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Providing Information Literacy Instruction to Graduate Students through Literature Review Workshops

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Providing Information Literacy Instruction to Graduate Students through Literature Review Workshops

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Abstract

As future professionals, graduate students must be information literate; however, information literacy instruction of graduate students is often neglected. To address this need, we created literature review workshops to serve graduate students from a wide range of subject disciplines at a point of shared need. Not only did this strategy prove to be successful in reaching a large number of students from a wide range of subject disciplines, the data gathered from the students identified some of the gaps graduate students have in their knowledge about library services.

Introduction

Library-based instructional services for graduate students have received limited attention to date. Faculty advisors assume that either their graduate students arrive at graduate school competent in research skills, or that these students should discover how to carry out research through a process of self-discovery. As a result, few library instruction services are targeted toward graduate students. Graduate students, like undergraduates, come from a wide variety of educational backgrounds, and frequently have knowledge gaps about finding and using information that can impede their success as researchers. When librarians and faculty advisors simply assume that these students are comfortable navigating library resources or appropriately evaluating information, we miss an opportunity to help them transition from novice researchers to expert scholars.

Oregon State University (OSU) has a graduate student population of approximately 3,500 students, and approximately 400 new graduate students arrive every year. The OSU Libraries began holding fall orientation sessions for these students several years ago. While these orientation sessions provided students with a basic idea of the services available through the library and an introduction to the library's physical space, evaluations collected from graduate students after the orientation indicated that students still perceived a need for more in-depth coverage of library services.

Because patrons are most open to library services when they have specific information needs, we examined the research problems that arise in a graduate student's career. Information literacy skills especially important for this audience include discovering how to complete a comprehensive review of the literature, learning how to evaluate sources within the context of their particular projects, and properly citing and including these sources within their theses or dissertations. Based on our examination of these needs, we created a workshop for graduate students focusing specifically on the literature review process. Our approach of providing sessions for graduate students outside a specific classroom setting, yet focused on a common problem enabled us to open up our instruction to all graduate students on campus regardless of departmental affiliation or faculty buy-in. We will discuss why we chose to teach graduate students about the literature review process, what we covered in our workshops, and what we learned from planning and implementing this instructional service.

Literature Review

Despite the vast amount of literature devoted to increasing the information literacy of college students, surprisingly little has been written about information literacy services for graduate students, or even library services in general for graduate students. Much of the library literature about graduate students focuses on how well the library's collection serves their needs. For example, researchers have determined that graduate students primarily use journal articles rather than books, prefer electronic access whenever possible, and desire cross-database searching (Chrzastowski and Joseph 2006; Maughan 1999; Jankowska et al. 2006). While providing appropriate collections for graduate

students is certainly a key role of academic libraries and librarians, ensuring that students know how to appropriately use and evaluate the information in those collections must not be neglected.

In addition to examining how graduate students perceive the library's collection, there is a small body of literature that examines graduate students' information seeking behaviors. Graduate students, like many information seekers, learn about the library and discover information in their field from their peers (Brown 2005; Kuruppu and Gruber 2006). Once graduate students realize that advice from their fellow students is insufficient for finding adequate information, they appreciate having a personal library liaison available to guide them through the research process (Jankowska et al. 2006; Sadler and Given 2007).

When researchers observed the way graduate students used library and information tools, they found their skills and decisions about appropriate tools to use varied greatly by discipline (Chrzastowski and Joseph 2006; George et al. 2006). However, perceived lack of time impacts willingness to try new library tools and techniques among graduate students in all disciplines (Parrish 1989; Sadler and Given 2007). While these information seeking behavior studies have surveyed the ways graduate students discover library services and can inform how graduate student services are implemented, they infrequently take the next step of implementing or suggesting services that will guide graduate students in tackling their specific information problems at the point of information need.

The ACRL Information Literacy standards (2000) are an appropriate guide for both undergraduate and graduate students, and graduate students often demonstrate competency with several of these standards because of their undergraduate educational experiences. Surveys of graduate students found they assessed themselves as able to successfully determine the extent of information needed, access this information effectively, evaluate information critically, incorporate information into their knowledge bases, and use the information effectively to accomplish a specific purpose (Brown 1999; Perrett 2004). However, because these surveys represent self-assessments, students' actual skills may not always match their perceptions or faculty expectations (Perrett 2004).

Faculty often believe graduate students arrive at graduate school fully able to conduct scholarly research (Dreifuss 1981; Hardesty 1995). Knowledge gaps are still present for such basic library services as interlibrary loan, subject database searching, and library consulting services (Dreifuss 1981; George et al. 2006; Liao et al. 2007). These faculty assumptions can do a disservice to students and create challenges for librarians trying to provide increased information literacy services to graduate students. Because of these assumptions, faculty may be unwilling to provide time within class for library instruction or they may neglect to mention librarians and libraries as resources. Several researchers found graduate students recognized their information gaps, and would have liked targeted library instruction after they settled into the routine of school (Kuruppu and Gruber 2006; Washington-Hoagland and Clougherty 2002).

As a step toward increasing graduate students' information literacy skills and in order to

reach out to graduate students on their campuses, several librarians reported some type of instruction or introduction to the library at their institutions. For example, librarians are sometimes part of new graduate student orientation programs. Successful communication of library services during these orientation programs varied from reported low attendance (Parrish 1989) to positive responses to a carefully tailored program (Piette and Dance 1993). Typical orientation tours seldom provide the opportunity to engage students in a conversation about their information needs and problematic research questions. Students are too new to the institution and to their research projects to have precise information needs at that time, although the goals of alleviating students' library anxiety and promoting library services can certainly be achieved through such orientation programs.

Library instruction has also been embedded within graduate-level courses. A few examples of both one-shot library instruction sessions (Beile and Boote 2004; Ewald 2006; Schmidt 1993) and cooperative teaching arrangements between instructors and librarians throughout the term (Green 2006; Green and Bowser 2006; Proulx and Mallet 2006; Toth 2005) have successfully communicated library services and information literacy skills to students. These partnerships most frequently occur within social science or education graduate programs, which tend to offer more structured thesis research and writing courses. Topics covered in these instruction sessions include choosing appropriate research topics (Ewald 2006), developing search strategies (Green 2006; Schmidt 1993), choosing appropriate search tools (Ewald 2006; Green 2006; Schmidt 1993; Toth 2005), evaluating sources (Green 2006; Toth 2005), and discussing how to conduct a literature review (Beile and Boote 2004; Green 2006; Green and Bowser 2006; Schmidt 1993; Toth 2005).

In addition to course-driven library instruction, the workshop approach has also been used for instructing graduate students across many subject disciplines. Workshops are independent from a particular course, so they can be targeted toward a wide variety of graduate students, and they can be held at any time during the term. Workshops for graduate students can focus on teaching students how to use a particular tool, such as bibliographic management software (Harrison et al. 2005). Alternatively, they can explore more theoretical concepts such as students' responsibilities as future faculty, the intricacies of copyright (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).

A common problem with creating workshops independent of a particular course is that students do not have a specific project or goal in mind with which to connect these library services. While thesis and dissertation expectations vary considerably across subject disciplines, graduate students in most fields share the need to write a literature review. In spite of not having an attachment to a particular course, graduate students working on a literature review do have a specific project with obvious ties to library services.

Some librarians have already capitalized on the realization that graduate students often require librarian assistance at this particular point of information need. Within the collaborative teaching arrangement established in a thesis writing course for education

graduate students, Green and Bowser (2006) guide students through the literature review process with the help of a literature review rubric. Nimon (2002) established a for-credit course designed specifically for guiding all graduate students at her institution through the literature review process.

At OSU, we recognized a need to improve our services to graduate students. Our goals were to improve information literacy outreach to graduate students; providing them with an understanding of the purpose of the literature review process, exposing them to tools that would help them successfully carry out their research, and creating an understanding of the place of the library within their continuing education process. At our institution, team-teaching graduate level courses is not currently the norm, and we particularly wanted to reach out to students in disciplines that do not have courses designed to help them with the thesis research process (the most common fit for faculty-librarian collaborations reported in the literature). After exploring the literature, we determined that a workshop open to all graduate students would best meet our goals and serve our students' needs.

Creating a Graduate Student Services Program

The first step toward addressing the need for enhancing graduate student services was appointment of a graduate student services coordinator. The coordinator reviewed the literature, examined other university libraries' web sites for types of graduate student services being offered, and surveyed incoming graduate students. The survey of graduate students showed that incoming graduate students are interested in a variety of workshop topics, including an overview of the library in relation to their thesis research. The coordinator also discussed graduate students' needs with other library colleagues to identify various points where the library is most helpful and conversely, where it is most daunting. A graduate student services committee was formed to begin implementing library-based graduate student services. Based on the background research and successes elsewhere, the committee agreed that an effective point for graduate student information literacy instruction on our campus would be within the context of the literature review process.

Developing a Literature Review Workshop

The next steps required working out details for the content and format of the sessions and developing a promotional plan. Our research and observations of graduate student library use, along with our personal experiences writing graduate theses, confirmed the importance of students acquiring a mental framework for the literature review process. We used Fink's (2005) guide to preparing a literature review as a solid foundation for establishing the theoretical overview of the purpose of a literature review. Based on our previous observations, graduate students are most interested in learning about the practicalities of carrying out their literature reviews, as well as strategies for delving deeper into the library tools available to them. Once the theoretical framework was established, the remainder of our content focused on information management and library research tools appropriate for graduate students.

Next, we examined the format for the session based on information from the graduate student survey as well as past experiences in hosting sessions for graduate students. A conference-style workshop approach similar to a program at Northwestern University ([Lightman and Reingold 2005](#)) seemed to most closely match our goals for engaging students in an interactive session geared toward meeting their information literacy needs. This approach, which includes pre-registration as well as some personalization of the session, requires more effort on the part of the students ahead of time, thereby creating a sense of buy-in and commitment. Personalized packets were created for each students, each containing a preprinted name tag, the business card of his or her subject librarian, an outline of the agenda for the workshop, flowcharts of how to find information and how to do a literature review, a flyer for the on-campus thesis/dissertation support group coordinated by campus counseling services, and an evaluation form. We planned for food and beverages to be available, and arranged the room into several small group seating areas with flip charts and markers to facilitate group work during the session. Each workshop session included two library instructors to facilitate a conversational tone, and to add multiple perspectives on how to approach library tools and the literature review experience.

We promoted the workshop to all graduate students on campus via an e-mail distributed through the graduate school to graduate advisors to forward to their students. Subject librarians also sent e-mails to their department liaisons to distribute, and paper flyers were sent to departments to post on their bulletin boards. The wording of the announcement for the workshops focused on common questions students have when doing a literature review, such as how to get started, how to keep track of sources and searches, how to keep up with new literature in their field after their initial searching, and how to best use library systems. To accommodate the broadest range of schedules, we offered the workshops twice in the same week, once in the morning and once in the late afternoon. Students were required to register online for the workshop specifying the day and time they planned to attend. They then received a confirmation and were asked to fill out a pre-assessment survey designed to elicit information about their previous research experiences (see [Appendix](#)). A reminder e-mail was sent to the registrants the day before their workshop to encourage higher attendance. This conference-style approach to the workshop demonstrated that we considered the students professionals and encouraged their participation, creating an environment distinct from typical classroom instruction sessions.

Although this was the first time OSU Libraries offered this workshop to graduate students, we speculated that potentially 25 people might show up, based on our prior experience with graduate student events. Much to our surprise, over 150 people registered the first term we offered the workshop during winter term 2007. As a result, we recruited more librarian instructors and added another session to accommodate as many students as possible. The next term we offered the workshop (spring term 2007) 70 people registered.

The registration form asked students for their departmental affiliations, but we needed to know more about our student participants to ensure our workshop met their needs. Each

registrant received an e-mail pre-assessment asking about his or her length of experience at OSU, the level of degree sought, experience conducting library research and general expectations for the workshop (see [Appendix](#)).

The pre-assessment information we collected generally confirmed the overall content plan, but led to some adjustments. Along with Fink's ([2005](#)) theoretical model, our sessions challenged students to consider the purpose and audience for their literature reviews, the final product that would include their literature review, as well as their advisors' or departmental expectations for their literature reviews. In small groups, students discussed their previous approaches to library research, highlighting successful strategies such as citation searching, footnote chasing, author searching, using review articles, and recognizing patterns in the literature. Another important discussion focused on reading scholarly papers with their questions in mind and taking conscious note of the relationship between the particular paper and their research purposes. Students shared tips about how they remember what they have read and methods they have used to effectively organize their notes, papers, and citations.

These theoretical discussions segued into demonstrations of concrete applications of the strategies using specific search tools and database features such as saving searches, creating search alerts, and using table of contents alerts. We also showed students the potential uses of RSS feeds and social bookmarking for keeping up with information and for creating social networks for discovering new information in their fields. We ended by highlighting the availability of bibliographic management software and training options our library has for using this software. Based on the pre-assessment, we spent less time covering common library services such as interlibrary loan because most students seemed familiar with these types of services already. We showed students the OSU Libraries' graduate students' web page which highlights key library services such as links to subject specialist librarians, where and how to submit their theses or dissertations to our institutional repository, and tutorials for keeping up with the literature in their field after they have completed their initial literature review. We encouraged those relatively few students not familiar with more basic library services to meet with their subject librarians for detailed assistance.

Almost all attendees indicated on the evaluation form that they were satisfied or very satisfied with the workshops. The high number of registrants for the second term also demonstrated student satisfaction with the workshops; word of mouth would have quickly decreased attendance if they had been ineffective.

Results and Discussion

Pre-Assessment and Evaluation Results

We gained valuable insights, both practical and theoretical, from the combined results of the pre-assessment survey and evaluations from the two terms of workshops offered. Our pre-assessments showed that many of the registered students had been at OSU for less

than a year. More surprisingly, a quarter of the registrants had been at OSU for three years or longer. We had anticipated that students who had been on campus for three years or longer would now be fairly comfortable with library services, and would have already completed their literature reviews. Either these students were simply interested in seeing if there were any new services available, or students move more slowly through their literature review processes than we believed.

Our attendees were equally split between Master's and Ph.D. students. This finding was surprising because we had expected Ph.D. students to be more information savvy and knowledgeable about the literature review process in general, but perhaps they wanted to be sure they had not missed any key library tools or research techniques. Also, just because students are in a Ph.D. program does not necessarily imply that they have completed their Master's degrees, and so they may be as inexperienced as masters-level students.

Most registrants came from life sciences departments, followed by social sciences and education, engineering, and physical sciences (see Table 1). The high proportion of life sciences students was not unexpected. As a land grant institution, OSU has a strong emphasis on many life science disciplines and a high number of graduate students are enrolled in these programs. These programs infrequently incorporate specific research and writing courses into their graduate-level curricula. The relatively high proportion of social sciences and education students was more inexplicable. OSU enrolls significantly fewer students in these disciplines and their departments more often include courses targeted to research and writing in the discipline (see Table 1). However, the support for research and writing varies even within departments so students across disciplinary backgrounds may still desire research assistance.

While most students had used interlibrary loan or at least knew what this service was, only about half of the students had used the regional consortial catalog, which is not surprising for students new to OSU and the region. Students were also divided in the number of article databases with which they were familiar. Most identified one to two databases they were familiar with; however, some were unable to name any article databases they had used. In the pre-assessment, students commonly asked questions about identification of the best resources to use for their research areas. This was reinforced by students' comments on the evaluations that learning about how to use databases more effectively and how to use the OSU Libraries' services in general were among the most important things they learned. This finding reinforces previous research that points out graduate students' knowledge gaps in subject database searching and specific library services, such as interlibrary loan (George et al 2006; Liao et al 2007). Students also pointed to learning about how to keep track of sources and searches through tools like EndNote and RSS feeds as a key strategy they learned about in the workshops.

Graduate students are not always as up-to-date with library tools and new technologies as we might think they are. Many were unfamiliar with tools like citation databases and the benefits of controlled vocabulary; although almost all were aware of Google Scholar, and communicated appropriate strategies for working with it. This unfamiliarity with more

complex library tools may arise because the peer networks in which they learn many of their searching strategies emphasize using a small number of databases in order to complete their search tasks as quickly as possible. Additionally, few students were familiar with Web 2.0 tools such as RSS feeds or social bookmarking sites. They were not using these tools socially or for keeping up with the literature. Because keeping up with the literature was one of the primary concerns students mentioned in the pre-assessment survey, learning about these types of tools was beneficial.

Students responded favorably to the conference-style environment, actively participating in small group and whole group discussions. The pre-registration and pre-assessment facilitated student engagement by encouraging them to think about what they already knew about the literature review process and library services as well as what they needed to know more about. Based on our experiences with these workshops, this advance preparation put students in a mental framework that facilitated learning.

Practical Planning Lessons Learned

In addition to learning more about the information needs of our graduate students, we learned some practical lessons about preparing workshops for this particular audience. We found that the best way to promote library events to graduate students on our campus is to have the information come from the students' graduate advisors. