Using Courseware Discussion Boards to Engage Graduate Students in Online Library Workshops

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Abstract

Librarians at Oregon State University (OSU) Libraries used the discussion board features of Blackboard courseware to create an interactive experience for graduate students at a distance who could not attend the on-campus “Literature Review Workshops.” These recently developed workshops have been extremely popular with graduate students across the disciplines and have generated a growing demand from distance education graduate students and faculty to offer similar information online. Reluctant to simply deliver content via an online tutorial, librarians sought to duplicate the workshop atmosphere by making the sessions available for a short time period online, asking participants to respond to discussion questions at specific points in the workshop, and offering audio-mediated online demonstrations of tools and resources. Student feedback and follow up requests for more workshops support the perception that this approach offered a rewarding learning experience that addressed their specific adult learning needs.

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Introduction

As part of OSU Libraries’ refocused efforts to serve the academic and research needs of graduate students, subject librarians have designed and begun to implement several tool and topic based workshops. One of the workshops that has proven most popular is the Literature Review workshop, designed to help graduate students more effectively use library resources in writing literature reviews for theses, dissertations, and grant proposals. Surprisingly, these onsite workshops have generated waiting lists since their inception in winter term 2007. Additionally, the workshops and participants’ word of mouth have also generated frequent requests for an online version of the workshops from those who could not attend, either because of scheduling conflicts or because they were distance education students. The challenge, as the workshop designers saw it, was how to create an online learning experience that was equivalent to what was offered in person.

Literature Review

Distance programs are among the fastest growing sectors of higher education in the United States (Duffy and Kirkley, 2004), and at Oregon State University (OSU), distance education enrollment has increased 255% since 2000 (Merickel, 2007) with a 17% increase in the last year alone. To respond to this trend, librarians have examined distance students’ information needs so they can better serve this growing component of their campus communities. Much has been written about library services for distance students on topics ranging from instruction to document delivery (Calvert, 2001; Gandhi, 2003; Jurkowski, 2004; Viggiano, 2004), especially after the creation of the ACRL Guidelines for Distance Learning Library
Services in 1967, which called for “equivalent” library services for distance students (ACRL Board of Directors, 2004). However, changing technologies and new instructional strategies call for continuing re-assessment of the approaches librarians use to provide services to distance students.

Research into distance students’ information seeking behaviors has revealed that distance graduate students have reported a preference for web-based library instruction (Kelley and Orr, 2003). This makes sense as many distance students have geographic or time barriers which prevent them from accessing in-person instruction of any kind. To evaluate whether or not online instruction is meeting students’ needs, several researchers have examined student perceptions of online learning and found that creating a sense of community and providing increased levels of affective support are keys to ensuring student satisfaction with online learning (Mullen and Tallent-Runnels, 2006; Song et al., 2004). Although these studies are not from library-based online instructional programs, librarians can apply this knowledge by designing online services that focus on community building, responsiveness to students’ concerns, and clarity of information.

A common barrier to library instruction for graduate students, whether on-campus or through distance programs, are faculty assumptions that graduate students arrive equipped with advanced research knowledge and skills (Hardesty, 1995; Schmehl Hines, 2006). Faculty also assume that if students need to increase their research and information management skills, they will learn these skills on their own (Genoni and Partridge, 2000). In other words, faculty do not see themselves as responsible for providing students with the opportunity to learn these skills. In addition, faculty are loath to give up their in-class time to activities they consider to be non-subject-related instruction, although they have reported a willingness to allow librarians to place
an instructional module on research and library skills within online courseware for their particular class (Schmehl Hines, 2006).

One way to circumvent the issue of faculty reluctance is to offer library workshops outside the auspices of a particular class. Workshops offered independently from a particular course can be targeted to a wide variety of graduate students and held at any time during the term. Stand-alone library workshops have focused on an array of topics, including how to use tools such as bibliographic management software (Harrison et al., 2005), theoretical concepts such as students’ responsibilities as future faculty (Fyffe and Walter, 2005), or the fundamentals of research and the best ways to navigate the library’s collection (Bradigan et al., 1987; Chibnik, 1997; Lightman and Reingold, 2005).

Distance students are distinct from traditional students not only because of their geographical location, but also because they tend to be older than average, and therefore may be classified as adult learners. Adult learners bring their own collection of learning preferences and needs; for example, they expect to be accountable for more self-directed learning, they prefer learning through hands-on experience, and they enjoy learning that addresses a specific problem (Dewald, 1999; Ross-Gordon, 2003). As a result, workshops that are course independent must still have learning objectives that graduate students can see as being applicable to their research or project needs. Even though thesis and dissertation expectations vary across subject disciplines, graduate students in most fields must write a literature review. Creating a library workshop that facilitates learning about the literature review process provides these adult learners with the motivation to participate in a way that will have direct benefits.

While library-created online workshops for graduate-level distance students are rare, online tutorials, especially for undergraduate students, are quite common. Undergraduate online
tutorials are frequently offered for on-campus as well as off-campus students and are often geared towards general freshman-level library orientations (Diel and Flett, 2003; Karplus, 2006; Viggiano, 2004), although some have been tailored for specific courses (Kearley and Phillips, 2004; Silver and Nickel, 2003). Online library tutorials have evolved in many directions. Some focus on concepts rather than tool-based instructional design (Holliday et al., 2006). Others attempt to emulate a one-on-one conversation within the tutorial to personalize the experience (Brunvand, 2004). Some incorporate evaluation and feedback within the tutorial (Brunvand, 2004; Kearley and Phillips, 2004). In short, there is a wealth of experience and information about the process of creating and designing online library tutorials for undergraduates, upon which librarians can draw in addressing their own student populations.

Online library tutorials have also been created for graduate students and often have qualities similar to undergraduate online tutorials. However, because distance graduate students are typically adult learners, the emphases on self-directed learning and practical tool-based learning are more common components of these tutorials (Ferguson and Ferguson, 2005). For example, graduate-level online tutorials often include instruction on how to use a subject-specific database so that students within that discipline will see a direct application to their studies (Behr, 2004; Caspers, 1998). These online tutorials are usually provided within the context of a particular class and often attempt to assist students with the literature review process (Behr, 2004; Beile and Boote, 2004; Caspers, 1998). Occasionally such tutorials are presented as stand-alone instructional modules, detached from a specific course (Block, 2007; Ferguson and Ferguson, 2005); however, typically they have not found a broad enough audience to be viable. Examples of online tutorials embedded in specific courses are rare, with some exceptions in Library and Information Science, Education, and Nursing.
Because online library tutorials require a higher level of student self-discipline to complete, tutorial designers have tried to integrate interactive elements that will keep students motivated to complete the tutorial and also result in a richer learning experience (Dewald, 1999). Interactivity most often takes the form of assessment tools, such as quizzes, that check on what students have learned up to that point in the tutorial (Diel and Flett, 2003; Viggiano, 2004). While quizzes are an excellent way to create interactivity for undergraduates, graduate students may resist activities they perceive as busy work, unless they see a direct connection to the practical needs of the research and writing projects they are working on for their courses, theses, or dissertations.

Another way to create a sense of interactivity in online environments is through discussion boards. Discussion boards are a common feature of course management systems such as Blackboard, which are already used by several libraries to host online tutorials (Karplus, 2006; Lillard and Dinwiddie, 2004; Silver and Nickel, 2003). However, few online library tutorials report including a discussion board element in their tutorial as a way to improve students’ engagement with the content and to create a sense of community in the class. The decision to leave out this asynchronous discussion element is likely because most library tutorials are designed for one-time library instruction courses where continued communication is not expected (Dewald, 1999).

Tutorials accompanying credit courses, in which students were required to participate in a discussion board forum, are the exception to the trend (Mulherrin et al., 2004; Tuñón, 2002); however, Mulherrin and Tuñón’s examples reported varying rates of success using discussion boards. When the discussion boards were included in an undergraduate tutorial where students discussed topics related to specific activities they worked on during the tutorial, the librarian
instructors were pleased with the quality of students’ discussions (Mulherrin et al., 2004). When the discussion boards were used in a graduate tutorial where the required discussion topics were about more esoteric information topics not directly related to students’ research projects, the use of discussion boards was less successful (Tuñón, 2002).

At OSU Libraries, librarians saw the need to create an online workshop that met the needs of distance graduate students from a variety of disciplinary backgrounds. To provide these students with an experience equivalent to that of on-campus graduate students, the organizers endeavored to create an online experience that not only provided them with the information literacy skills to successfully tackle their literature reviews, but also with an outlet for discussion and interaction with other distance graduate students and with the librarians leading the workshop.

