported from the Integrated Library System is emailed to all librarians. Librarians forward the list to faculty members in different departments to share the information on campus. There are a couple of drawbacks. First, the email list usually includes around 1000 items. It is not easy for librarians to filter the items in their subject areas. Many librarians export the list to a excel file for filtering and sorting. Second, faculty members only receive the list of new acquisitions in a specific subject area, which ignores the possibility that there might be an interest in browsing titles in other areas. Therefore, email is not the best way to market the library collection.

To inform both librarians and users on library collection update in a timely way, one solution is to share the new acquisitions list online. A large number of libraries have a list of new acquisitions posted on their websites. The majority of the lists are implemented in HTML/PDF, *Perl*, and *PHP*. HTML/PDF is the easiest implementation method. Many libraries' lists are in HTML or PDF format, such as the list of Northeastern Junior College Library. The drawback of HTML or PDF files is that they are static files and, therefore, lack user interaction. Those files are not easily navigated, especially when there are a large amount of new purchases. In addition, it is time-consuming and labor-intensive to manually update a HTML/PDF list periodically. Some libraries use *Perl* to create new acquisitions lists. One example is Hong Kong University of Science and Technology Library's new acquisitions list. This list provides a simple filter function for users to narrow down the new acquisitions according to purchase week and location. The third way is to use *PHP*, such as Williams College Libraries' new acquisitions list. Unlike HTML and PDF, both *Perl* and *PHP* have the functionality to create dynamic pages for user interaction and to separate the web content from the presentation, which is more secure and easier to maintain. Although both *Perl* and *PHP* are server-side scripting languages, *PHP* has several advantages compared to *Perl* in terms of web development. First, *PHP* has built-in

database functionalities, especially *MySQL* functionalities while *Perl* does not. Second, *PHP* code can be easily embedded into HTML pages, which makes *PHP* applications simple to code, update, and test. Perl usually uses Print statements to generate HTML codes. Third, *PHP* scripts run faster than Perl CGI scripts. After comparing the pros and cons of different implementation choices, UCM library decided to create a *PHP* based *New Acquisition Retrieval System* (*NARS*).

System Environment

NARS is implemented on UCM library web server which is running Windows Server 2003 and Apache 2.2. The system is written in *PHP* 5.2.6 and uses *MySQL* 5.0, a very popularly used open source relational database management system which is commonly paired with *PHP*, as the backend database. To manage *MySQL* database through the web interface, PhpMyadmin 2.11.7.1, a widely-used open source *MySQL* management tool, is installed on the library web server.

NARS Details

The *NARS* was developed and started running in November 2008. The purpose of the system is to share library collection update with users online. It provides a simple search engine for users to retrieve the desired items that have been added to the library collection recently. There are two search interfaces: simple search (see fig. 1) and advanced search (see fig. 2). The simple search interface allows users to define the subject area(s) and the acquisition date. There are 225 subject areas categorized according to Library of Congress Classification. On the advanced search interface, besides the acquisition date users can do a keyword search in call number, title, and author fields. The system also allows wildcard search.
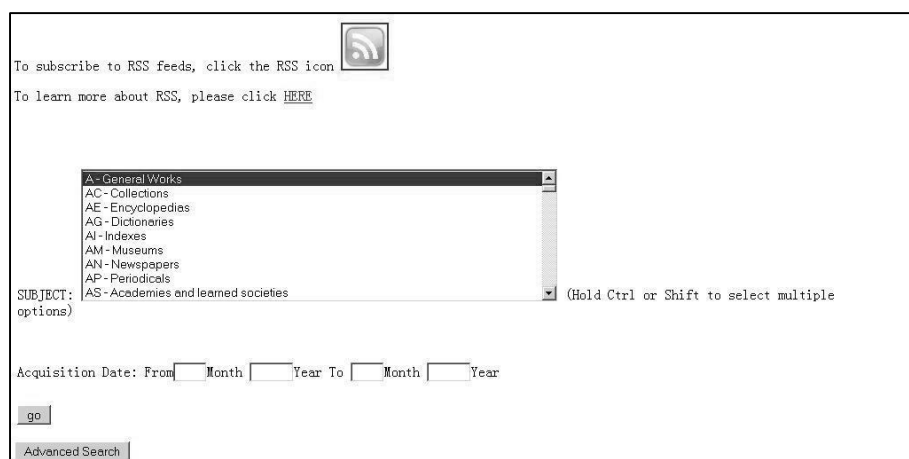
Fig. 1. NARS simple search interface.

Fig. 2. NARS advanced search interface.

The results page (see fig. 3) displays title, author, call number, link to catalog, subject, and acquisition date. By default results are sorted by title alphabetically. Users can rearrange the results by author, call number, subject, and acquisition date. The "Export to Excel" button on the search results page allows users to export results to a excel file.

Fig. 3. NARS search results page.
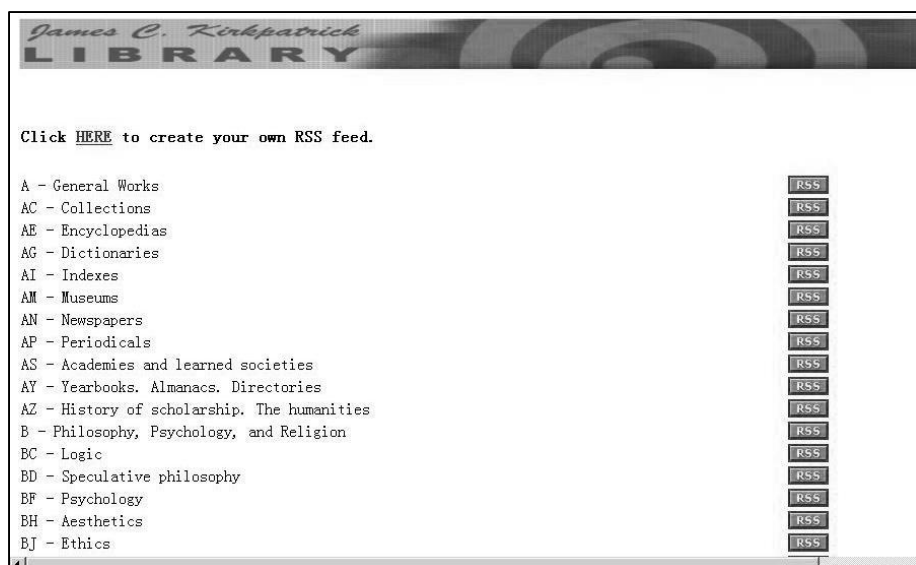
Fig. 4. NARS RSS feeds.

All new acquisitions data are saved in a *MySQL* database which has two tables: subcallnum and items_faculty. The subcallnum table stores the names of the main classes of the Library of Congress Classification and their corresponding letters. Those letters and names are displayed on the simple search interface and RSS feeds page. The items_faculty table stores all the new acquired items information which is exported from Innovative Millennium order records. The information includes the item's title, author, call number, OCLC number, and catalog date. The database keeps the most recent three months new acquisitions data and is updated on a monthly basis by the system administrator. See fig. 5 for the relationship among Millennium order records, *MySQL* database, and *NARS* web interfaces.
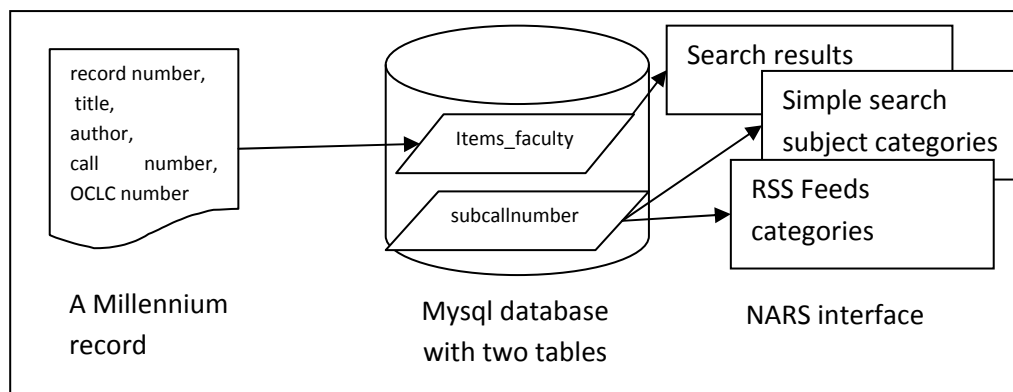
Fig. 5. System structure.

RSS

Another important feature of *NARS* is its RSS feeds function. RSS stands for "really simple syndication" or "really simply syndication" or "rich site summary". The concept of RSS emerged in 1997. It is a XML based technology for delivering regularly changed web content in real time by categorizing information themes. The current version of RSS is 2.0. A RSS document is called a RSS feed. The applications used to read RSS feeds are called RSS

aggregators or RSS feeds readers. Some of the most popular readers/aggregators are *Google Reader*, *NetNewsWire*, *Cyndicate*, etc. By subscribing to RSS feeds, users receive the immediate notification when some new information is added to an RSS feed.

The *NARS* RSS feeds are based on RSS 2.0 structure. See fig. 6 for an excerpt of a *NARS* RSS feed document. Each feed contains several items and each item contains three required elements: title which displays the title of the item, link which displays the link to the library catalog, and description which displays the author name and the call number. In *NARS*, there are 225 feeds categorized by Library of Congress Classification. Users can either subscribe to the existing 255 feeds or create their own feeds by grouping the existing feeds.

```
<?xml version="1.0" encoding="UTF-8"?>
  <rss version="2.0">
    <channel>
        <title>Russia. Soviet Union. Former Soviet Republics. Poland</title>
        <link>http://library.ucmo.edu/records/index.php</link>
        <description>new acquisitions</description>
        <language>EN</language>
        <image>
            <title></title>
            <url></url>
            <link></link>
            <width></width>
            <height></height>
        </image>
        <item>
            <title>Russian and Soviet history : from the Time of Troubles to
                   th...
            </title>
            <link>http://quest.missouri.edu/search/o?SEARCH=167764137</link>
            <description>AUTHOR: ...;      CALL NUMBER: DK40 .R8495
                         2008
            </description>
        </item>
        <item>
            <title>Mission to Moscow, by Joseph E. Davies. A record of
                   confiden...
            </title>
            <link>http://quest.missouri.edu/search/o?SEARCH=3405664</link>
            <description>AUTHOR: Davies, Joseph Edward....;      CALL NUMBER:
                         DK267 .D32 1943c
            </description>
            <item>

                    ...

        </channel>
</rss>
```

Fig. 6. An excerpt of NARS RSS feed.

Many Library 2.0 tools are able to embed the RSS feeds into web pages to display feeds content. One example is *LibGuide*, a web content management tool that provides a way to create and present information online using Web 2.0 applications. UCM library has been using *LibGuide* as an outreach tool to post subject guides, create finding paths, and promote the library collection. On the UCM library website, each subject area has a separate LibGuide page created and maintained by a subject specialist. To provide an easy access to new aspects of the library collection, most of UCM *LibGuide* pages have *NARS* RSS feeds embedded by pasting the *NARS* RSS feed link to the *LibGuide* page. See fig. 7 for a UCM *LibGuide* page with a list of new acquisitions in Nursing. Instead of displaying all the feeds information, the list only shows the title which is a link to the library catalog. The View RSS Feed link on the bottom of the page leads to a RSS feed reader page.
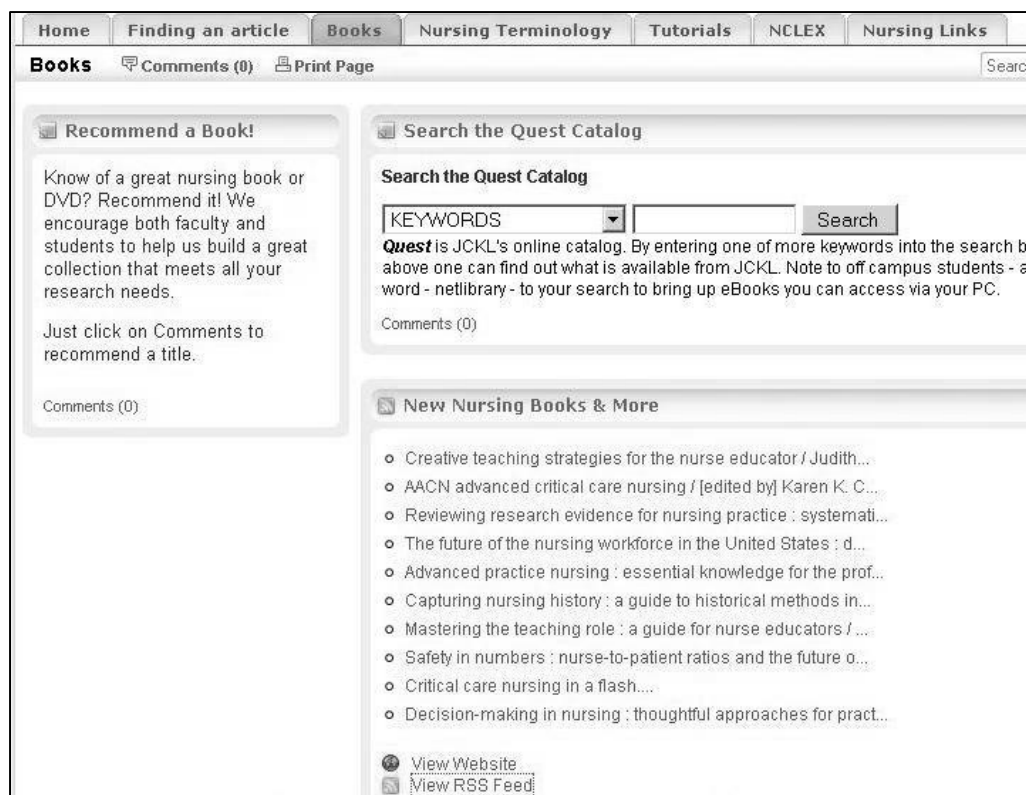
Fig. 7. A LibGuide page.

Future Improvements

Now that *NARS* has been running for more than six months, we have realized that there are still some improvements that could be made to build a more user friendly system. First, book covers can be displayed on the search result page beside the title, author, call number, link to catalog, subject, and acquisition date. The book cover images can be retrieved from the Synthetic Solutions website by specifying the ISBN. This is a function that Cambridge Libraries and Galleries have implemented on their website. By displaying book covers, the system will provide more visual connection to the real item and present a more attractive interface to users.

Another possible improvement is to solve the ampersand sign problem in the system. Some books have the "&" sign in the title field. When users open a RSS feed with such a book title in Internet Explorer, they get an error message saying "Whitespace is not allowed at this location". One solution is to replace "&" with "and". This replacement function can be implemented in the next version.

Because the records exported from Millennium are order records, sometimes there are multiple items records attached to the same order record. Therefore, there are duplicate titles showing in *NARS* search results. The current solution is to delete the duplicate records in the database using SQL after importing the Millennium records to the database. A better solution is to code the delete function in the importing function to combine the importing and deleting process.

Conclusions

NARS has been running on the UCM library website for more than six months. There has been a lot of positive feedback. Serving as an outreach and marketing tool which promotes the library collection to UCM students, faculty, and community users, *NARS* provides an efficient way to locate new additions to the library collection and has attracted more users to visit the library website. Although *NARS* has been a success so far, there is still room to improve both the system interface and its functionalities. The UCM library has been considering developing the next version of *NARS* to expose the library collection to patrons in a more user friendly way.

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When the Money Runs Out:
What Do Technical Services Staff Do?

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Abstract

Library acquisitions budgets are frozen or spent and it is several months until the beginning of a new fiscal year. What do you do with the talented technical services staff members who spend most of their time ordering, cataloging, and processing new materials? There are obvious tasks such as clearing backlogs or doing cleanup projects that never seem to get done. However, this is an opportunity to enhance skills and explore new and better ways to improve access to library materials. Ways of creating a positive environment that encourages technical services staff to embrace the situation as an opportunity will be explored.

Excel-erate Your Metadata: Tips and Tricks for Using *Excel* to Generate Metadata for the Non-Programmer

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Abstract

The Mansfield Library (at the University of Montana in Missoula) continues to add digital collections to the library, using the *CONTENTdm* platform. Extensive use of *Microsoft Excel*® has simplified metadata generation and the creation of tab-delimited text files for uploading metadata, object structure and filename information into *CONTENTdm*.

Two individual projects prompted the investigation into using *Excel* to simplify metadata creation. Each had different requirements, but both benefited from learning some simple formatting tricks available in *Excel*.

In the first project a number of Forest Service publications were scanned and saved as .pdf files. Most of these items already had descriptive records in the library's catalog. Rather than keying in the metadata for individual titles by hand, a report was generated which pulled the information from specific MARC tags for each of the titles and placed it in an *Excel* spreadsheet. Before that information could be imported into *CONTENTdm* it had to be cleaned up and crossswalked to Dublin Core. Special characters, such as delimiters, and other formatting did not transfer to the spreadsheet cleanly. *Excel* formulas such as CLEAN and CONCATENATE can be used to automate the process. A macro was created to then change the headers from the MARC tags to the DC elements. A few manual additions were then made and the spreadsheet was saved as a .txt file and uploaded into *CONTENTdm*.

The second project involved scanning books and creating a structure that allowed a user to view each page in the correct order. An *Excel* spreadsheet was used to define the structure of the digital object and to create both object-level and item-level metadata. The MID and CONCATENATE formulas were used to extract the page number information from the file name for insertion into the title field of the item-level metadata. This greatly automated the process of providing page number information for the user. Additional *Excel* features such as Fill, Find/Replace, and Paste Special were used to more easily make changes to the spreadsheet formatting so it could then be saved as a .txt file and imported into *CONTENTdm*.

All of the tips and tricks discussed in this paper are straightforward and learnable by the basic/intermediate *Excel* user. While other techniques may accomplish the same results, using preprogrammed features in *Excel* makes it possible to generate a large amount of metadata without a lot of manual effort using tools already available to most libraries and not requiring the experience of a computer programmer.

Background

The Maureen and Mansfield Library at the University of Montana in Missoula (UM) is a medium-sized academic library which shares an online catalog with a consortium of Montana libraries. In addition to the library's print, media, and serial holdings, digital collections are being added to the library, using the *CONTENTdm* platform. The digital productions team consists of two librarians and student employees. The Digital Projects Librarian and the Metadata and Digital Production Librarian work closely with subject librarians, archivists, and the Technology and Systems Department when planning digital projects. The actual process of scanning, creation of metadata, and assisting with the loading of files into *CONTENTdm* falls to the student employees and the Metadata Librarian in addition to the Digital Projects Librarian.

CONTENTdm is digital collection management software that provides a platform for storage, management, and presentation of digital collections on the World Wide Web. It also has a module which allows for the generation of transcripts using optical character recognition (OCR). Creation of transcripts via OCR allows users to search the digital collections by entering keywords. Object structures can be created automatically by *CONTENTdm* using filenames as titles, a generic page number sequencing, or by using the formatting embedded in a spreadsheet. Specifying the object structure allows users to see images displayed in a specific order, like the pages of a book.

Extensive use of *Microsoft Excel*® has simplified metadata generation and the creation of tab-delimited text files for uploading metadata, object structure and filename information into *CONTENTdm*.

The Challenge

The tips and tricks described in this paper were developed as part of an effort to streamline workflows in the digital productions area of the library. Two individual projects prompted the investigation into using *Excel* to simplify metadata creation. Each had different requirements, but both benefited from learning some simple formatting tricks available in *Excel*. All of the procedures explained in this paper work in *Excel 2007*; however, the same functions may be available in other versions.

The first project involved the digitization of about 250 Forest Service publications from the Rocky Mountain and Intermountain Research Stations on topics relevant to western Montana and of greatest potential interest to UM researchers. The physical items were first scanned and then saved as .pdf files. The library's Voyager catalog already contained much of the information essential to the creation of robust metadata for these documents. A plan needed to be devised that would reuse the bibliographic records, eliminating the need to manually reenter data while assuring consistency and accuracy in the production of metadata. The second project (the Mountain Plains project) involved scanning a set of historically significant textual materials about Native Americans in Montana and the mountain plains area of the United States. The material needed to be organized in a manner that allowed the chapter structure of the books to be maintained and each page to be displayed in the correct sequential order through the *CONTENTdm* platform.

Both projects required that the metadata be created in a specific format and saved as a tab-delimited file before it could be loaded into the database. While personnel in the Technology and Systems Services Department could have been asked to write a script of some sort to accomplish these goals, they were involved in many other projects at the time. Finding a solution that would not negatively impact departmental workflows and would also be reusable in future projects was preferred.

Our Solutions

Rather than manually keying in the metadata for individual titles for the Forest Service publications, a report was generated which pulled bibliographic information from specific MARC tags for each of the publications and placed it in an *Excel* spreadsheet (see fig. 1).

Fig. 1. Bibliographic data displayed in an *Excel* spreadsheet. Column headings display MARC tags.

Before that information could be imported into *CONTENTdm*, it had to be cleaned up and crosswalked to Dublin Core. Special characters, such as delimiters, and other formatting did not transfer to the spreadsheet cleanly, and these needed to be corrected prior to saving the information as a tab-delimited text file. Based on suggestions in an article by Strass, the team explored the various formulas and functions in *Excel* to determine if a similar workflow would benefit the current projects. *Excel* formulas such as CLEAN and CONCATENATE, as well as the FIND AND REPLACE, FILL, and PASTE SPECIAL functions were used to automate the data clean-up process (see fig. 2). (For an explanation of formulas and functions available in *Excel* see Walkenbach and "Help for *Excel* 2007.")

Fig. 2. Bibliographic data after running clean-up macros. Column headings now display the Dublin Core elements instead of the MARC tags.

A series of macros was then created to further automate the clean-up of the *Excel* files. File names and descriptions were added and the file was proofread for any formatting errors that were not corrected by running the macros (see fig. 3). Finally the spreadsheet was saved as a tab delimited text file allowing the metadata to be uploaded into *CONTENTdm* along with the .pdf files and transcript files.

Fig. 3. Spreadsheet containing report of bibliographic data after clean-up and manual data editing.

For the Mountain Plains project a metadata template was created using *Excel*. The MID formula in *Excel* was used to extract a page number from each filename and to place it in the title field (see figs. 4 and 5).

Fig. 4. Spreadsheet template, before filenames are imported.

Fig. 5. Spreadsheet template, after filenames are imported.

The compound object structure was completed by filling in the chapter level information in the CDM_LVL_Name column and editing the CDM_LVL numbers as needed. The FILL function was used to copy and paste the information in Row 2 throughout the rest of the spreadsheet. Once completed, the spreadsheet was copied and pasted into a new worksheet using the PASTE SPECIAL function in *Excel* and selecting VALUES ONLY for pasting into the new spreadsheet (see fig. 6). Finally the spreadsheet was saved as a tab delimited text file allowing the metadata to be uploaded into *CONTENTdm* along with the image files and transcript files.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	CDM_LVL	CDM_LVL_	Title	Creator	Contribut	Subject	Coverage	Descriptio	Publisher	Date Origi	Date Digit	Type	Format	Resource	Rights Ma	Contribut	Source	Language	Relation	Digitizatio	Provenan	File Name
2		Survey of	Survey of	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002025		The Unive	Y 4.IN 2/2	En		Digitized using a Bookeye 3 scanner at 400 PPI, 8 bit
3	0	Survey of	Title	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002026		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_000_i.jpg
4	0	Survey of	Verso	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002027		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_000_ii.jpg
5	1	Table of C	Page iii	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002028		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_000_iii.jpg
6	1	Table of C	Page iv	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002029		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_000_iv.jpg
7	1	Table of C	Page v	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002030		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_000_v.jpg
8	1	Hearings -	Page 5295	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002031		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05295.jpg
9	1	Hearings -	Page 5296	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002032		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05296.jpg
10	1	Hearings -	Page 5297	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002033		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05297.jpg
11	1	Hearings -	Page 5298	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002034		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05298.jpg
12	1	Hearings -	Page 5299	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002035		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05299.jpg
13	1	Hearings -	Page 5300	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002036		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05300.jpg
14	1	Hearings -	Page 5301	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002037		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05301.jpg
15	1	Hearings -	Page 5302	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002038		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05302.jpg
16	1	Hearings -	Page 5303	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002039		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05303.jpg
17	1	Hearings -	Page 5304	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002040		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05304.jpg
18	1	Hearings -	Page 5305	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002041		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05305.jpg
19	1	Hearings -	Page 5306	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002042		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05306.jpg
20	1	Hearings -	Page 5307	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002043		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05307.jpg
21	1	Hearings -	Page 5308	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002044		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05308.jpg
22	1	Hearings -	Page 5309	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002045		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05309.jpg
23	1	Hearings -	Page 5310	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002046		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05310.jpg
24	1	Hearings -	Page 5311	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002047		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05311.jpg
25	1	Hearings -	Page 5312	United States. Cong	Indians of	Mountain	United Sta	Washingto	1931	2008	Text	image/jpe	mtg002048		The Unive	Y 4.IN 2/2	En		Digitized using a Boc	cong_14_drv_05312.jpg

Fig. 6 Spreadsheet displaying complete metadata.

Generating the Metadata with *Excel*: Cleaning up Extracted Values and Formatting

Original data was extracted from MARC records in UM's Voyager catalog for the Forest Service project. Before that information could be imported in *CONTENTdm*, the data needed to be crosswalked from MARC to Dublin Core and some of the data needed to be reformatted. *CONTENTdm* does not allow for repeating elements, thus the information from repeatable MARC tags such as Subject needed to have punctuation added to clearly show the end of one subject heading and the beginning of the next. Additionally the data transfer from Voyager to *Excel* included non-printing characters and hidden line breaks. These extra odd characters interfere with loading the metadata into *CONTENTdm* and also had to be edited.

First the FIND AND REPLACE function in *Excel* was used to search for ending punctuation in the columns containing subject and contributor information. This allowed all of the full stops to be replaced with a semi-colon, space, and a line break command. When the reformatted information was merged into one column and was loaded into *CONTENTdm*, each subject heading was separated by a semi-colon and a line-break, making it easier for the user to read. The same procedure was used to remove the extra punctuation that separated the subfield a, b, and c areas within the title field. The FIND AND REPLACE functionality was also utilized to change the column headers from MARC tags to their corresponding Dublin Core element names. The FIND AND REPLACE function can be used across an entire worksheet or it can be selectively applied to parts of the worksheet. Start by selecting the area of the worksheet to

which the function is to be applied and then from the home tab click on the FIND & SELECT button; choose REPLACE from the dropdown menu or use the [CTRL+ H] keystroke combination to open the FIND AND REPLACE dialog box (see fig. 7).
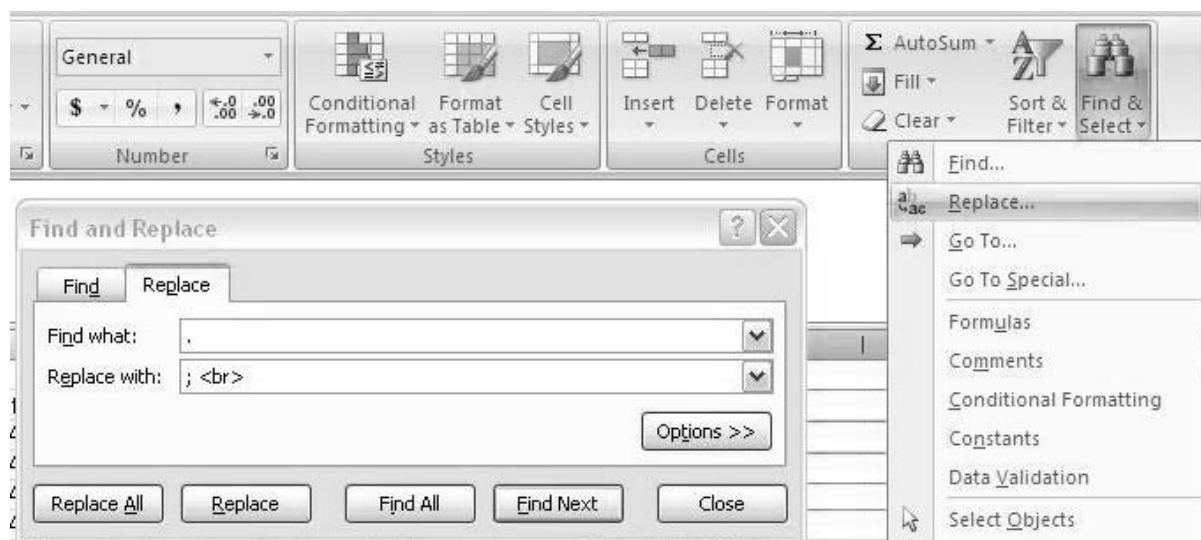
Fig. 7. Screenshot of the FIND AND REPLACE dialog box illustrating replacing a period with a semicolon <br>.

Next a method of merging the contents of the multiple creator, contributor, subject, and other fields was needed. The CONCATENATE function allows two or more strings to be joined together. A maximum of 30 strings can be joined in one operation.

The syntax for the CONCATENATE function is:
=CONCATENATE(text1, text2, ... text_n)
where n is less than or equal to 30.

To apply the CONCATENATE function, insert a new column into the spreadsheet. Right click on column heading and select Insert from the menu. This will insert a new column to the left of the active column. Either enter the formula using the proper syntax or use the Function Arguments window that opens when CONCATENATE is chosen from the text dropdown menu on the Formulas tab (see fig. 8). For this project a single column containing all the information appropriate for the subject element was the final goal so the formula looked like this:

=CONCATENATE(J2,K2,L2,M2)

The FILL command was then used to enter the formula for the rest of rows automatically. The PASTE SPECIAL command was applied to copy the values of the merged cells and paste them over the formula. After completion of the concatenation process, the original columns used in the data merge were deleted.
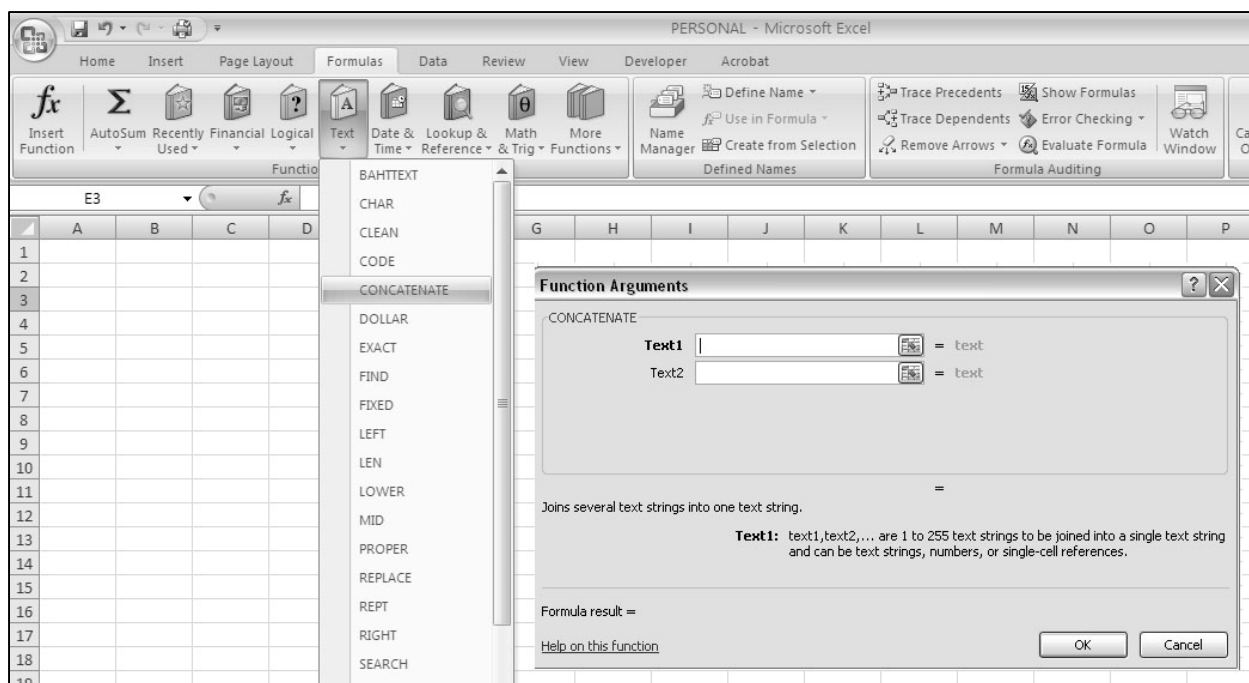
Fig. 8. Screenshot of the CONCATENATE Function Arguments window.

The final challenge in cleaning up the extracted data was to remove all non-printing characters from the entire spreadsheet. Most often the offending characters were in the Title and/or the subject columns; however, they could be anywhere within the spreadsheet. Thus it was necessary to repeat the procedure for each column in the spreadsheet using the CLEAN function in *Excel*. This function removes all nonprintable characters from a string.

The syntax for the CLEAN function is:
=CLEAN(text)

To clean the data, right click on a column heading and select Insert from the menu. This will insert a new column to the left of the selected column. Either enter the formula using the proper syntax or use the Function Arguments window that opens when CLEAN is chosen from the text dropdown menu on the Formulas tab (see fig. 9). As an example, to clean the data in Cell B2, the formula will be:

=CLEAN(B2)

Once again the FILL command was used to enter the formula for the rest of rows automatically and the PASTE SPECIAL command was applied to copy the values of the merged cells and paste them over the formula. The column containing the original data was then deleted. This process was repeated for each column in the spreadsheet.
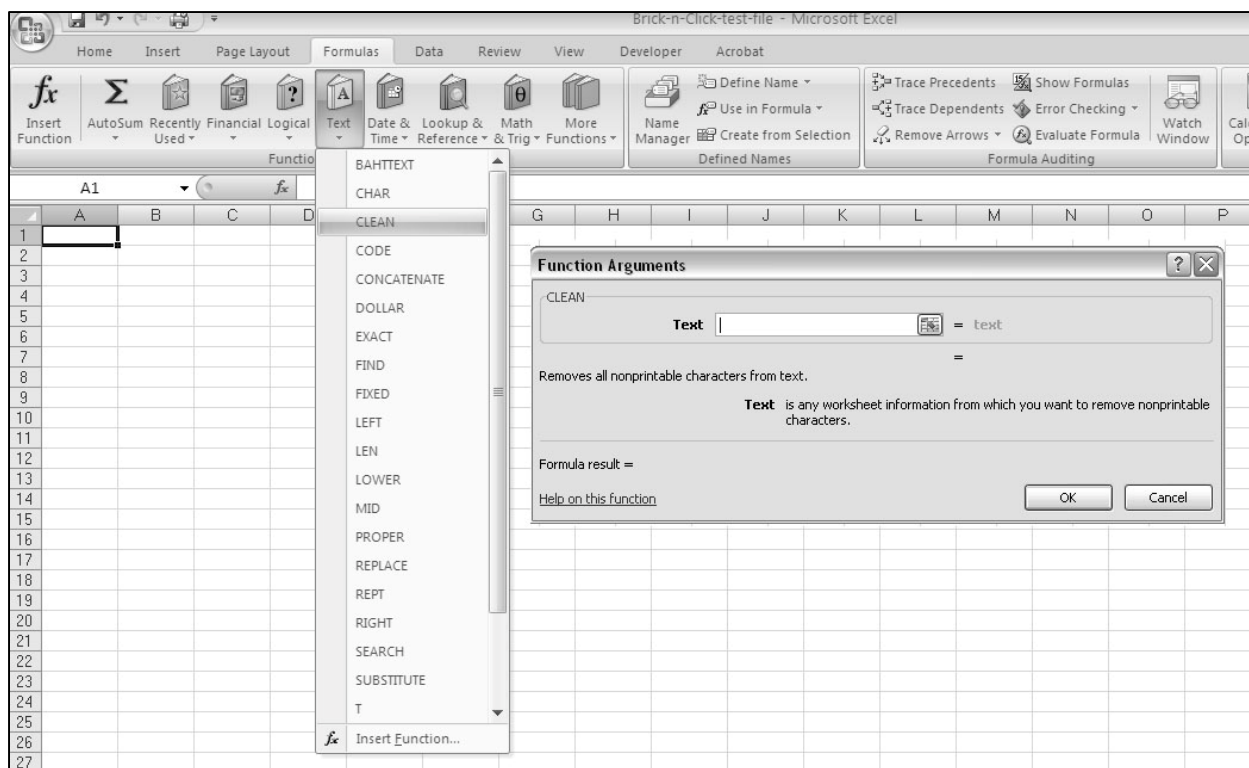
Fig. 9. Screenshot of the CLEAN Function Arguments window.

Generating the Metadata with *Excel*: Extracting Values from the Filename

For the Mountain Plains project, preservation of chapter structure was important. Each page in the book was scanned as an individual image. Those images and their corresponding metadata had to be loaded into *CONTENTdm* in such a way that the pages would be rendered in the correct order and so that the page numbers in the description matched exactly the page numbers as seen on the original version. To accomplish this, a metadata template using *Microsoft Excel®*, was created. At first glance, it would appear that much of the metadata would need to be entered into the spreadsheet by hand. However, by using the MID function combined with the FIND function, individual image titles could be extrapolated from the image filenames.

The syntax for the FIND function is:
=FIND(text, source cell)

and

The syntax for the MID function is:
=MID(text, start position, number of characters to return)

The general file naming convention established for this project was:

[name]_[volume or issue or part #]_[master or derivative]_[page#].tif/jpeg

For example, the file name for a derivative image created for page 4858, volume 12 of a book digitized for a digitization project (Congressional Hearings) would have the form

cong_12_drv_04858.jpg

The piece of information that needed to be extracted from the string was the page number. Therefore, in the MID Formula column of the template (see fig. 4) the following was entered:

=MID(V4,FIND("drv_",V4)+5,4)

This formula tells the computer to look in cell V4; determine the position of the d in the text string drv_ in cell V4; add 5 to that value; then return the next 4 characters. This resulted in the computer returning the value 4858. The FILL function was then used to populate the rest of the rows in the spreadsheet.

The same thing can be accomplished by using the MID function alone

=MID(V4,14,4)

This formula tells the computer to look in cell V4; start at position 14 and return the next 4 characters. The end result is the same. Initially only the MID formula was used; however, utilizing this formula required manually counting the characters to determine the starting point. The combination of the FIND function with the MID function requires less manual intervention to accomplish the same goal.

Generating the Metadata with *Excel*: Generating Metadata from the Extracted Values

Once the page number associated with each image of the Mountain Plains project had been extracted, it was necessary to indicate to the viewer that that value was a page number. Again, use of the CONCATENATE function made this a trivial operation. The CONCATENATE function also allows text strings to be merged with cell contents. In a cell in the Title column (see fig. 4) the following formula was entered:

=CONCATENATE("Page ",W4)

This resulted in the value "Page 4858" being shown in appropriate cell. After the rest of the metadata values were entered into the spreadsheet, the relevant columns and rows were copied and pasted using the PASTE SPECIAL function to paste only the values into a new spreadsheet. The new spreadsheet was then saved as a tab delimited text file and was loaded into *CONTENTdm* along with the image files and the OCR transcripts.

Adding Macros to Speed Up the Process

All of the functions discussed in this paper have proved very helpful in automating and speeding up the metadata creation for a variety of projects. Utilization of the macro functions built into *Excel* allowed further automation of metadata creation, particularly with the Forest Service

publications project. *Excel* uses *Visual Basic* to code macros. The RECORD MACRO function makes macro creation straightforward, even with a limited knowledge of Visual Basic.

To create a macro in *Excel*, click on the RECORD MACRO function in the Developer tab. A Record Macro window will open (see fig. 10). Enter a name for the macro, a shortcut key (if desired), and a brief description of what the macro does. To use the macro within any *Excel* spreadsheet, choose "Personal Macro Workbook" from the "Store macro in:" dropdown menu. Click the Ok button and then simply perform all of the steps you wish to record and play back in the macro.
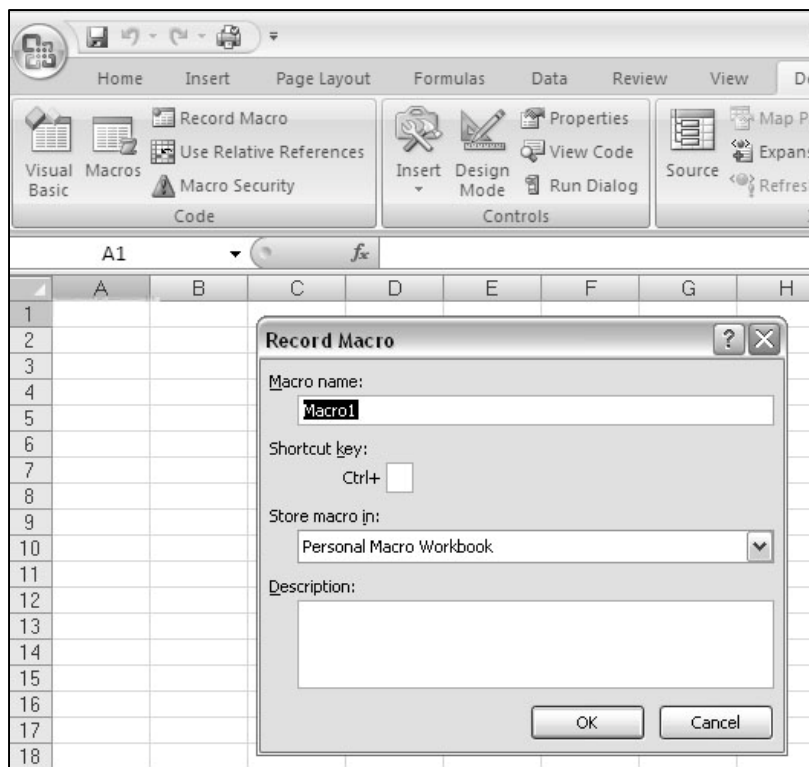
Fig. 10. Screenshot of the Record Macro dialog box.

For the Forest Service project a number of short macros were created for each step in the process. A master macro was then created which ran each of the individual macros in a specified order. The result was the ability to clean up the entire spreadsheet of data in seconds with a single keystroke. An added advantage to using a series of smaller macros is that the pieces can be combined as needed for future projects thereby obviating the need to create an entirely new large macro to deal with the intricacies of each project.

In order to ensure future use of this clean-up macro on projects of varying size, the FILL functions needed to be set to include a large number of rows of data. To do this the AUTOFILL code within the macro was edited. To edit a recorded macro, click on the Macros function in the Developer tab; select the name of the macro that needs to be edited and click the EDIT button on the Macro dialog box. This will open a Microsoft Visual Basic window containing the code for the macro (see fig. 11) Find all the lines which read:

<p style="text-align:center">Selection.AutoFill Destination:=Range ("B2:B25")</p>

Note that the cells within the parentheses will be different for each project. Change the ending source cell so that it contains a row number larger than the largest anticipated spreadsheet. For instance the above example was changed so that the FILL Function would to apply to rows 2 through 1500 of Column B.

<p style="text-align:center">Selection.AutoFill Destination:=Range ("B2:B1500")</p>

Save the changes and close the window.
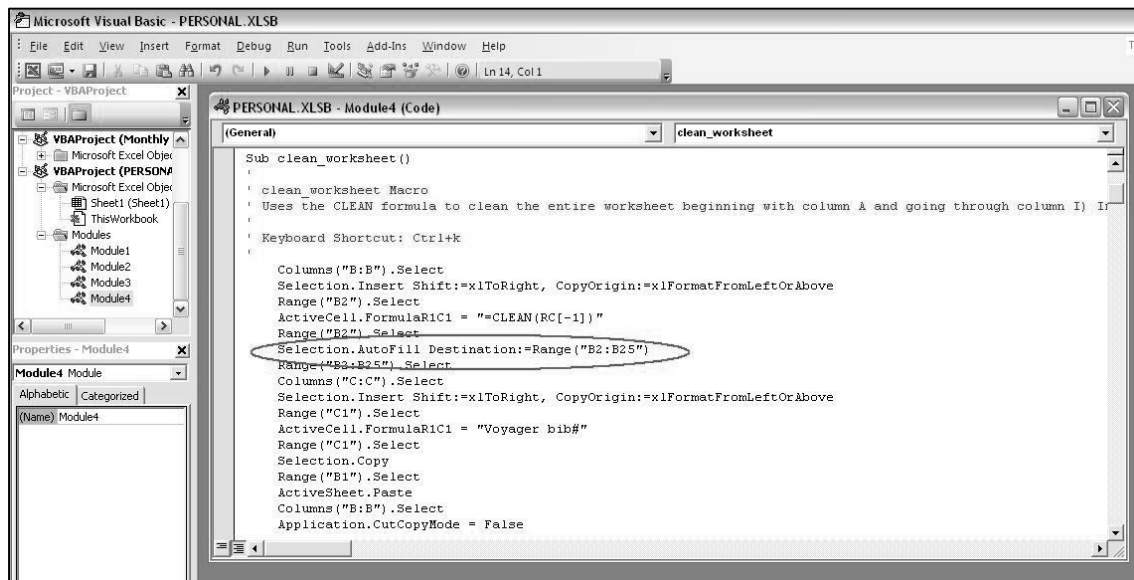
Fig. 11. Screenshot of a sample macro using AUTOFILL.
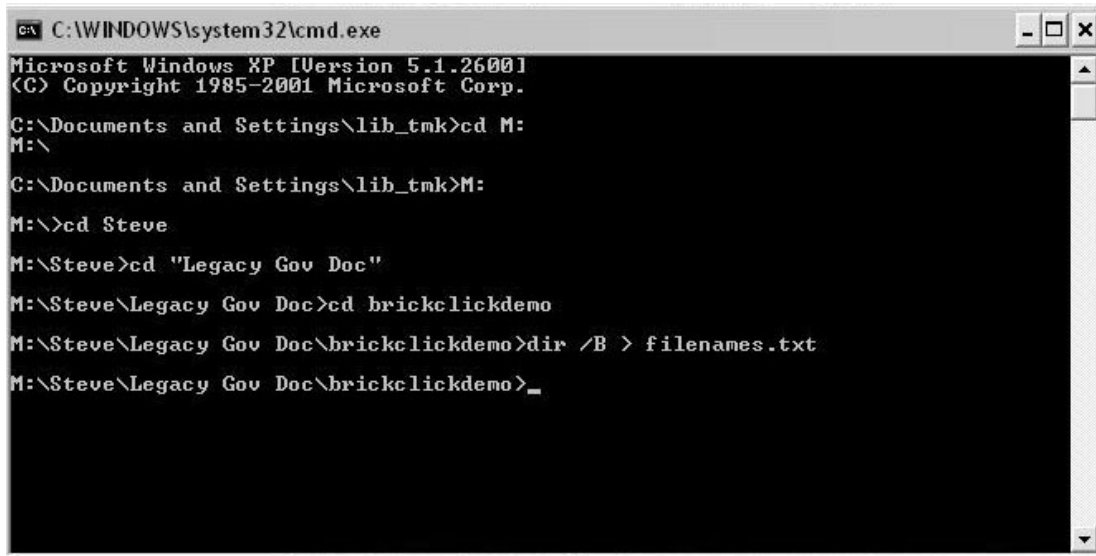
Other Tricks for Generating Values

Pasting Filenames (Command Line Trick Not in *Excel* But Still Very Useful)

Many of the tips and tricks explained in this article use information from the filename. With a large project a mechanism was needed to insert the filenames into the *Excel* spreadsheet without manually typing in each name. A member of the library's Technology and Systems Services Department came to the rescue and explained how to use command line functions in Windows XP to create a list of filenames within a directory.   From the Start menu, select Run.   In the field Open: type or choose from the drop down menu "cmd". This will open the command line window (see fig. 12). Use the change directories command (cd) to navigate to the directory in which the image files of interest are located. Then type in the command "dir /B > filename.txt" and hit enter.

This will create a tab delimited txt file, named "filename", listing all the names of the files in the directory. At this point the command line window can be closed. Open the file that was just

created; use [CTRL+A] to select all; copy the selection; then paste it into the *Excel* spreadsheet in the appropriate column.

Fig. 12. Screenshot of Command Line window. In this case, the Legacy Gov Docs directory on the M drive was selected and then a list of files in the brickclickdemo directory was saved to a file called filenames.txt.

Possible Improvements

While the tips and tricks discussed above greatly reduced the time and effort needed to generate metadata, the process will not to be totally automated. Manual review is necessary to make sure all the punctuation changes were done properly and to change anything that didn't fit into the parameters of the original macros. For example, during the quality control phase of the Forest Service project, it was discovered that using the FIND AND REPLACE function in the subject field to change the ending punctuation of a period to a semi-colon space, line break command also resulted in changing periods in abbreviations, e.g., U.S. was changed to U;
S;
. An additional step added to the macro used the FIND AND REPLACE function to correct this problem. Knowledge of *Visual Basic*, *PHP* or other coding would enable the development of more elaborate macros that could reduce the need for manual review and corrections to the spreadsheet even further.

While forcing the display by using html line break codes worked for these projects, adding line breaks into the metadata may cause problems with OAI-PMH harvesting. The line break command may not be recognized by other systems collecting the available metadata. A better solution would be to create a *PHP* script, or style sheet to force the desired display. While the mechanics of accomplishing this are outside the scope of this paper, the subject may be worth investigating further if the metadata is to be shared with other institutions.

Additionally any irregular numbering or errors in the filenames required either manual tweaking of the formulas or hand-editing the metadata values. While these peculiarities were easily found

and corrected by the individual finalizing the metadata, quality control in the overall process must be included to catch these and other possible unwanted/unexpected changes created by the macros.

Future Applications/Conclusion

All of the tips and tricks discussed in this paper are straightforward and learnable by the basic/intermediate *Excel* user. While other techniques may have accomplished the same results in a more sophisticated manner, the use of preprogrammed features in *Excel* worked well. A large amount of metadata was generated in a short amount of time, and the metadata was created using readily available tools which did not require the expertise of a computer programmer.

Many Thanks

Many thanks to Jill Strass who wrote the article that started this whole experiment and to Marian Lankston who read tutorials and explored *Microsoft Excel* with me. Without you I'd still be entering a large amount of metadata by hand.

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This Is the World Calling:
The Global Voices and Visions of Internet Radio and Television

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Abstract

Internet radio and TV--tuning into information and feature programs broadcast via the Internet and receivable on a personal computer--piqued interest among educators, librarians, and instructional technologists in the 1990s. Then, connectivity and bandwidth issues affected widespread use. However, interest in Internet broadcasting and podcasting has seen a resurgence in the last few years.

Internet radio and TV is more than just a new toy--there's real content online, applicable to the curriculum. Language instruction, music, politics, religion, history, culture, business, science, and more are just a few clicks away.

This session will provide background on international Internet radio and TV broadcasting; sources for programs; curricular materials available online; and ideas for application to library and educational services.

Introduction

Internet radio and television—tuning into information, feature, and cultural programs broadcast via the web—piqued some interest among educators, librarians, and instructional technologists in the 1990s. A decade or so ago, we were still in the early days of multimedia content on the web, with concerns expressed in the professional literature centering on issues such as licensing, copyright, and workable business models (O'Leary 69-70).

In my past experiences as a reference and instruction librarian and modern languages selector trying to make Internet radio and television available to faculty and students, there were also information technology concerns over bandwidth usage and audio quality. Additionally, there were library concerns over the use of computing resources for purposes other than "library research."

The payment of royalties for music played on Internet radio is still an issue, as is copyright and licensing. At this writing, it's still the case that if you want to view certain TV broadcasts via the web, chances are you will still need to be in the country of origin, rather than somewhere else around the globe. Additionally, just because you can hear or see the programming freely on the web does not mean you can use it as you see fit—or even find it again the next time you go looking. However, bandwidth has increased greatly, high-quality speakers and headphones can

be plugged into computers, and some libraries even allow students to write papers, watch movies, listen to music, and conduct research (often simultaneously!) on library computers. Imagine that!

Nonetheless, there is practically no discussion of the use of Internet radio and television in library and educational journals, despite the fact that there is a wealth of content available, suitable to students, scholars, and the general public. The prevalence of global issues and area studies in the academic curriculum has made international perspectives of greater value to higher education. At many institutions, the semester or year abroad is an inherent part of the student's educational experience. Political ideologies, cultures, religions, and their intersection figure prominently in the curriculum and public discourse as well. Our communities welcome new immigrants, who, despite making new lives here, often hope stay in touch with their countries and cultures of origin. Globetrotting travelers want to get a taste of the society in which they are about to immerse themselves. International broadcasts can meet many of these informational and educational needs.

Programming in language instruction, politics, history, literature and the arts, business and economics, and the sciences are available just a few clicks from your computer—if you know where to look.

Trying to do a formal literature review for such a topic is quite daunting. Instead, what I hope to do in this paper is offer a personal and professional argument in support of using Internet radio and TV resources in libraries and classrooms. In this paper, I will try to focus on my own experiences and impressions in the usefulness of Internet radio and TV, hopefully providing some scholarly, professional, and popular support for the medium along the way.

First, I'll start with a little international broadcasting history—where the concept came from and how this underpinning determines much of what is available today. Next I'll follow up with a few examples of major broadcasters (the BBC World Service, Deutsche Welle, and others) and the wealth of content that they provide to teachers and learners. Then we'll take a look at some "post-Internet" delivery mechanisms for international radio and television programming. Finally, I will discuss some of the ways I have used this content with students and faculty in my work as a reference, instruction, and collection development librarian.

Hopefully, by taking this approach, I can show you how relevant and engaging the resources available can be.

An international story

Organized, non-experimental radio broadcasting is generally regarded to have begun in Pittsburgh, Pa., with the transmission on November 2, 1920, of the Harding-Cox presidential election results by KDKA (Berg, *On the Short Waves* 14). Similar claims to being the first can be made by other institutions—KQW in San José, California, and W8MK in Detroit, for example (Wood 26). However, according to James Wood in *History of International Broadcasting,*

> KDKA meets the criteria that guarantee its place in American broadcasting
> history: It was the first to begin broadcasting on a daily basis, it broadcast

organised programmes for the general public, rather than for experimentalists, and it was the first radio station to be licensed by the FCC as a broadcasting station. (26)

Stations quickly spread throughout North America—thirty had been licensed by the end of 1920 alone (Wood 27). By March 1922, there were ninety-eight; by August of that same year, 253; by October, 502 (Berg, *On the Short Wave* 14). Stations then began popping up in regions of the globe as disparate as Europe, South America, Australia, Asia, and Africa.

Many of these early broadcasting efforts seem to have been inadvertently international, rather than being consciously aimed at an international audience. In the 1920s and 1930s, broadcasting on medium wave (basically, AM) and short wave (which, despite the name, beams broadcasts the farthest distance) allowed listeners in Europe to tune into jazz and other popular musical programming from stations on the East Coast of the United Stations operated by Westinghouse, Atlantic Broadcasting Corporation, Columbia Broadcasting System, General Electric, and others (Wood 29).

Nonetheless, as early as the mid-1920s, the British government was investigating the creation of targeted broadcasts to its far-flung colonial empire (Berg, *On the Short Wave* 48). The first experimental transmission occurred on November 1, 1927, and "Empire Service" was inaugurated by King George V on December 19, 1927 (Wood 34). Regular service on shortwave would begin in 1932, targeted to different regions of the British Empire through directional antennae (Wood 36).

By the mid-1930s, international radio broadcasting on shortwave had arrived, with international services transmitting programming in multiple languages from Germany (1927), the Soviet Union (1927), France (1931), Ecuador (the religious broadcaster HCJB, La Voz de los Andes, 1931), Luxembourg (1933), the Netherlands, Italy, Portugal, Vatican City, and the League of Nations headquarters in Switzerland, among others (Wood 34, 36; Berg, *On the Short Waves,* 72-94).

The list of countries and entities broadcasting on shortwave should also give you an indication of the programming offered by these stations—culture, news, and entertainment (the BBC, the Netherlands), colonial/imperial connections (the BBC, France, and Portugal), religious (Vatican City, Ecuador), international peacekeeping (League of Nations/Switzerland), contact with emigrant populations (Italy, Germany), and propaganda (Germany, Italy, the Soviet Union). In essence, this type of programming continues today on short wave, as well as via the modern manifestations of these broadcasters on the World Wide Web.

Needless to say, the imperial and propagandistic aspects of international broadcasting continued throughout the 1930s and 1940s. In the post-war era, as the Cold War raged on, programming from veteran stations (Radio Moscow, the BBC) increased while new stations developed to counter Communist influence (Voice of America, Radio Free Europe, Radio Liberty).

Despite the propaganda and empire-building and empire–maintaining conducted by these stations, cultural programming and news still featured prominently in international broadcasts.

By the mid-1990s, the Voice of America (VOA) had transmitted more than 10,000 episodes of *Music USA* (Heil 67). In the 1950s, VOA presented *American Theater of the Air,* broadcasting "a series of ten classic American plays, such as *Our Town, The Glass Menagerie, Death of a Salesman,* and *Mister Roberts"* (Heil 67).

Although representing one of the key players in the Cold War, VOA also broadcast news and current affairs programming to an international audience, including the news magazine *Panorama USA; American Forum* (later, *Forum: A Meeting of the Minds),* a series of "lectures by and interviews with American intellectuals, literary figures, and scientists"; *Press Conference USA,* which featured a panel made up of journalists, "very similar to *Meet the Press";* and *Issues in the News,* a current affairs discussion program, "somewhat resembling … the PBS program *Washington Week in Review"* (Heil 67-8).

It's the BBC and its General Overseas Service (which eventually became the World Service) that is perhaps the most well-known for its superior programming to the world at large. While in the early years, music and arts programming predominated and news was limited if not controlled out right (Wood 31), during the 1960s, current affairs programming expanded greatly (Tusa 34). Starting with *The World Today* in 1960, a 15-minute news feature that focused on one subject each day, the BBC developed *24 Hours, Newsdesk, Commentary,* and "a range of other specialist news programmes" (Tusa 34-5).

Over time, the BBC developed a wide variety of programming in all subject areas and to suit all tastes—"English by Radio" language instruction; pop, folk, and classical music shows; radio dramas; documentaries on religion, science, history, and literature; and, of course, authoritative news and business programs.

The BBC and VOA, however, were never alone in providing news and entertainment to a global audience. They were joined quite competently by a variety of countries, their broadcasters, and their missions (or in some cases, agendas), all transmitting in English as well as a Babel of other languages. Deutsche Welle operated in the post-World War II era from Cologne, West Germany. Radio Netherlands, Radio Sweden, Radio France Internationale, Swiss Radio International, Radio Exterior de España, and others, represented a variety of Western European perspectives, while Radio Polonia, Radio Kiev, Radio Bucharest, Radio Budapest, and Radio Prague, among others, represented Eastern Europe. Chiming in from other corners of the globe were Radio Australia, Radio Japan, Radio Cairo, TRT Voice of Turkey, All India Radio, Radio Peking/Radio Bei*jing*, Radio RSA: The Voice of South Africa, Budapest, Radiodifusión Argentina al Exterior, Radio Bras Internacional from Brazil, and Voice of Nigeria, to name but a few.

Many of these broadcasts continued throughout the Cold War 1980s and into the post-Iron Curtain early 1990s. But soon afterwards, the broadcasting landscape started to change. In some cases, the unfreezing of the Cold War spelled the end of the need for some broadcasters (for example, the late East German radio station, Radio Berlin International, which did not last much past German reunification). In other cases, the Cold War and increasing democratization and capitalization changed the approaches and perspectives of the old broadcasters, as well as their names (e.g., Radio Moscow became the Voice of Russia; Radio Bei*jing* became China Radio International).

In still other cases, the costs of international broadcasting took their toll, especially with the advent of new media (e.g., the Internet, as well as satellite and cable TV) and other ways of consuming entertainment and news. Goodbye to the English services of Flanders Radio International (Belgium's Dutch/Flemish network, which ended its English service in the early 2000s), Austrian Radio International (1955-2003), and Swiss Radio International (1935-2004), which has transformed itself into *swissinfo,* a multimedia website offering resources on Swiss and Central European current affairs and culture. As of 2004, the website received more than 8.5 million page views per month (Sennitt), certainly more views than listeners on shortwave.

The transformation of Swiss Radio International into *swissinfo* is indicative of the positive changes experienced by other broadcasters, which seem to have been reenergized by satellite, cable, and the Internet. Mostly positive outcomes have been experienced by the BBC (which now has regional cable channels, such as BBC America and BBC Canada, to name but two, as well as a 24-hour news channel, BBC World); Deutsche Welle (which still maintains an active program of broadcasts on the air and on the web, as well as operating a global cable TV network); Radio France Internationale (which has divided itself into multiple online French channels, such as RFI Musique, RFI Afrique, and RFI Monde); Radio Netherlands (which continues to focus on world events and current affairs, paying particular attention to development in Africa and Asia); and ABC Radio Australia, which concentrates primarily on broadcasting to the Pacific and Southeast Asia.

The future will be live streamed, podcasted, and/or iPhoned.

I published an article on the types of content available from international broadcasters in the March 2008 issue of *College & Research Libraries News* (Barnett), so I won't repeat myself here too much. Suffice it to say that if there is a topic of interest to you, your students, or your faculty, it has been covered in some way and to some degree by an international broadcaster. These stations often serve as the "National Public Radio" for their countries and have decided to share this wealth of content with the world at large. You can find discussions on business and economics, current affairs, history, philosophy, language instruction, literature, music, science, technology, and much more, similar to or even better than (i.e., often longer and more in-depth) than what you might find on your local National Public Radio station in the U.S.

Thankfully, you no longer have to own a special radio or TV or understand the mechanics of radio propagation to access this programming. Many international broadcasters now offer their audio and visual content as "live streams" via the Internet. Some—most notably the BBC, Deutsche Welle, and SRI Radio Sweden—also offer their programming via podcasts through their websites.

Nonetheless, the information on these broadcasts is constantly changing, so I would suggest only using my article as a starting point. Those interested in keeping up-to-date with international broadcasts should also refer to standard reference works, such as *Passport to World Band Radio* and *WRTH: The World Radio TV Handbook.* While those guides assume that the listener/viewer is accessing broadcasts via traditional radio and television, rather than the Internet, the works authoritatively provide information on the stations, their programming, and their missions.

More recently, *iTunes* has gotten in on the broadcasting-meets-podcasting act. Via *iTunes*, you can subscribe to radio and TV broadcasts from the BBC, CBC Radio (both the English and French services of the Canadian Broadcasting Corporation), Deutsche Welle, NHK World (Japan), Radio France's domestic services (France-Culture, France-Inter, France-Bleu, etc.), SRI Radio Sweden, Radio Netherlands Worldwide (RNW), Radio Televisión Española (RTVE), and several others. These programs are free (for now) and can be accessed through *iTunes* and downloaded to portable devices. Programming is limited, though, generally consisting of much of the same domestic and international services found on the broadcasters' websites. In some cases, however, there is much less programming available via *iTunes* than there is on the broadcasters' homepages.

What you won't find for free (yet) are the full offerings of BBC TV—you'll still have to subscribe to the digital tier from your cable provider to tune into BBC America's shows or use *iTunes* (and your credit card) to pay for "season passes" to view programs such as *Skins, Torchwood, Mistresses,* or *Top Gear.* At this writing, there appears to be no significant television content from other international broadcasters, at least in the U.S. version of *iTunes*. Instead, having access to a good cable or satellite TV provider is in order to view at least the internationally directed transmissions of TV5 Monde (France), Deutsche Welle (Germany), RTVE (Spain), or NHK (Japan), among others.

An interesting recent phenomenon (at least recent to me) is the use of iPhone applications to listen to radio programming. While on vacation in Canada in summer 2009, I encountered this phenomenon twice—once via the Canadian Broadcasting Corporation's website, which was then touting the availability of an iPhone application enabling listeners to listen to content from CBC Radio 1, 2, and 3. The French-language service available from Radio-Canada was also advertising both an *iTunes* application and a widget, downloadable to your computer, to facilitate accessing their programming.

On a more personal level, I also encountered the phenomenon during a fireworks festival I attended in Montreal in the summer. I went with two friends to watch the fireworks along the Saint Lawrence River in the Vieux-Port area. To accompany the fireworks, one of the local radio stations was broadcasting a musical soundtrack for the show. My friends Daniel and Regis—both of whom are in their late 40s and neither of whom is a librarian or a teacher I should add—were eager to hear the music and match it to the display. Daniel pulled out his iPhone, and Regis and I worked with my BlackBerry to try to find the station via the web (an application for the local station on Daniel's iPhone did not seem to be working). We eventually found the website and the broadcast and were able to connect to the content—but via a 10-second delay, which, naturally, did not fit well with a time-sensitive soundtrack to fireworks.

Still, it was impressive to be able to use handheld technology for such an immediate need, something that has been forecasted for years but which only recently has become possible. Granted, it's not perfect—in some settings, a 10-second delay would be acceptable; in others, perhaps not. And in some settings, the content might not be available at all—you try using a cell phone in West Texas or a T-Mobile plan in Central New York, and you are sure to be disappointed by what you can't hear or can't see.

Nonetheless, this would seem to be just another "Are we there yet?" aggravation along the information interstate highway. I can't imagine this being a long-term impediment to accessing such content. In fact, I'm sure someone more tech-savvy and needs-to-be-connected than me has already figured out a solution to this and other dilemmas, either through satellite phone service or some other means of telecommunications. We seem to be almost there, just on the verge.

Can you imagine if the easily accessible, hand-held content were educational or research-oriented in nature, something more than the soundtrack to summer fireworks but instructional materials for a class? How will that impact our work, our teaching and learning, and our audiences?

I'm not trying to paint too rosy of a picture. I'm beyond skeptical toward most of the whiz-bang discussions of technology and the next great solution to all our problems. I'm cynical enough to wonder what someone is trying to sell me. I've yet to lay down the money for an iPhone.

Portability comes at a price—and not always just a financial one. Listening and watching online or through handheld devices is not without problems. The equipment and service costs for iPhones alone make widespread adoption still a ways off. Sound quality isn't always superlative, although it is vastly improved over the sound available via shortwave receivers of yore, when reception was dependent not only on equipment but also time of day, weather conditions, sunspot activity, accidental electrical interference, or intentional jamming. The modern equivalent of poor propagation conditions—computer speeds and network connections—can often be easily resolved, albeit at a price and usually with some serious pleading to your library and information systems administrators.

As mentioned above, the information and details on international broadcasts changes constantly. Finding and keeping such programming can also be problematic. Much of the content of these broadcasts is ephemeral, even when it's available via *iTunes* or from the station's website. You may find it once, and the next time you return to the site, the program may have been replaced or superseded by newer content. This reality presents challenges to students and scholars alike, who may need to refer to content more than once and in greater depth than the casual listener/viewer.

Nonetheless, there is a wealth of content available to scholars and students alike, which, given the vagaries of the Wweb, may at least provide supplemental materials for courses. Although research literature or even anecdotal evidence on the topic seems scant, I'm not alone in thinking that such resources can be of use to students. Jackson gives a brief mention of this possibility for language learners in her article (Jackson 96); Crookall wrote more extensively on the topic in 1983, even though he was working in the "bad old days" pre-Internet (Crookall 155).

As further evidence, I cite my own experiences in using international broadcasting resources with students and faculty at the University of Texas at San Antonio, where I worked from 1997 to 2004, and Gettysburg College, where I worked from 2004 to 2007. During that time, I have been able to direct a professor of Australian studies to oral histories broadcast by ABC Radio Australia, which he was able to assign to his students for a class project. I have directed students going overseas to the broadcasts emanating from their target countries so that they and their

families could be better attuned to local issues and news. I have listed radio and TV broadcasts, as well as language learning series, from Deutsche Welle on information literacy guides for German classes. I have directed a Spanish professor and her students to audio readings of classic works of Spanish literature available freely on the World Wide Web from Radio Exterior de España. And I have offered support to a new university course on globalization by directing the professor to a BBC World Service documentary series on the topic and consulted the program's reading list and supplemental materials in order to boost my library's holdings in the subject.

Both professionally and personally I have gained a great deal by tuning into international broadcasts, first on shortwave and now online. While I think I always had an interest in life outside the small town I grew up in (I vaguely remember trying to find a book on Sweden in my hometown library way back in the late 1960s), international broadcasting facilitated and expanded that interest. Nowadays I listen as time allows to international broadcasts at work and at home, eager for the non-U.S. perspective on the news and current events, the different music, the literature, the culture, and the ways of living and thinking different from, yet reminiscent of, my own. International broadcasts have shaped my opinions, have improved my Spanish accent, have led me to study Russian and French as well, have turned me on to new authors and music, have given me different perspectives on topics I thought I "knew," and have helped me further friendships around the globe.

Nevertheless, despite the lack of discussion of the topic in the professional literature, I hope that my experiences, both personal and professional, may help you see how employing such content as part of your array of information tools can help you make connections with faculty and students, enriching their work and their lives, as well as perhaps your own. For me, tuning into international broadcasts is just one more way to facilitate good global citizenship and lifelong learning, which I'm willing to bet are some of the major reasons many of us were attracted to work in libraries and higher education in the first place.

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Comparing Bananas with Grapes:
Ebook Use Data from a Bunch of Vendors

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Abstract

The Penrose Library at the University of Denver has access to hundreds of thousands of electronic books (ebooks) from a wide variety of aggregators and publishers. While many librarians have a great deal of experience in the analysis of journal use data, the analysis and publication of ebook use data is behind the curve. Many journal publishers provide "Counter Compliant" statistics to their subscribing institutions, but this is not the case for most ebook publishers. Thus, comparing ebook use from one vendor to the next can be difficult. Even though many ebook publishers do not provide "Counter Compliant" use statistics, several common data elements were used in this comparison. In order to keep the study focused, the presenter extracted use data from several vendors to analyze use in the subject areas of engineering and computer science. Ebook use data were also compared to print book use data in those two subject areas.

Introduction

Librarians have been using electronic resource usage statistics for a long time, but they have not been evaluating e-book usage for nearly as long. One of my colleagues, Michael Levine-Clark, had surveyed and evaluated e-book usage here at the University of Denver, but the data evaluated e-book usage over the entire range of disciplines (Levine-Clark, "Electronic Book Usage" 285). As the Science and Engineering Librarian, I wanted to see how our usage of engineering and computer science e-books compared with each other and with the circulating print collection.

The University of Denver has been purchasing or subscribing to e-book packages since the late 1990's. Our first e-book package was consortially negotiated with netLibrary. Many reference librarians were not happy with the interface, but at the time, we did not have much of a choice. However, many patrons were happy to have access to that first wave of electronic books (Levine-Clark, "Electronic Book Usage" 285). Levine-Clark also surveyed students in the humanities to determine their usage patterns and preferences. Because of the nature of their research, Michael found that researchers in the humanities still preferred printed books to e-books (Levine-Clark, "Electronic Books and the Humanities" 12).

Since the mid-2000's, the University of Denver has been purchasing or subscribing to e-books from a much larger number of e-book vendors, and many of those vendors have concentrated collections in the computer science and engineering subject areas. Some of the vendors the university provides access to include *Books24x7*, *CRC ENGnetBASE*, *ebrary*, *Knovel*, *Morgan &*

Claypool Synthesis Library and *ProQuest Safari*. The author was able to retrieve usage statistics from all of those vendors except *Books24x7*.

Prior Research

Cox, from the National University of Ireland, wrote a two articles examining how librarians can make sense of e-book usage data. He documents some of the common e-book usage metrics and some of the difficulties in evaluating e-book usage statistics (Cox, "E-Books"; Cox, "Making Sense" 195). However, my research includes data from some vendors not covered in Cox's research (such as *CRC ENGnetBASE*, *Knovel* and *Morgan & Claypool*), but the difficulties involved in the evaluation remain the same.

Some of the metrics I encountered in the project include number of page view, full text page requests in PDF format, number of title requests, number of successful [e-book] section requests and user sessions.

Littman and Connaway wrote an article that compared e-book usage with print book usage at Duke University. That study was completed over five years ago, and it covered all disciplines. This study suggested that college students are rapidly adopting e-books in their studies (Littman and Connaway 256).

Findings

The e-book vendors used in this analysis are *ebrary*, *Knovel, CRC ENGnetBASE*, *ProQuest Safari*, and *Morgan & Claypool*. Additionally, circulation data from our III catalog and the analysis tool spectra dimension was used to shed more light on the use of printed computer science and engineering books.

I was able to draw two types of data from the various vendors. One type of vendor provided section usage, and the other type provided data on individual e-book use.

The first section provides data from vendors with section usage. They were not able to provide data showing exactly which books were used within their collections. The "bananas" are large fruit, and they can't be eaten in a single bite. The vendors in this category are *Knovel* and *Morgan & Claypool*.

The second section includes data from vendors that provided individual e-book usage statistics. The "grapes" are smaller fruit that can be examined and eaten individually. These vendors are *ebrary*, *CRC ENGnetBASE* and from *ProQuest Safari*. This type of vendor provided data that was COUNTER compliant. However, III circulation data also includes individual print book usage but they are not COUNTER compliant.

Section One

Knovel provided section usage data using page views from June 2008 through May of 2009. Every section had some level of use.

Table 1
Secure Pages Viewed in the Knovel Subject Areas, June 2008 through May of 2009

# of Views	Title
103	Food Science
85	Chemistry & Chemical Engineering
85	Plastics & Rubber
69	Mechanics & Mechanical ..
53	Electronics & Semiconductors
42	Oil & Gas Engineering
34	General Engineering & Engineering ..
27	Metals & Metallurgy
20	Biochemistry, Biology & ..
15	Aerospace & Radar Technology
13	Promotional Titles
11	Electrical & Power Engineering
8	Adhesives, Coatings, Sealants & Inks
5	Ceramics & Ceramic Engineering
4	Civil Engineering & Construction ..
3	Pharmaceuticals, Cosmetics & ..
3	Safety & Industrial Hygiene
2	Textiles
1	Earth Sciences
1	Environment & Environmental ..

Morgan & Claypool reported data for the various series they publish, not the individual e-books. Twenty-eight sections had zero use. For a time, the library did not have the correct *Morgan & Claypool* MARC records in the catalog, but that was rectified. In 2008, only 16 of 44 sections were used, and this resource appears to be underutilized.

Table 2
Number of Successful Full-text Article Requests (PDF requests) of Morgan & Claypool E-books during 2008.

# of Views	Title begins with *Synthesis Lectures on*
12	Biomedical Engineering
9	Synthesis Lectures on Electrical Engineering
8	Digital Circuits and Systems
6	Energy and the Environment: Technology, Science, and Society
4	Antennas
3	Communications
3	Engineers, Technology and Society
2	Computational Electromagnetics
2	Engineering
2	Power Electronics

2	Signal Processing
2	Technology, Management, and Entrepreneurship
1	Artificial Intelligence and Machine Learning
1	Communication Networks
1	Image, Video, and Multimedia Processing
1	Speech and Audio Processing

Section Two

The vendors in this section provided usage data for individual e-books. Data was derived from the following vendors: *CRC ENGnetBASE*, *ebrary*, *ProQuest Safari*, and circulation data from our III catalog system. An example screenshot is also displayed from Library Dynamic's collection analysis tool called *Spectra Dimension*.

CRC ENGnetBASE provided individual e-book use data in COUNTER format. I received data over email concerning usage of all of the titles in the CRC NetBASE whether or not we subscribed to the title. The following e-books had three or more "successful title requests" during 2008. However, we currently have access to over 900 ENGnetBASE e-books so it appears as if this resource is underutilized.

Table 3
Number of Title Requests for CRC ENGnetBASE E-books during 2008

# of Views	Titles
33	Microcontroller Programming: The Microchip PIC
15	Mechatronic Systems: Devices, Design, Control, Operation and Monitoring
14	Energy Management and Conservation Handbook
11	Handbook of Nanoscience, Engineering, & Technology
10	Understanding IPTV
8	Polymer Fiber Optics: Materials, Physics, and Applications
6	LabVIEW: Advanced Programming Techniques
5	Avionics: Elements, Software and Functions
5	Management of Professionals, Second Edition
4	Carrier Ethernet: Providing the Need for Speed
4	Ecotextiles: The way forward for sustainable development in textiles
4	Electromagnetics
4	Food Engineering Aspects of Baking Sweet Goods
4	MEMS: Introduction and Fundamentals
3	Design Engineering: A Manual for Enhanced Creativity
3	Electronics Handbook, Second Edition, The
3	Energy Conversion CRC
3	Fiber-Reinforced Composites: Materials, Manufacturing, and Design, Third Edition
3	MEMS: Design and Fabrication
3	Patent Law For Scientists and Engineers
3	Pipeline Engineering

3		Wind and Solar Power Systems: Design, Analysis, and Operation, Second Edition

ebrary provided individual e-book and category use in COUNTER format. I received them over email. Use statistics for the computers and technology categories are listed in Tables 4 and 5 below:

Table 4
ebrary Computers Section, 200 or More Pages Viewed from January 2007 through June 2009

Pages Viewed	User Sessions	Title
2440	56	Microsystem Design
1935	48	How to Do Everything with GarageBand
1051	12	Cyber Spying : Tracking Your Family's (Sometimes) Secret Online Lives
629	11	Virtualization with VMware ESX Server
601	10	UNIX for Dummies (5th Edition)
586	14	Oca/Ocp : Introduction to Oracle9i SQL Study Guide : Exam 1Z0-007
549	18	Guide to MATLAB : For Beginners and Experienced Users
498	11	Theory of Fun for Game Design
400	11	Carrier Class Voice-Over IP
400	10	PIC Microcontroller Project Book
358	10	Information Technology Investment : Decision-Making Methodology
337	4	Oracle PL/SQL 101
300	21	Python Programming for the Absolute Beginner
293	16	Art of Software Testing
293	9	Electronic Enterprise: Strategy and Architecture
286	9	Collaborative Geographic Information Systems
273	13	Broadband Local Loops for High-Speed Access
253	3	Beginning XML (3rd Edition)
245	8	Who Goes There?: Authentication Through the Lens of Privacy
239	9	C++ : The Complete Reference (4th Edition)
213	5	Privacy Protection and Computer Forensics (Second Edition)
210	8	Steal This File Sharing Book : What They Won't Tell You about File Sharing

Table 5
ebrary Technology [Engineering] Section, 150 or More Pages Viewed from January 2007 through June 2009

Pages Viewed	User Sessions	Title
1269	25	Digital Signal Processing and Applications with the C6713 and C6416 DSK
698	13	Bast and Other Plant Fibres
641	8	Mechanics of Composite Structures
604	10	Carrier Grade Voice Over IP

457	7	Competition and Chaos: U.S. Telecommunications since the 1996 Telecom Act
429	7	DTV Handbook: The Revolution in Digital Video
276	10	Satellite Communications (4th Edition)
236	7	Advances in Latent Class Models
228	11	Hunt for Zero Point: Inside the Classified World of Antigravity Technology
224	11	Soft Edge: A Natural History & Future of the Information Revolution
218	1	Introduction to Radio Frequency Engineering
201	4	Seafood Choices: Balancing Benefits and Risks
201	7	Zinfandel: A History of a Grape and Its Wine
191	2	McGraw-Hill Illustrated Telecom Dictionary
188	12	Global Connect (4th Edition)
171	4	LabVIEW Digital Signal Processing
167	12	Neither Star Wars nor Sanctuary: Constraining the Military Uses of Space
164	5	Historical Encyclopedia of Atomic Energy

ProQuest Safari provided individual e-book use in COUNTER format. These e-books are the top "successful section requests" from January 1, 2008 through June 30, 2009:

Table 6
ProQuest Safari E-book Use from January 1, 2008 through June 30, 2009

Number of Uses	Title
2123	The Procurement and Supply Manager's Desk Reference
899	Joomla! A User's Guide: Building a Successful Joomla! Powered Website
852	Joomla!: Visual QuickStart Guide
806	Head First JavaScript
687	LabVIEW for Everyone: Graphical Programming Made Easy and Fun, Third Edition
644	C++ GUI Programming with Qt 4, Second Edition
617	Microsoft Office® Access™ 2007 Inside Out
542	Learning Web Design, 3rd Edition
512	PacketCable Implementation
499	Building Websites with Joomla! 1.5: The best-selling Joomla! tutorial guide updated for the final release
482	Alison Balter's Mastering Microsoft® Office Access 2007 Development
475	Building a WordPress Blog People Want to Read
463	Visualizing Data, 1st Edition
462	Learning SQL on SQL Server 2005
447	Design Patterns in Ruby
441	Pro SQL Server 2008 Relational Database Design and Implementation
435	Fundamentals of WiMAX: Understanding Broadband Wireless Networking
398	MediaWiki, 1st Edition
394	The New Rules of Marketing and PR: How to Use News Releases, Blogs,

	Podcasting, Viral Marketing, & Online Media to Reach Buyers Directly
363	Presentation Zen: Simple Ideas on Presentation Design and Delivery
347	Learning SAS® by Example: A Programmer's Guide
346	Core Java™, Volume I–Fundamentals, Eighth Edition
312	Fuzzing: Brute Force Vulnerability Discovery
309	Creating Dynamic Forms with Adobe® LiveCycle® Designer
301	Microsoft® Certified Application Specialist Study Guide: 2007 Microsoft Office System Edition
299	Apple Pro Training Series Logic Pro 8 and Logic Express 8
297	Visual Design for the Modern Web
287	COSO Enterprise Risk Management: Understanding the New Integrated ERM Framework
271	Microsoft® SQL Server 2005 Unleashed
266	The Digital Photography Book, Volume 2
258	The Rails Way

These printed books are the highest circulating books in their respective call number areas:

Table 7
Print Computer Science (QA75-76) Circulation from 1997 through July 12, 2009

Total Checkouts	Call Number	Title
32	QA76.64.D47 1995	Design Patterns: Elements of Reusable Object-Oriented Software / Erich Gamma ... [et al.].
25	QA76.76.H94 M88 1998	HTML, the Definitive Guide / Chuck Musciano and Bill Kennedy.
24	QA76.76.H94 S257 1998	The Advanced HTML Companion / Keith Schengili-Roberts, Kim Silk-Copeland.
23	QA76.73.C15 K47 1988 SUPPL.	The C Answer Book: Solutions to the Exercises in the C Programming Language, second edition, by Brian W. Kernighan and Dennis M. Ritchie / Clovis L. Tondo, Scott E. Gimpel.
22	QA76.9.A73 P377 1996	Computer Architecture: A Quantitative Approach / David A. Patterson, John L. Hennessy with a contribution by David Goldberg.
22	QA76.9.C643 H46 1998	Computer Prganization and Design: The Hardware/Software Interface / John L. Hennessy, David A. Patterson with a contribution by James R. Larus.
21	QA76.76.O63 S755 1990	UNIX Network Programming / W. Richard Stevens.
21	QA76.76.H92 G65 1998	XML Handbook / Charles F. Goldfarb, Paul Prescod.
21	QA76.73.J38 D45 1998	Java: How to program / H.M. Deitel, P.J. Deitel.
20	QA76.73.C15 K47 1988	The C Programming Language / Brian W. Kernighan, Dennis M. Ritchie.

20	QA76.76.O63 S755 1998	UNIX Network Programming / by W. Richard Stevens.
19	QA76.9.D5 C68 1994	Distributed Systems: Concepts and Design / George Coulouris, Jean Dollimore, Tim Kindberg.
19	QA76.76.O63 M7454 1995	The Underground Guide to UNIX: Slightly Askew Advice from a UNIX Guru / John Montgomery.
19	QA76.76.O63 W35 1987	UNIX System V Primer / Mitchell Waite, Donald Martin, and Stephen Prata.
19	QA76.73.C153 B375 1999	Programming Embedded Systems in C and C++ / Michael Barr.
18	QA76.73.C15 B36 1991	The C Book, featuring the ANSI C Standard / Mike Banahan, Declan Brady, Mark Doran.
18	QA76.9.D3 I5376 1997	Data Stores, Data Warehousing, and the Zachman Framework: Managing Enterprise Knowledge / W.H. Inmon, John A. Zachman, Jonathan G. Geiger.
18	QA76.73.C15 S79 1991	The C++ Programming Language / Bjarne Stroustrup.
18	QA76.9.D3 A25 1995	Oracle, a Beginner's Guide / Michael Abbey, Michael J. Corey [foreword by Gary E. Damiano].
18	QA76.9.D3 R237 1998	Database Management Systems / Raghu Ramakrishnan.
18	QA76.889 .N54 2000	Quantum Computation and Quantum Information / Michael A. Nielsen & Isaac L. Chuang.
18	QA76.758 .F46 1997	Software Metrics: a Rigorous and Practical Approach / Norman E. Fenton and Shari Lawrence Pfleeger.
17	QA76.73.J39 M37 1996	JavaScript Essentials / Jason J. Manger.
17	QA76.6 .R65 1999	Writing Excel Macros / Steven Roman.
17	QA76.76.T48 J97 2002	Software Testing: A Craftman's Approach / Paul C. Jorgensen.
16	QA76.9.D3 E57 1994	Fundamentals of Database Systems / Ramez Elmasri, Shamkant B. Navathe.
16	QA76.9.D26 K575 1996	The Data Warehouse Toolkit: Practical Techniques for Building Dimensional Data Warehouses / by Ralph Kimball.
16	QA76.73.C15 D44 1994	C : How to Program / H.M. Deitel, P.J. Deitel..
16	QA76.73.J39 F53 1998	JavaScript: The Definitive Guide / David Flanagan.
16	QA76.6 .C662 2001	Introduction to Algorithms / Thomas H. Cormen ... [et al.].
15	QA76.76.O63 R4443 1994	UNIX Fundamentals: Unix for DOS and Windows Users / by Kevin Reichard.
15	QA76.73.B3 G855 1995	Teach Yourself Visual Basic in 21 Days / Nathan Gurewich, Ori Gurewich.
15	QA76.9.D37 D37 1998	The Data Warehouse Lifecycle Toolkit: Expert Methods for Designing, Developing, and Deploying

		Data Darehouses / Ralph Kimball ... [et al.].
15	QA76.6 .P475 1998	Operating System Concepts / Abraham Silberschatz, Peter Baer Galvin.
15	QA76.9.D26 S53 2001	The Data Model Resource Book / Len Silverston.
15	QA76.76.D47 T395 2003	Six Sigma Software Development / Christine B. Tayntor.
15	QA76.9.A73 P753 2004	A practical Guide to Enterprise Architecture / James McGovern ... [et al.].

Table 8
Print Engineering (T-TP, TS) Circulation from 1997 through July 12, 2009

Total Checkouts	Call Number	Title
22	TP248.65.F66 T45 2001	Genetically Engineered Food: Changing the Nature of Nature / Martin Teitel and Kimberly A. Wilson foreword by Ralph Nader.
21	TD170.M36 1989	The Control of Nature / John McPhee.
21	TJ755.H45 1988	Internal Combustion Engine Fundamentals / John B. Heywood.
21	TP248.65.F66 G47 2001	Genetically Modified Organisms in Agriculture: Economics and Politics / edited by Gerald C. Nelson.
20	T58.5 .S72 2003	Case Studies in Information Technology Ethics / Richard A. Spinell.
19	T11 .W65 2001	Writing up Qualitative Research / Harry F. Wolcott.
19	TD794.5 .M395 2002	Cradle to Cradle: Remaking the Way We Make Things / William McDonough & Michael Braungart.
19	TK5105.5.T36 1996	Computer Networks / Andrew S. Tanenbaum.
19	TP248.65.F66 E86 2002	The Ethics of Food: A Reader for the Twenty-First Century / edited by Gregory E. Pence.
19	TP248.65.F66 G458 2002	Genetically Modified Foods: Debating Biotechnology / edited by Michael Ruse, David Castle
18	T385 .D875 2002	3D Math Primer for Graphics and Game Development / Fletcher Dunn and Ian Parberry.
18	TD345 .S525 2002	Water Wars: Privatization, Pollution and Profit / by Vandana Shiva.
18	TK7867 .S39 1998	Microelectronic Circuits / Adel S. Sedra, Kenneth C. Smith.
17	TA1637.B48 1995	Introduction to Imaging: Issues in Constructing an Iimage Database / Howard Besser, Jennifer Trant.
17	TP248.65.F66 N67 1998	Eat Your Genes: How Genetically Modified Food is Entering Our Diet / Stephen Nottingham.
16	T14.5.D64 1994	Does Technology Drive History? The Dilemma of Technological Determinism / edited by Merritt Roe Smith and Leo Marx.

16	TA1637 .O7 1998	Digitizing Historical Pictorial Collections for the Internet / by Stephen E. Ostrow.
16	TD195.D35 M33 2001	Silenced Rivers: The Ecology and Politics of Large Dams / Patrick McCully.
16	TK5102.5 .K379 1993	Fundamentals of Statistical Signal Processing : estimation theory / Steven M. Kay.
16	TK5102.5.W537 1985	Adaptive Signal Processing / Bernard Widrow, Samuel D. Stearns.
15	TA1632 .G66 2002	Digital Image Processing / Rafael C. Gonzalez, Richard E. Woods.
15	TK5105.5 .V58 1997	Virtual Culture: Identity and Communication in Cybersociety edited by Steven G. Jones.
15	TP248.65.F66 S64 2003	Seeds of Deception: Exposing Industry and Government Lies About the Safety of the Genetically Engineered Foods You're Eating / Jeffrey M. Smith.
15	TS171.4 .M39 2004	Massive Change / Bruce Mau with Jennifer Leonard and the Institute without Boundaries.

Using Library Dynamic's collection analysis software tool called *Spectra Dimension*, one can see the title counts and circulation counts for either broad or specific call number areas. The data comes from the local library catalog and the circulation module. The library can also compare their figures with other libraries. Below is an image of a title count comparison in the T's where most engineering books are located (Library Dynamics 12).
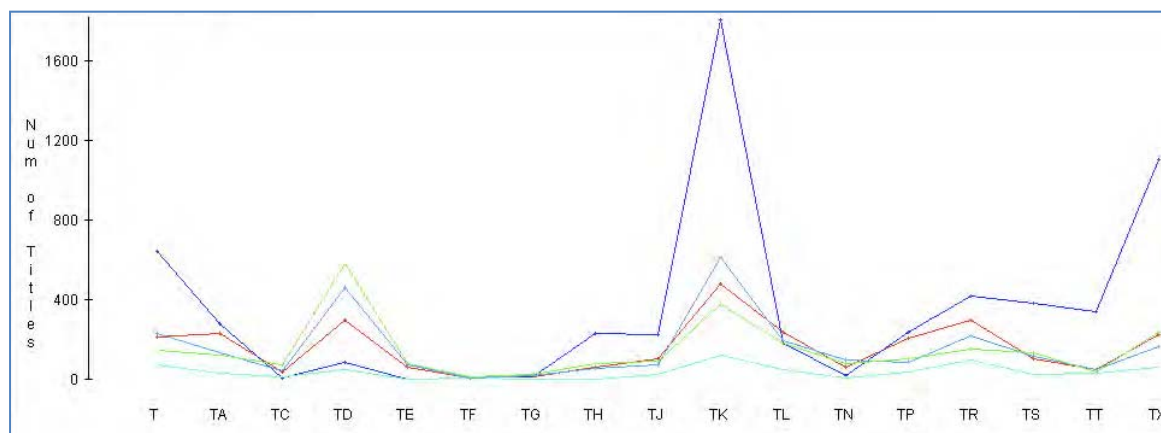

Fig. 1. Title count comparison, sub-class T

Conclusions

It is no surprise that textbooks are popular when they are available in electronic format. I was also not surprised to see that some of the popular subject areas were genetic engineering and food related topics, nanotechnology, energy topics, *C++*, programming in *Java, Joomla, SQL* and *UNIX*. Considering the large number of printed books that were checked out concerning genetically modified foods, I will make sure our collection is up-to-date in that area.

Some of the resources such as the *CRC ENGnetBASE* and the *Morgan & Claypool* database appear to be underutilized. The library may need to do a better job promoting some of these wonderful resources.

It is also difficult to say how much *Google Books* affects the current e-book reading behavior of the average undergraduate student. I am finding more and more scholarly and academic e-books that have some/most of their content available through that system. This comparison may be interesting for a future research project.

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Give the People What They Want:
Academic Reserves via *ReservesDirect*

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Abstract

The longstanding desire on the part of faculty and library reserves staff for an easy-to-use Course Reserves Management System (CRMS) led North Carolina State University (NCSU) Libraries in 2007 to search for a new solution, eventually choosing open-source, Web-based *ReservesDirect*. In early 2008, a data map was created to migrate 55,000 course reserve items from the integrated library system (ILS), which had powered course reserves since 1998, over to the new CRMS.

Marketing to faculty began in late spring of 2008 and continued until the beginning of the fall 2008 semester. Several instructors participated in a pilot of the new CRMS during the first summer session of 2008, while reserves staff studied it during spring and summer of that same year; the feedback from both instructors and staff allowed the library information technology division (ITD) to improve the software. The result was that the CRMS and the reserves workflow, modified where necessary, fit together in a more seamless fashion.

Though the CRMS service retained its former brand name--My Course Reserves--the difference between the ILS and the *ReservesDirect* versions was noticed and almost unanimously appreciated by faculty and students during the Fall 2008 semester. New features included sorting and annotation of course reserve items, direct management by faculty of their course reserve lists, dynamic linking to Course Management Systems such as *Moodle* and *Vista*, and greater copyright protection.

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What the Text Is Happening?

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Abstract

Academic libraries are looking for ways to stay relevant to the Millennial/Internet generation. At the University of Nebraska at Omaha (UNO) Criss Library, we are conducting a pilot study on mobile computing to provide people to people (p2p) reference services. We will use smart phones and iPhones to interact with students who need information assistance. The study's objectives are the following:

1. Collect data to inform decisions about budgeting, reference services and staffing to re-tool for mobile computing.
2. Identify the audience for mobile computing.
3. Identify the skill sets needed by staff.
4. Create an action plan for redefining the delivery of reference services.
5. Establish Criss Library as an innovator for mobile technology on the UNO campus.

In our presentation, we will give a brief overview of mobile computing in academic libraries and report on the results of our study. In conclusion, we will offer ideas for the future of mobile computing in libraries.

Introduction

Access to scholarly information has changed radically in the last 25-30 years. In the past, a search for peer-reviewed articles usually began with paging through subject or author print indexes and seeking out one's colleagues for new materials through the social networking of the time—phone calls, letters, conferences, and email. As periodical indexes began converting to digital format, libraries bought bibliographic indexes on CD-ROMs or subscribed to databases through Dialog. Initially, these electronic services required a librarian to conduct the search and deliver the results to the user in a printed list, but quickly transitioned to public user work stations in the library. Maintenance of CD-ROMs and their monthly/quarterly updates shifted to web-based servers hosted by vendors. In the 1990s, the Internet transformed into a medium of choice for libraries, and users could access databases from work stations both inside and outside the library. In turn, vendors responded positively to the demand for databases with full-text journal articles, book chapters, e-books, e-dissertations, and e-newspapers.

Following the transformation of digital access to scholarly information, another major change is now on the library landscape: mobile computing. Our mobile society has adopted on-the-go preferences for communication and information access.

The Evolution of Library Services

The first century of the library science discipline saw a slow emergence of direct patron service. Initially, librarians concentrated on cataloging collections and the use of bibliographies and reference books for the patron to use on his or her own to find information. Patron assistance was casual and, over time, became more personal. Direct patron service was still seen as a supplement to printed aids. As the library's role in the educational process became more accepted in the twentieth century, reference service moved from the periphery to be the primary focus of interpreting library resources and services with trained personnel and separate department status (McElderry 408-420).

Declining library budgets and purchasing power in the 1980s and 1990s fueled the paradigm shift from ownership of resources to information access on the World Wide Web. The library moved from its traditional role of serving as a storehouse of scholarly publishing to becoming a gateway to digitized information: "Throughout the 1990s, libraries increased their holdings of computer-based resources, first with stand-alone CD-ROM databases, then local area networks, and finally a significant shift to Web-based databases" (Courtney 473-480). The explosion of resources on the Internet in the late 1990s became a "watershed in the way that libraries and their users 'connect'" (Miller 645-670). A shift from information management to knowledge management has led to a new focus "on maximizing online access from multiple remote locations (Miller 645-670). As search and retrieval has shifted from print to electronic, Internet access has evolved from hard-wired, networked desktop PCs to wireless-access laptops, to broadband mobile devices such as SmartPhones, iPhones, and netbooks. The year 2009 not only presents issues regarding remote access but also issues regarding multiple devices for access. The flow of scholarly information has become "inextricably intertwined with technology" (Miller 645-670).

Recent library literature issues a call to rethink assumptions about service delivery and to base service delivery decisions on research. A key issue facing reference service delivery is the deconstruction of the landscape of scholarly information. "Scholars can now publish without publishers, publishers can distribute without vendors, and end users can get access to the scholarly literature without going through the library" (Miller 645-670). This deconstruction, however, does not diminish the need for collection and reference services: "I start with the general principle that libraries and librarians are indispensable in providing access to a wide range of literature important for academic programs, especially at research universities. Not only do they have responsibility for acquiring massive amounts of material worldwide, but also are responsible for making available all of the scholarly activity they can possibly manage" (Holley 79-81).

Reference service, like CD-ROM indexes and databases, are no longer restricted to the physical building. "Often the library building was a major limiting factor to the adoption of a new pattern of service" (McElderry 408-420). The exponential development and availability of computing technology significantly impacts the ability to provide library services in the virtual space.

"Throughout U. S. history, libraries have changed in response to external influences"(Weiner 1-12). With the arrival of the mobile information society, libraries must address this changing environment, in respect to both collections and services.

Mobile Students

The traditional college student, ages 18-22, has often been referred as the "Net Gen." Tapscott captured their characteristics in his book *Grown Up Digital*. These characteristics are freedom, customization, scrutiny, integrity, collaboration, entertainment, speed, and innovation (Tapscott 368).

The Internet is an integral part of the lives of Net Geners: "They actively use many different technologies for school, work, and recreation" (Salaway, Caruso and Nelson). Key findings relevant to libraries from the *ECAR Study of Undergraduate Students and Information Technology, 2008* include the following:

- Data shows that 66.1% of students own Internet-capable cell phones. Twenty-five percent of respondents who self-identified as early adopters of technology "access the Internet from handheld devices weekly or more often" (Salaway, Caruso and Nelson 5).
- Internet usage averages 19.6 hours per week. Social networking is heavily used by respondents. Facebook is used by 85.2%, text messaging by 83.6%, and instant messaging by 73.8%.
- Students rate their information literacy skills, as defined by the Association of College and Research Libraries at a much higher level (79.5%) than their professors and librarians.
- Students used different technologies to learn: Internet searches, text-based conversations, contributing to websites such as wikis and blogs, and video games/simulations (Salaway, Caruso and Nelson 5,11).

Data from the *University of Nebraska at Omaha* (UNO) *Student Technology Survey* show similar patterns. When surveyed on their use of technology, 77.7% of respondents use a personal laptop computer in daily life and 20.1% use a Smartphone daily (University of Nebraska at Omaha 3).

Furthermore, from the *UNO Student Technology Survey*, UNO student Smartphone users report daily usage rates of:

- Text messages = 84.8%;
- Email = 24.5%;
- Accessing websites = 24.5%;
- Taking photographs = 80.1% (7).

In relation to virtual communications within coursework at UNO: 78.9 % of respondents indicate that instant messaging is useful (62.0%) or essential (16.9%) in support of academic work. Twenty-five percent have experienced the use of IM in their courses, while 99.3% have used email (University of Nebraska at Omaha 21). Use of texting within the classroom environment was not included in the UNO survey.

Mobile Libraries

In the late twentieth century, the Online Public Access Catalog (OPAC) replaced the printed card catalog. The "virtual library" that began with computer based catalog search capabilities has shifted to electronic database searching, full-text periodical articles, eBooks, online citation management, downloadable audio books and music, interactive atlases, media files, and more. While specialized databases, indexes, reference publications, and monographic works continue to be available in print format, information searching has moved to web-based services and now the mobile web, often paired with other popular mobile services, such as geographical maps or contact points, such as email or telephone numbers. A perfect example of this paradigm shift is *WorldCat Mobile*. This catalog combines a library catalog search with mapping technology to enable a user to search for a particular book, enter the local zip code, and retrieve a list of libraries in the patron's geographic area that have the book. Contact information and visual map directions to the library are included in the *WorldCat Mobile* search.

Traditional online library catalogs (OPAC) vendors such as SirsiDynix and Innovative Interfaces, Inc offer mobile OPACs (MOPACs). Liston's tests of both of these MOPACs on BlackBerry, iPhone, and Windows Mobile platform returned mixed results across the various browsers and operating systems used by these devices, indicating that further development of MOPACs is needed.

Following upon the footsteps of commercial information providers and online search platforms such as Google and Yahoo, libraries are going beyond the MOPAC to create mobile websites to assist users on the go. Academic library mobile websites contain basic information such as location, maps, hours, and contact information as well as SMS text reference, audio tours and podcasts, database and library catalog searches, e-books, and research assistance (Kroski). Based on our examination of library mobile web sites, libraries are also instituting OPAC-based text message services for call numbers, due dates, hold information, and material availability.

Some library websites serve as a gateway to library content providers such as *WorldCat Mobile* and *EbscoHost.* Research assistance applications, such as *RefWorks* and *LibGuides*, are now designed with mobile computing interfaces. No comprehensive list of libraries with mobile websites exist, but *Library Success: A Best Practices Wiki* lists over 30 United States and international library mobile websites, as well as close to 20 libraries offering SMS text services such as reference or notification services ("M-Libraries"). These mobile services are likely to become critical service points for academic libraries. Horrigan reports that the cell phone went from the device that was the fourth "hardest to do without" in 2002 to the number one slot in 2007.

In the era of library resources available online, full-text, and with 24/7 availability, the academic library is seeing a decline in the use of physical library collections and services, and significant increases in electronic and virtual access. In respect to library reference services, two trends are significant:

- **There is an overall decline in the number of reference queries to the librarian from academic library users**. The Academic Library Survey (ALS) reports a 25% decline in national reference statistics from 1996 to 2004 (Martell 400-407). At the University of

Nebraska at Omaha's Criss Library, reference transactions follow the national trend. Between 1995 and 2005, on-site requests decreased by over 60%. In 2003, the library instituted the Ask-A-Librarian email reference service, which has had steady use of 600-700 questions per year. Fall 2009 saw implementation of web-based instant messaging reference, which is on track to reach 100 questions in a 9 month period.

- **Increasing use of virtual reference services in libraries** that utilize email (asynchronous) and instant messaging (synchronous). The addition of mobile phone-based text-messaging reference services continues the synchronous mode of virtual reference and communications.

Just as computing has moved from desktop to laptop, reference services, too are going mobile.

Text Reference Services

As of July 2009, the World Wide Web currently has a number of text message question-and-answer-services: Mosio, KGB, ChaCha, and Google SMS. Google SMS is an automated answer return service, while ChaCha, KGB, and Mosio are live question-and-answer-services, free with the exception of text-message charges dependent on the user's cell phone plan.

Libraries, too, are starting to offer text-based reference service. Stahr outlines four current options available to libraries for text reference:

- **Dedicated cell phone Short Message System (SMS)**. A library purchases a cell phone with a texting plan and uses it to receive and send texts to patrons.
- **SMS to IM.** Converts SMS texts to an instant messaging platform.
- **SMS gateways.** Converts SMS texts to email
- **Commercial Vendor Services.** Provide multiple (text, email, IM, web dashboard) access points to SMS texts (Stahr 13-15).

Currently, there are two commercial vendors providing texting services to libraries: Mosio's Text-A-Librarian and Altarama Information Systems (AIS). Altarama is collaborating with the Alliance Library System in Illinois to power, *My Info Quest*, a collaborative text messaging reference project. Criss Library, along with over 40 academic, public, school, and special libraries in the United States, is a participant in the 6 month pilot project running from July to December 2009 ("My Info Quest").

Criss Library Text Reference Research Study

Existing research on the use of mobile computing tends to focus on uses outside the academic library environment. Current research in the use of mobile technology to deliver reference and information services in academic libraries is just now being conducted and therefore the first major research study relevant to libraries is *Informing Innovation; Tracking Student Interest in Emerging Technologies at Ohio State University*, published in spring 2009 (Booth 1-i). Booth urges librarians to "…better understand the communities we serve in order to inform an ongoing cycle of innovation" (Booth 1-i). Booth's study of the technology and student cultures at Ohio State serves as a model for the analysis of the student-library connections at the University of

Nebraska at Omaha. As a first step in meeting the challenges of service development, the Criss Library will conduct a study of mobile computing technology used by the UNO community. The purpose of the study is to assess the viability of using text messaging to provide reference/information services to UNO students and faculty.

The specific aims are the following:

- Identify types of mobile computing devices that Criss Library users utilize and how they use them to communicate and to access web resources;
- Learn about users' assistance-seeking behavior at Criss Library and their communication preferences in regard to reference assistance;
- Identify the target UNO community population for text messaging library services;
- Use the accumulated data to inform the plan for defining the delivery of reference/information services to Criss Library users.

The results of the study will inform decisions about how to customize reference and information services based on empirical data. Research is to be conducted in early fall 2009 and results will be presented and discussed at the Brick and Click Symposium on November 6, 2009.

Conclusion

According to Granfield and Robertson, "Virtual reference users do not perceive virtual reference as a novelty or as a marginal service, but see it as a significant service option" (44-53). In a 2008 study of synchronous reference and the help-seeking preferences of students at the Ryerson and York Universities in Toronto indicate that virtual reference services may have special appeal to graduate students and distance learners as they are more likely to perform research activities outside the physical library (Granfield and Robertson 44-53).

With participation in the My Info Quest project, as well as the research study on the texting behavior and reference communication preferences of Criss Library users, we intend to add to the expanding literature on mobile applications in the academic library, as well as increase our understanding of our local users in the rapidly changing mobile environment.

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Letting Customers Choose:
Acquiring Print Books and Ebooks on Demand

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Abstract

The University of Texas at Dallas Libraries now has a two-pronged approach to letting our customers select books.

About 5 years ago, Interlibrary Loan Services began purchasing print books upon receiving a borrow request by faculty and students. The decision to acquire a title was based on a specific set of criteria determined by selectors. While highly successful, the program was expanded to determine if other requests should be acquired.

During 2008, the Library structured a program to enable customers to view or purchase ebooks on demand. The program was initiated to provide access and ultimately to purchase newly published titles in specific subjects and from certain publishers. Unlike a few projects created by some academic libraries, the program at UT Dallas has been very successful and the budget is restrained by the selection parameters. In combination with other buying initiatives, the Library is evolving quickly to migrate book acquisitions to electronic only in many subjects.

The session will include insight on customer-driven ebook selection and will illustrate how materials are added to a Voyager catalog. Finally, an analysis of what is being selected will be provided.

The Library is reaching out to acquire materials in formats demanded by customers at all levels. The monograph collection is now a true hybrid that continues to evolve with trends in scholarship and publishing.

Cataloging Streaming Media: Tools and Rules

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Abstract

Streaming media is becoming a significant educational tool. Providing transparent access to streaming media for instructors and students is needed to easily locate and utilize the instructional value of the content. There are a variety of ways to provide access to streaming media including links on a dedicated web page or course management software such as *Blackboard* or *Moodle*. The Library catalog, as a discovery tool, serves as an excellent gateway to connect the user to the needed streaming media content. The catalog makes it possible to search by a variety of access points so it can be more flexible than other methods of access.

Guidelines for determining what is and what is not streaming media will be discussed. Cataloging rules and tools as well as sources of cataloging information will be identified. MARC fields that are utilized for streaming media will be highlighted. Considerations as to whether to create a new catalog record for streaming media that also has a physical format such as DVD or compact disc or to link the streaming video to an existing record will be examined.

Access and authentications issues will be explored with examples of how several universities have handled the authentication of purchased streaming media. The approach the University of Nebraska at Omaha has taken to cataloging and providing access to streaming video will be explained.

Introduction

In the last few years streaming media has become a significant educational tool. The library catalog is a natural portal for providing easy access to streaming media content. The Online Audiovisual Catalogers, Inc. (OLAC) published *Best Practices for Cataloging Streaming Media* in 2008 which provides the most authoritative guide available to catalogers as they research the best methods of providing access to streaming media. This paper will concentrate on the cataloging of streaming video with some references to the cataloging of streaming audio. Cataloging on OCLC using MARC will be featured.

What Exactly is Streaming Media?

The first decision a cataloger must make is whether the content to be cataloged really is streaming media. The generally understood definition is video or audio transmitted to be played immediately. A small amount of data is sent to the user's computer and stored in a buffer. As the playback continues, more data is streamed to the user's machine. The buffers are cleared when the streaming content is complete. Streaming video minimizes the amount of time required

to view content online as well as the amount of storage needed (OLAC 4). Content that must be downloaded before it is played is not streaming media and should be cataloged with different rules. YouTube is a good example of streaming video while *iTunes* is not streaming because it must be downloaded before playing.

Identifying & Accessing Streaming Media

There are many sources of streaming media both commercial and locally produced. When purchasing streaming media from vendors such as FMG On Demand, it is necessary to authenticate users. Freely available content from PBS, YouTube, and a host of other sources can easily be linked with a URL. Although there is no central source to locate streaming media content, users will often request particular content and web searches can be very effective in identifying appropriate items.

Cataloging Tools & Rules

When beginning a streaming media cataloging project, consult the document *Best Practices for Cataloging Streaming Media* released by the Online Audiovisual Catalogers, Inc. (OLAC) in late 2008 online in PDF format. This is the most authoritative source of information on the subject at the present time. Practices are evolving and the Streaming Media Best Practices Task Force formed by OLAC will continue to update changes as they occur. *Anglo-American Cataloging Rules*, 2nd edition "chapter 6" (Sound Recordings), "chapter 7" (Motion Pictures and Videorecordings) and "chapter 9" (Electronic Resources) will also be helpful. *AACR2* is available in print as well as by subscription online in *Cataloger's Desktop*. OCLC's *Bibliographic Formats and Standards* will be valuable in determining correct codes. It is also available in both print and online versions.

It is important to document local decisions to ensure that cataloging is consistent over time within the local catalog. At the University of Nebraska at Omaha, procedures were written and documented on the library wiki. These procedures have been extremely helpful because there is often a significant time lag between the cataloging of streaming media items.

Before beginning the original cataloging process, search OCLC or other sources for cataloging copy. Records for another form of the work such as a DVD or even a print source on which the streaming media was based may be available. It may be possible to derive a record that will at least provide some basic information. Related copy may provide starting points for subject headings or other needed information.

Chief Source of Information

Since there is no physical piece to catalog, follow AACR2 9.0B1 which states "The chief source of information for electronic resources is the resource itself" (Joint 9-3). The information that can be found about a particular item will vary from resource to resource. Often there will be a summary, playing time, and other basic information at the URL for the media. An example is Films on Demand which does provide this type of information. Many videos will have credits that can be used as sources of information. Web pages describing the piece can often be found

on the publisher's site. Locally produced content may require having a conversation with the producers. Catalogers must do a little research to locate information needed for the record before they begin the cataloging process.

Creating the Workform in OCLC

When beginning the cataloging process in OCLC it is important to select the correct workform. For streaming video, select "Visual Materials" and for audio select "Sound Recordings". Using the URL of the streaming media, it is possible for OCLC to extra metadata. To do this go to "Cataloging", select "Create" and then "Extract Metadata". Provide the URL and OCLC will bring up a workform with the information it was able to extract. It may be necessary to change the workform type as the extracted metadata seems to always be on a Continuing Resources workform. This does provide a good start in cataloging process although each element must be examined for accuracy.

If a large project is being undertaken and many of the fields will be identical or at least similar, it may speed the process and ensure consistency if a constant data workform is created in OCLC. This will provide a starting point for each item and allow the cataloger to concentrate on the unique aspects of each piece.

Fixed Fields

The fixed fields will vary depending on whether video or audio is being cataloged. Once the correct workform has been selected, it is just a matter of inputting the appropriate codes. For streaming video, the following fixed field values for the Visual Materials workform were documented on the University of Nebraska at Omaha's wiki page:

Fixed Field	Most likely value
Type	"g" (Projected Medium)
BLvl	"m" (Monograph/Item)
Desc	"a" (AACR2)
ELvl	"k" (Less-than-full input by OCLC participants)
Form	"s" (Electronic)
TMat	"v" (Videorecording)
Srce	"d" (Cataloging Source "Other")
GPub	Blank
Tech	"I" Live action
Audn	Blank
Time	Number of minutes
DtSt	"s" - single date, there could be other codes
Ctrl	Blank
MRec	Blank
Dates	One date if DtSt is "s", multiple dates if applicable
Lang	"eng" or other code for language of streaming video
Ctry	Appropriate country code.

Fig. 1. Streaming video fixed fields.

006/007 Fields

Add a 006 field to reflect the electronic resource aspects of streaming media. Videos will have a "c" for "representational" and audio will have an "h" for sound. Create two 007 fields. One 007 will describe electronic components and the other will note characteristics of the videorecording or the audio. OCLC has made it quite easy to create 007 fields by using a macro. Go to "Tools" and select "Macros" and then "Manage". Expand the "OCLC" item and select "Add&Edit 007" and "Run". Select from the menus and the 007 field will be created. It is very important to select the correct "Category of Material" because that will determine the selections available. Since all streaming media needs a 007 for Electronic Resource, the "c" must be selected and choices made. The second 007 will depend on the type of material.

Variable Fields

The contents of variable fields should be determined in accordance with applicable *Anglo American Cataloging Rules* and *Bibliographic Formats and Standards*. The following variable fields for streaming video were documented on the University of Nebraska at Omaha's wiki page:

- 028 Publisher Number - Use if available. Example: FFH 31327 |b Films for the Humanities & Sciences
- 090 Call Number - Assign a call number even though it may not display. A stem is all that is needed.
- 245 Title and Statement of Responsibility. Will include general material designation: |h [electronic resource] Example: Between two worlds |h [electronic resource] / |c produced by Mi Ling Tsui, Thomas Lennon
- 260 Publication, Distribution, etc. (Imprint)
  Example: Princeton, N.J. : |b FMG on Demand, |c c2003
- 300 Physical Description is optional. OLAC recommends using streaming video file (time) and subfield |b physical characteristics. Example: 1 streaming video file (11 min.) : |b digital, WMA file, sd., col.
- 5XX - Notes area is often extensive and should always start with 538. A note for system requirements tells what program is needed to access the streaming video and any other system requirements.
- 538 - System requirements: Name of special software; any other requirements.
   Example: System requirements: Windows media or QuickTime software
- 538 - Mode of access: World Wide Web
- 500 Streaming video (length : sound characteristics, color characteristics)
  Length should be included. Sound and color are optional. This should be used if 300 is NOT present.
- Other 500 notes as needed - May include the source of title and when the title was viewed.
- 511 Performers – if available
- 520 Summary - if available
- 505 Contents – if available
- 6XX - Subject headings as applicable.
- Other added entries as required.
- 856 – Electronic Access - URL Link to resource.

Fig. 2. Streaming video variable fields.

Depending on the amount of information available to the cataloger, there could be other variable fields included on the record. It is helpful to have a basic checklist. The document, *Best Practices for Cataloging Streaming Media*, provides a detailed list of both fixed and variable fields with examples (OLAC 11-25).

Finding Streaming Media in the Catalog

A common question is "How can I find all of the streaming videos in the catalog?" It is important to establish some method of gathering streaming media for the convenience of users. How this is accomplished may be determined by the capabilities of the local integrated library system. Some libraries use the genre heading (655) so it is possible to do a subject search. At the University of Nebraska at Omaha, the 655 field is not indexed so the decision was made to include a 500 note for streaming video so that it could be searched in the keyword index. "Streaming videos" is a legitimate Library of Congress subject heading but that heading should be used for items about streaming videos rather than gathering it as a format. Another option might be to use a local subject heading (690). The University of Nebraska at Omaha has used the 690 for a variety of reasons to make it possible to easily locate certain material. A list of 690 fields is maintained and it has been an effective method of identifying groups of materials although it was decided not to use it for streaming media.

To Create or Not to Create Separate Records

Cataloger's judgment will determine whether to create a separate record for a streaming media item when there is an existing record for a physical format such as a DVD or even a print resource. The best practice is to create separate records so that both formats can be fully described. *Best Practices for Cataloging Streaming Media* does include guidelines and coding suggestions for the single or separate record approach (OLAC 26-27). There are a number of situations that make a single record approach appealing.

The single record approach can be very practical when a link to a video or audio interview with an author or an author reading his work is desired. These audio and video pieces are becoming much more common, especially among children's book authors. Locating the record for the book and finding a link to an interview or book reading is very advantageous to our users as well as being a pleasant surprise when the extra content is discovered.

If separate records are used, information about the other format can be included in each record to assist in finding the additional record. A 530 field "Additional Physical Formats" may be included in each record.

Access Issues

For freely available items, creating an 856 link makes the process quite easy. For those items that are purchased and access must be limited to authorized users, it becomes a bit more difficult. License agreements with FMG Films on Demand required that access to videos be limited to University of Nebraska at Omaha users so IP authentication was not enough to prevent community users who walk in the door from viewing the videos. The solution at the University of Nebraska at Omaha was to create a web page and link the streaming video records in the catalog to that page. The user must enter their name and an NU ID number in order to access that page. Once authenticated, the user may view any of the available videos. This eliminates the need to authenticate repeatedly if the user wishes to view more than one video. Proxy links would require repeated authentication. Every institution will need to evaluate its own network

and the requirements of the content that is being made available as they decide on the best method of access. Access should be addressed during the acquisition process so there are no surprises after the items have been acquired.

Conclusions

Making streaming media easily available through the library catalog is very beneficial to users and enhances the catalog as a discovery tool. Guidelines to assist in the cataloging process have significantly improved and cataloging copy is available for many items. Documenting local practice and decisions can make the cataloging of new streaming media much easier. Access to licensed content must be carefully considered. Streaming media is rapidly growing in popularity and catalogers need to be familiar with the rules and tools necessary to organize and catalog this content

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Using *LibGuides* to Enhance One Shot Instruction Sessions

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Abstract

With the advent of Web 2.0 technologies librarians are seeking ways to integrate these new tools into their teaching. This presentation will discuss using *LibGuides* to aid in the teaching of two standard library instruction lessons. With all the changes in technology and in library instruction over the course of this decade, instruction librarians are still confronted with teaching many of the same concepts they have taught for many years. However, with the advent of Web 2.0 technologies we can find new and engaging ways to teach these standard concepts. This session will specifically address two long standing issues in Library Instruction; Internet evaluation and differentiating between scholarly articles and popular articles. I will detail how to teach these two concepts using *LibGuides* while actively engaging students in the lesson and sharpening their critical thinking skills in a one shot instruction session. Missouri Western University Library purchased a license to *LibGuides* in 2007 and has used this platform to create produce guides for student and internal uses. LibGuides enables librarians to integrate video, RSS feeds, podcasts, polls, other Web2.0 technologies and interactive tools into class specific guides. Although this presentation showcases the *LibGuides* product there are other tools that are similar to *LibGuides* that can be used to recreate the methods mentioned in this program.

Moving from *Meebo* to *Libraryh3lp*:
IM and Text Messaging Services at K-State Libraries

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Abstract

Please join K-State Librarians as we share our success story of implementing Instant Messaging and text messaging reference services. We will begin by addressing why we began offering IM reference service (in October 2006) and added text messaging reference service (in December 2007). During this introduction we will contend that our reasons are applicable to all libraries and explain why we believe libraries that have not yet begun offering IM reference should strongly consider doing so.

To help other libraries successfully launch or expand these services, we will then describe how easy it is to implement *MeeboMe* widgets and use *Meebo* to simultaneously monitor and respond to all questions coming through the widgets, through client-side IM applications, or through text messaging. In addition, we will stress the importance of promoting the services and describe some of the wonderfully successful efforts K-State Libraries have used to market them to undergraduates, graduates, and even faculty members! To help other libraries gain an idea of how the service can grow in popularity, we will provide usage statistics and show how frequency of use was positively impacted by implementing *MeeboMe* widgets on more websites and by actively promoting use of the service.

Then, to help other libraries understand the potential consequences of this growth, we will share some of the challenges that we have experienced as the services have become more and more

popular and as patrons have become accustomed to the convenience and speed of communicating with the library via online or text chat. We will conclude by discussing how we responded to these challenges in August of 2008 by moving from *Meebo* to *Libraryh3lp* and by increasing the number of staff we have monitoring the service during peak times. We will also help you decide whether *Libraryh3lp* may be a good option for your library!

Coursecasting with *iTunes University*

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Abstract

This paper compares the use of *iTunes University* on three campuses doing distance education, one in Illinois, one in Minnesota and one in North Dakota. Two librarians (one from Illinois and one from Minnesota) and a faculty member from North Dakota, teach classes and workshops using *iTunes University*. This audio & visual software tool enables instruction to be more mobile, allowing students to download lectures to their iPods or listen (and watch, in the case of vodcasts) to course materials wherever they have an internet connection. We will compare the *iTunes University* services at the three institutions to delineate similarities and differences and to pinpoint advantages and disadvantages of using this podcasting service as a teaching tool for information literacy and other forms of instruction. Further discussion includes the role of the library as a technology hub in providing such services on campus.

Introduction

From iPods podcasting to course-casting, audio and video delivery through subscription is proliferating on campuses. The literature is rife with examples of this kind of educational activity—consider the works of Brooks-Kirkland; Campbell; Dale and Pymm; Fernandez, Simo and Sallan; Hew; Richardson; and Wang. This paper will draw a comparison of *iTunes University*'s use on three campuses delivering distance education; one in Illinois, one in Minnesota and one in North Dakota. One librarian from Illinois, one information specialist from Minnesota and a faculty member from North Dakota teach classes and workshops using *iTunes University*. This Web 2.0 tool enables instruction to be multimedia (audio and video) and ubiquitous (mobile), allowing students to download lectures to their iPods or listen to (and watch, in the case of vodcasts) course materials wherever Internet connection is available. The following paper will compare *iTunes University* services at the three institutions to delineate similarities and differences and to pinpoint advantages and disadvantages of using such podcasting service as a teaching tool for information literacy and other forms of instruction. Further discussion includes the role of the library as a technology hub in providing such services on campus.

Literature Review

Pedagogues started looking into podcasts' educational value and implications as early as 2005, as illustrated by Campbell. Brooks-Kirkland confirm that the advent of Web 2.0 was to a great degree announced by the rapid increase of iPod-like gadgets and that education also geared toward the application of this tool. Dale & Pymm dubbed it "podagogy" and started researching the impact of podcasting as a learning technology. Empirical research on the usefulness of podcasting in higher education was initiated abroad by Hew and in the United States by Fernandez, Simo and Sallan. This research aims to contribute empirical findings, which can be further applied toward a better understanding of podcasting application and its application to good practices in higher education.

At the University of Illinois at Springfield (UIS), online education has been growing steadily since 1998 when the first online courses were introduced to the institution's credit offerings. The fall semester 2008 UIS census of online majors made up 25.5% of UIS headcount enrollment (1 in 4) and 30.3% of credits were generated in online courses (almost 1 in 3). In only 10 years UIS moved from being an entirely on-campus institution to being an institution where almost half (48.4%) of all students took at least one course online and where almost 1/3 (30.7%) are registered only in online classes. Perhaps even more telling is the fact that only 35.8% of UIS students were strictly on-campus students whereas 64.2% of all students are either fully online or taking at least one course online. With the exception of only a few departments most majors/minors are represented in our online offerings. Notably, this includes such disciplines as Theater and Biology where online instruction would present exceptional challenges due to the nature of the subject matter.

Clearly UIS provides fertile ground for librarians to be getting involved with teaching information literacy in an online environment. Almost since the inception of online teaching at UIS (1998), librarians have been involved in this manner. In Fall 1999, noting a decline in online enrollments for their 400-level Library Research Methods course, UIS librarians decided to experiment with converting the course into an online, asynchronous format. Almost immediately, the course met with renewed success and has remained online with steady enrollments ever since.

One of the techniques of teaching the course online before the proliferation of Web 2.0 was to produce movies demonstrating database usage and the online catalog. The "movies" were then placed on CD-ROMS and mailed to the students. This methodology proved useful for quite some time. But in the fast paced world of change that is the Web of today, library resources are changing so rapidly, that this method of delivery is no longer practical, desirable nor efficient. In the past year a UIS librarian has been actively involved in beginning to produce audio podcasts to deliver the course lectures (in tandem with the print lectures) online, thus giving students the option of listening to the lectures when that is convenient. Due to the highly visual nature of library instruction, however, the print lectures are still very critical. But also, now that podcasting has become so much easier to produce, we are in a place where it is once again practical and convenient to produce "movies" with the added advantage of being able to stream them or make them available online. The ease with which podcasts can be produced and edited also makes it easier to revise them to reflect changing online resources.

In addition to the online information literacy course which librarians at UIS teach, there is also an increasing need to complement the on campus course integrated information literacy instruction workshops with online solutions. There are two dominant formats of online instruction that have emerged and that involve the use of podcasts.

Model 1 – Recorded lecture: The librarian creates a vodcast that is a scripted audio-visual presentation of the workshop. The primary instructor for the course makes this available to his/her students. The librarian's contact information is provided and students are invited to connect directly with the librarian for one-on-one consultation.

Model 2 – Embedded librarian: The librarian creates a vodcast instructing students on critical resources and core concepts. But in addition, he/she becomes the primary instructor for the course during the time period wherein the course focuses on information literacy instruction. LIS342 (Liberal Studies 342: Conducting Liberal Studies Research) provides an excellent example of this model wherein both the course instructor and librarian collaborate on the development of discussion board questions that will lead up to and follow on the heels of the vodcast stream pertaining to library and information literacy resources/concepts. This model provides for increased engagement between the students and librarian and, at least anecdotally, seems to provide the greatest return on the information literacy educational experience in an online course integrated model.

The librarian who creates vodcasts is at ease with the technology. This may be a reflection of the significant amount of support as well as autonomy of usage that is available to faculty at UIS. There are two significant sources of online technology support at UIS.

The Educational Media Office (part of Information Technology Services) provides significant support in the way of a dedicated studio (E-Suite) which can be reserved in advance. In addition, they provide full sound and video editing services to filter out production imperfections and provide for a final quality product. The user (faculty member) provides their written script to the Educational Media Office professional staff along with editing remarks to indicate where something should be removed, where one had to stop and start over again (and at what point) along with any other production notes. Their staff members clean up the production and then deliver the podcast to the faculty member (in this case a librarian) for final approval. Following approval, Educational Media staff mount the podcast on the university's proprietary *I-Tunes* server. The course I.D. information that is provided to the Educational Media staff ties into the authentication system and thus only students who are enrolled in the course can access it. It is also possible for faculty to upload podcasts directly on their own for viewing on the open web.

The other support service that is available is through UIS Center for Online Learning, Research and Service. Here there are professionals who are well versed in online learning technologies as well as pedagogies. They do not provide editing services, but are available for consultation in the use of podcast (and other) technology as well as the most effective pedagogical use of such technologies. In addition, their Faculty Resource Center, a fully equipped digital resource lab, can be reserved by faculty for recording and research purposes.

Methods

A survey study was conducted in May-June of 2009. Faculty and students from three mid-western universities voluntarily took part in a survey about the use of podcasting in education. The three universities were University of Illinois Springfield (UIS), St. Cloud State University (SCSU), and the University of North Dakota (UND). The survey instrument was built by the three researchers taking into account the differences in the institutions and requesting feedback from a panel of professionals with experience in developing surveys. Data was gathered via electronic means utilizing the internet. The survey was compiled on *SurveyMonkey* and the URL to the survey distributed via various listservs to the faculty and students from the three institutions. Survey reminders were sent out on two separate occasions after the initial survey was sent in an attempt to increase the return rate. Data was exported from *SurveyMonkey* and imported into *Minitab* statistical software. The statistical assessments utilized were t-tests, Kronbach's χ^2 and multivariate ANOVAs.

Sample

Of a total of 254 respondents, approximately 64% (163) of the respondents were UIS, while SCSU contributed 20% (52) and UND 15% (38). The main reason for the low participation of the latter two universities is that the survey was taken near the end of the academic year and consequently participation was low. Of the respondents 67.3% were students whereas 32.7% were faculty (see fig. 1).
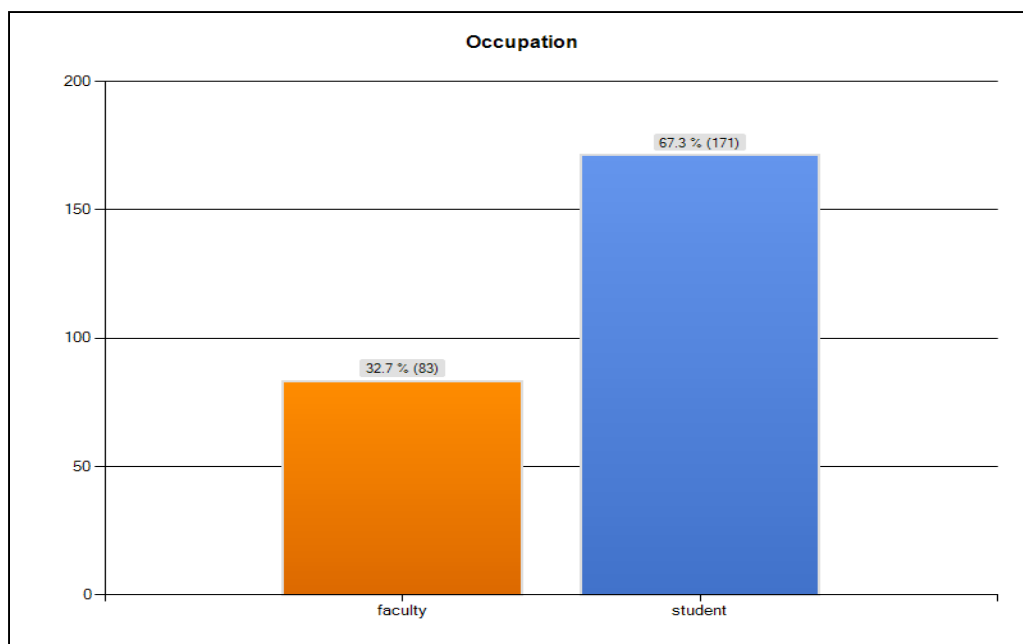
Fig. 1. Occupation of surveyed population

The majority of the respondents were female (53.4%) while 46.6% of the respondents were male. Almost 38% of the respondents hailed from communities with a population of less than 50,000 people (see fig. 2).

Total population of primary residence

- less than 50,000: 37.6 % (94)
- 100,000 - 499,999: 28.4 % (71)
- 50,000 - 99,999: 25.2 % (63)
- 1,000,000 and more: 6.4 % (16)
- 500,000 - 999,999: 2.4 % (6)
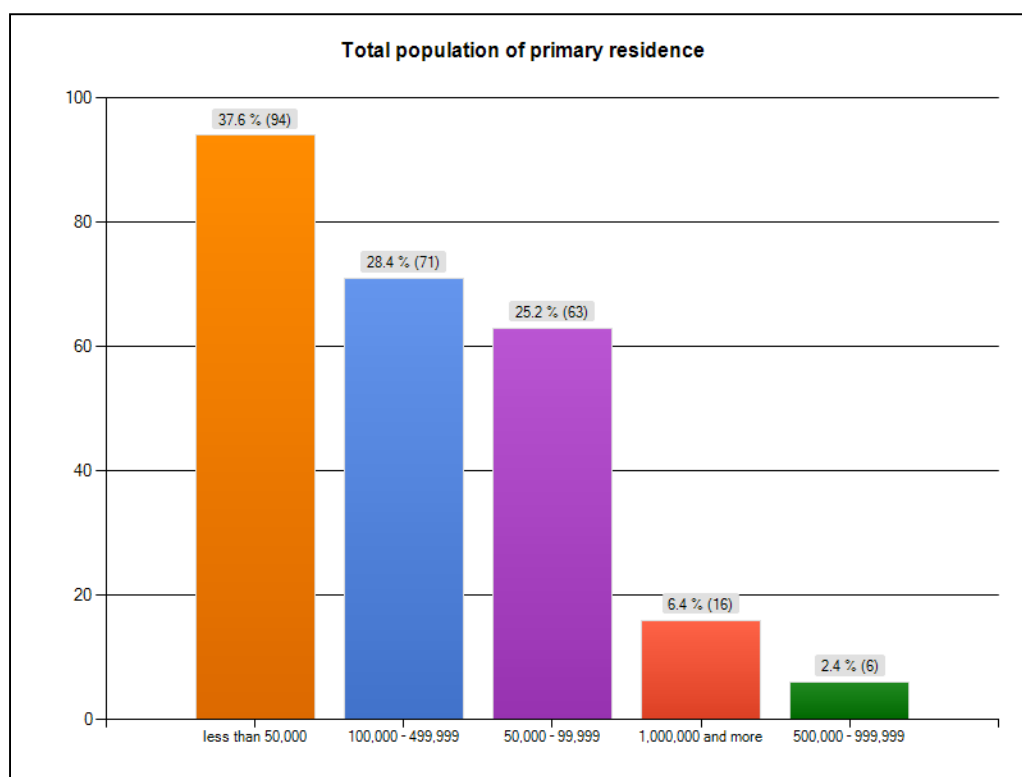
Fig. 2. Total population of primary residence.

Survey

The survey was comprised of 13 questions. The first set of questions asked for demographic information including university affiliation, occupation, age and gender of the respondent. In addition, the demographics included questions regarding the number of years the individual had been at the institution, the population of the primary residence and if the respondent categorized themself as a "campus-based" or a "distance education" learner or teacher.

Findings

A notable number of the respondents, 37.6%, hailed from communities with a population of less than 50,000 people (see fig. 2). Future research may explore whether there is a difference in the use of podcasting technology between those in larger population centers. When viewing the number of years at the institution, podcast technology was used more heavily by students and faculty in their first to fifth years at the institution with a fairly even break down of use within each year. A noticeable drop-off could be detected by those in their sixth year and then a substantial drop at year seven to year 32. Years seven to 32 remained relatively constant. Respondent's ages ranged from 18 years to 71 years.

The use of podcasting for course casting, and interviews is observed to be low. However, nearly 25% of the individuals indicated that they used podcasting for other educational activities, which would leave one to conclude that other activities such as media sound bites and procedural instructions might be some of the other activities within this realm of "other activities." When the candidates were asked if podcasts help them learn, acquire information and if the convenience of podcasting was a factor, the midpoint labeled as "neutral" (on a five point scale) was the most frequent choice from all candidates. Although when the "agree" and "strongly agree" categories were combined they always came out far above the "neutral" category with the categories "disagree" and "strongly disagree" scoring only in the single digit percentiles.

It is important to note that when the question of podcasting "playing a greater importance in classroom and on-line learning" was presented, the percentages in the "agree" and "strongly agree" by far outpaced the "neutral" category. It needs to be noted that nearly 20% of the individuals chose not to answer these questions regarding podcasting. However, it is also important to note that nearly all those who did not respond to these questions categorized themselves as "campus-based" teaching/learning. When subjected to a t-test for significance the latter question "playing a greater importance in classroom and on-line learning" scored highly (.849) meaning it was highly significant.

When the statistics were run on the specific research questions the results were somewhat different. Only 34.9% of the faculty had not used a podcast compared to 60.4% of the students who had never used a podcast. Yet the reverse was true with the frequency of use for podcasting. Of those individuals who reported using podcasts 71.9% of the students reported using a podcast less than one month ago, while only 28.1% of the faculty reported using podcasts that recently. When the statistics were run to determine if there was a relationship between the years at the institution and the usage of podcasts no relationship was found whether one looked at the students or faculty. Similarly no gender differences were found in the usage of podcasting.

There was a significant difference observed between the students and faculty who categorized themselves as "distance education" vs. "campus-based." As reported earlier, nearly 20% of the "campus-based" individuals chose not to answer the technology questions. Of the "campus based" students who chose to answer the technology questions, nearly 60% had never used a podcast. On the other hand, among the individuals who categorized themselves as "distance education" over 80% indicated that they had used a podcast.

Discussion

One of the most important findings in this study is that faculty who categorized themselves as distance education teachers had more use of podcasts than the students in the same category. The experience with podcasting was varied. It was expected and confirmed that a significant number of respondents (41.9%) did not use a podcast. This expectation was based upon the age of the respondents and the fact that a significant number of them are nontraditional students. However, the next group of significance (23.7%) had utilized a podcast within the last 12 months (see fig. 5). This would indicate that podcasting is becoming more common practice in the educational community.

Interestingly those faculty and students within their first six years at an institution were the most active in using podcasts. Perhaps it brings credence to the saying that youth more easily integrate into technology-enhanced pedagogies, whereas faculty become involved because of the pressures of tenure and such.

Results

Although the findings were varied, it might be concluded that most respondents completing the survey foresaw podcasting becoming a clear leader in distance education and in other educational applications. Although podcasting is a simplified recording and playback device it doesn't have high recognition or use among mainstream educators. However, distance educators embrace the technology and utilize it to a much higher degree.

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