Creating the E-Literature Review

Background Work

Addressing the needs of graduate students at a distance requires establishing relationships with those who can best reach the students, identifying and using the most appropriate technologies for communicating with students, and of course, creating the content. The OSU Libraries have already established a good working relationship with the distance education program through persistent outreach efforts at many levels. Individual librarians target subject instructors who teach distance courses and offer assistance to their students through e-mail, courseware pages, and in-person meetings.

From the inception of a distance education program at OSU, there has been a designated distance education librarian, who has served as coordinator between the libraries and the distance education administration. As a result, all distance education courses now include a “Libraries”
tab in Blackboard, the online courseware used at OSU. This tabbed page provides students and faculty with links to the OSU Libraries’ catalog and article databases as well as to various services such as interlibrary loan, and sources of assistance such as subject specific librarian contacts. When librarians approached the distance education administration with the idea of providing a time-limited online workshop for graduate students to help them with the literature review portion of their graduate writing projects, the distance education administration was welcoming and helpful.

Librarians at OSU have recently investigated various options for moving instruction activities online and examined both the functionality and the complexity of learning how to use particular software packages. Captivate (Adobe Systems Inc., version 2), a screencasting software package, was selected as the best choice for providing both an acceptable level of interactivity and a reasonable learning curve for instruction librarians. The decision to use Blackboard courseware as a delivery channel for online instruction was largely pre-determined because of the institutional licensing agreement. OSU distance education students are required to use Blackboard for many courses, and it seemed logical to work within the confines of something familiar to the students. Blackboard also provided many of the preferred interactive and informational features, including discussion boards, the ability to embed Captivate links, an announcements feature, a place to post online handouts, a section for biographies and contact information for the librarians leading the course, and the ability to track student views of the Captivate presentations. Additionally, there is already strong technical support in place for the Blackboard system through the OSU distance education program administration.

In the fall of 2006, a re-focusing of library service efforts for graduate students provided the impetus to create an on-campus Literature Review workshop. The initial offering received an
overwhelming response with more than twice as many students requesting to attend as the library had capacity to serve. There were also immediate requests from on- and off-campus students to provide the information in an alternative format, preferably online. Librarians delivering the workshops were reluctant to provide the content, which was created in a PowerPoint presentation, as a podcast or video recording to those who could not attend the workshops for a couple of reasons. The workshop included several in-depth visual demonstrations of how to effectively use tools such as article databases, current awareness alerts, and social bookmarking sites. Additionally, the workshops were designed to be highly interactive, placing an emphasis on peer networking to share ideas and experiences between the attendees. Librarians continued to offer the Literature Review workshops on campus every term while still considering how to provide an equivalent experience for off-campus students.

**Workshop Content**

The content of the Literature Review workshop addresses both conceptual and practical issues. A brief overview of the topics covered follows, with indicators for components that involved group discussion (*) or a demonstration (#):

- Introductions of presenters and participants*
- Definition and purpose of the literature review*
- Considering the subject specific nature of the literature*
- Determining need for and criteria of comprehensiveness*
- Process and strategies for conducting a literature review*
- Learning how to read and recognize patterns in the literature*
- Effective database searching#
- Useful library services such as interlibrary loan#
• Organizing searches and results (e.g., saving searches, bibliographic management software)
• Keeping up with the literature (RSS feeds, Table of Contents alerts, social bookmarking, search alerts)
• Contacts for further help and participant evaluation of workshop

Turning an On-Campus Workshop into a Online Workshop

To try and re-create some of the interactive and visually complex aspects of the face-to face workshop, a screencast using Captivate was created and posted through the Blackboard courseware for a limited two week period. This condensed timeframe was chosen for several reasons. Because this was a workshop, not a class, a shorter posting time more closely matched that concept. To encourage participation in the discussion boards, a reduced time commitment would make students more likely to keep checking back to respond to other people’s comments. The two-week format also made the workload easier for the librarians involved, because they did not need to monitor the discussion boards indefinitely. Finally, a synchronous chat session model for workshop discussion was initially considered, but an asynchronous discussion model was chosen instead. Because it is difficult for distance education students, in particular, to find a common time to meet online, the asynchronous presentation allowed more students to participate.

Librarians wrote a detailed script of the information to cover. The workshop was broken into four separate parts to address the challenges listeners face when working with extended online presentations, and to create opportunities for participants to share experiences, comments, and questions on the discussion board. Captivate allowed importing of the PowerPoint presentation and offered an audio overlay option. Talking points of a given slide were visually highlighted to correspond with the information as it was delivered orally. Captivate also accommodates
insertion of screen captures with audio overlay; this was the strategy used for the web-based
demonstration components of the workshop such as database search strategies

[Insert Figure 1 here Screencast of Advanced Database Search Techniques]

Again, it was helpful to write out a detailed script to accompany the search demonstration.

To establish a personal presence for online participants, the introduction of presenters was a
little more detailed than in the face-to-face workshop. For example, pictures of the presenters
were included in the workshop, and personal experiences with writing literature reviews and
working with students engaged in the literature review process were shared. Participants were
asked to share their introductory information with one another on the discussion board in
Blackboard

[Insert Figure 2 here Discussion Board for the Online Literature Review Workshop]

Some material, such as the definition and purpose of the literature review, which was
discussed in small or large groups in the on-campus workshops, was covered via lecture by the
presenters in the online version. Strategies and processes for doing a literature review were
shared online among participants in the discussion board, and a PowerPoint presentation and
lecture summarized key points of this discussion. In addition to creating demonstrations for
portions of the workshop, the presenters referred participants to free-standing online tutorials,
which were also created in Captivate, for example, using EndNote or setting up RSS feeds.

Once the tutorial modules were created, the presenters worked with the distance
education department to make them available via Blackboard. The dates for the workshop were
publicized through the distance education department, the graduate school, and through
individual librarian contacts with faculty and departments working with distance education
students. Potential participants were directed to contact the presenters so they could be added to
the Blackboard workshop site and participate fully when the workshop opened. One week into
the workshop a reminder was sent to enrolled participants who had not yet participated. Three
librarians, the two presenters and the distance education librarian, were scheduled to monitor the
discussion boards on a regular basis to answer questions, offer reactions, and respond to
participants’ comments.

**Evaluating the Workshop**

**Workshop Attendees**

Registration for the Literature Review workshop was impressive, especially considering
that our distance students were not familiar with this style of workshop, and that the workshop
was not required for any particular for-credit class. Twenty-nine students from five different
departments signed up for the workshop. Participants came largely from the College of
Education, which has the largest number of graduate level distance education courses that require
a thesis or dissertation, and therefore, the greatest number of students likely to need such support.
Based on data gathered from Blackboard, fourteen students actually viewed the lectures and
seven students participated in the discussion forums. Other programs that included discussion
forums required students to participate in the forum for a grade (Mulherrin et al., 2004; Tuñón,
2002). The fifty percent participation rate in these voluntary discussion boards can serve as a
benchmark for other programs seeking to implement this type of instructional service. While it
is unfortunate that not everyone who watched the lectures chose to participate in the discussion
forums, those who did participate in the discussions asked in-depth questions and held
meaningful discussions with their fellow participants and the librarians.

**Discussion Forums**
Students were asked to begin their discussion board conversations by introducing
themselves. The presenters were pleased to see the participants energetically jumping into their
introductions with spirited welcomes to each other, detailing where they lived, what departments
they were in, and what their research projects were about. They quickly moved into
recommending tools, such as EndNote, to one other. They also commiserated with each other
over the length of time since they had last attended school and the vast array of electronic
options now available to search for literature. Students mentioned research difficulties they were
having such as being sidetracked by tangential research ideas and the difficulties they had
organizing the information they found. Students also reported using other university libraries
closer to their homes and their desire to learn more about OSU Libraries. During this
introductory stage on the discussion boards, suggestions from peers seemed to be an effective
way for students to learn about new search tools.

The three librarians monitoring the discussion boards also frequently entered the
conversations to answer specific questions about library resources, such as the difference
between bibliographic management systems like Zotero and EndNote. The librarians also made
sure to reiterate services available to distance students, such as interlibrary loan, document
delivery, and the opportunity to directly contact a librarian. In addition, the introduction
discussion board was an effective place for the librarians to interact with students in a more
personal way and to let them know the presenters were real people whom they could contact with
their research concerns.

The second discussion board asked participants to discuss how they had conducted
research that required a written product in the past. Several students mentioned fairly
sophisticated search methods, such as choosing specific article types to search, for example case
studies or dissertation literature reviews, or finding prominent authors who write about their topic and then searching for these authors’ works. Many students used some kind of organizational strategy, such as keeping a spreadsheet of all the articles they have read with annotations, maintaining a binder of articles or an electronic folder of the articles they found, or using an EndNote library. One student even created a critical summary to help her process the articles she read. Even though many of the students reported using effective searching and organizing strategies, one student verbalized that she still felt she might not be doing her research in the most effective way. Another student noted the difficulty of finding the right keywords to conduct searches and the difficulty of conducting research on multi-disciplinary topics.

During this discussion the librarians provided affirmation for approaches regarded as effective and provided suggestions when students mentioned strategies that had some flaws, such as one student’s method of searching only for full-text articles. Librarians also provided some additional ideas of databases to try or specific search strategies that might help move a student’s research forward. Students relied less on their peers’ comments in this part of the discussion forum and looked to the librarians for more expert advice on how to augment their current searching approaches.

The last discussion board asked students to bring up any additional questions they might have about the literature review process. Students had relatively few questions or concerns at this point. One student did mention a technical problem she was having using the interlibrary loan system; however, the main question students had was about how they could access the information presented during this workshop in the future. Because the workshop was structured to last for a limited amount of time, the actual URLs for the screencasts had been hidden from the participants. At students’ appeal, the URLs were made available with the caveat that they
should not share them with people who had not participated in the workshop. This request was made so the participants would realize the workshop had been designed so that they would learn the most from both watching the screencasts and participating in the discussion forums. In addition, students were reminded that they could set up appointments with subject librarians if they needed more help.

Workshop evaluation feedback

There were some technical problems with the web-based evaluation form used, which made it appear that the evaluation had been filled out erroneously, and as a result only six participants returned the evaluation form. The average workshop satisfaction level was a 4.3 on a scale of 5. When asked about the two most important things they learned in the workshop, the most popular response involved learning new ways of keeping up with the literature in their field. Under the umbrella of the “keeping up” topic, two students specifically mentioned using Ingenta’s Table of Contents alerts. Two students mentioned an OSU Libraries’ website called “Keeping Current with Research” that has online tutorials for using several Web 2.0 tools for current awareness, such as setting up search alerts using Ingenta and EndNote. The high rate of responses related to keeping up with research reveals the uncertainty students feel when they are tasked with becoming conversant about all the information surrounding their particular topic of research.

The responses also suggest students are largely unaware of the tools available for keeping up with research. Some library-specific tools, such as Ingenta and database-specific search alerts were discussed, as well as Web 2.0 tools that can be used outside of the library context, such as del.icio.us and RSS feeds. Both types of tools were new to many of these students,
possibly because many of them previously attended school at a time when few electronic resources were available, and also because these current awareness and organizational tools are not absolutely required for performing literature searches, so they may never make it onto the students’ radar. Additional items students listed were how to use OSU Libraries and the library website better, how to narrow a search, how to refine keywords, new databases they had not used before, and how to do a cited reference search.

In addition to asking students what they learned in the workshop, they were also asked what their remaining questions were. These responses fell into two categories: questions about specific tools and questions about how to research their topics. In the tool category, students still had questions about how to use EndNote. This was a reasonable problem, as the overview of EndNote was only meant to make students aware of the option of using a bibliographic citation management system and how to get further EndNote training. The workshop was not meant to create proficient EndNote users.

Students’ continued questions about how to research their topics likely reveals the typical uncertainty that graduate students feel as they are delving into a new research area (Onwuegbuzie and Jiao, 1998). It is possible that several of the students in this workshop were still learning how their topic is discussed in the literature, and were probably trying to determine where exactly they fit into this conversation. Based on our experience interacting with students in the online discussion board format, at this point in the research process, librarians may be most effective as sounding boards to allow students to talk through their research process. Librarians can also provide pointers for graduate students at this stage about which databases or organizing tools may be most effective to keep them from becoming frustrated with the research
process. For distance graduate students, appropriate venues for these conversations may be discussion boards, emails, instant messages, or phone calls.

When asked what other workshop topics might be beneficial, students provided a wide variety of responses including how to write their dissertation, the art of reading scholarly articles, how to determine if their topic is relevant, troubleshooting searches and results, how to know what they are missing, how to determine which articles are not relevant, and receiving feedback on their actual searches. Students in the on-campus version of this workshop also frequently request more assistance with the writing process. Members of the OSU community are in the process of exploring ways to provide more of this support to on-campus graduate students. Hopefully, options will arise which might also be suitably adapted for distance students.

Students’ questions about how to research their topics and how to perform searches may reveal one of the difficulties with conducting a workshop online. The screencasts do include the same database demonstration searches performed in the face-to-face workshops, so the information about the functionality of the tools is identical in both presentation venues. However, because the presenters are not physically with the students when demonstrating these searches, the opportunities for direct questions about the process are more limited. The on-campus workshop does not provide opportunities for students to pursue their own searches, and yet these students rarely complain about this decision. Distance students may feel less confident trying out new database search strategies because they do not have officemates to compare notes with or a librarian close at hand to review their unsuccessful searches. A potential solution to this problem could be to emphasize and facilitate one-on-one discussions with the distance librarian or their subject librarian as a follow-up to participation in the online workshop. While these librarians might not be able to watch the student perform the search, they may be able to
use real-time applications, such as instant messaging, to walk the students through the search process.

Fortunately, students reported few technical difficulties with the class. One student reported difficulties navigating the Blackboard interface, and another student pointed out some syncing problems with the audio and video in the screencast which were already known. At the beginning of the workshop, a fair amount of time was required to make sure students’ user names were properly loaded into Blackboard. Some students also needed additional assistance logging into the Blackboard system because they had not previously used it. While there were some drawbacks to using Blackboard, overall it provided a convenient interface to include all the pieces we desired for this workshop, most importantly a discussion board, links to the screencasts, and statistical tracking tools to monitor how many students attended the workshop.

**Discussion**

Instead of creating a Literature Review online tutorial, the presenters chose to design an experience for these distance education graduate students that would be equivalent to the onsite Literature Review workshops. While online tutorials fill an important need, especially at the undergraduate level, the workshop style was more appropriate for these graduate students, who are also adult learners. Because the workshop was not attached to a specific class and participation was voluntary, the presenters felt some of the interactive techniques typical to online tutorials, such as asking quiz questions or creating scenario-based approaches, would be viewed by the students as a poor use of their time. As a result, the presenters looked for other ways to construct interactive elements in the workshop, while still providing an overview of the research tools graduate students need.
Creating a sense of community online for these students provided the desired interactive element and helped spur conversation and augmented the learning that took place during the screencast lectures. Several key elements were used for creating a successful online community. Discussion boards were set up for a limited time period so conversations could develop within a more natural timeframe, rather than being drawn out indefinitely. Space was established for students to share specific concrete knowledge with their peers, such as the importance of bibliographic citation management in the overall writing process. “Socio-emotional discussion questions” were posed (Rovai, 2007, p. 80) such as the introduction section of the discussion boards, which allow students to share concerns and engage at a more personal level. Finally, the questions asked in the discussion forums were specifically created to be task-relevant, focusing on facilitating their literature reviews, rather than theoretical or tangential questions, which did not directly affect their research needs.

The topic of the literature review process was both generic enough to attract students from several different disciplinary backgrounds and sufficiently salient in graduate students’ careers to motivate and fuel participation in the workshop. Moreover, the highly relevant nature of the topic appealed to these adult learners as they prioritized their level of involvement in outside learning opportunities. Overall, this experience suggests the workshop was a useful offering that addressed a recognized need for the growing community of distance education graduate students.

Creating and hosting an online workshop for distance education students convinced the presenters that, with thoughtful planning and appropriate technologies, the online medium can serve as a viable platform for holding workshops. The rich interactive component resulted in rewarding learning experiences for graduate students. As a direct result of offering this online
workshop, the Education Librarian received requests to provide on-campus sessions addressing the literature review process. Participants were excited about the workshop and said that they would mention it to their fellow graduate students and would encourage them to participate the next time it was offered.

Future directions for this project include offering the workshop each term or as long as demand persists. Librarians are continually working to increase their skills with online instructional technologies such as the screencasting software used for this workshop. Hopefully, installation of a new computer to host the software will also eliminate some of the technical problems with synchronization between audio and screenshot elements. Consistent with the OSU Libraries' overall strategic direction, the workshop developers will find more effective ways to assess participant perception of learning in the online workshop experience. The success of moving this onsite workshop to an online version provides ample justification for making other library workshop offerings available to the growing population of graduate distance education students.

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Figure 1.
Figure 2.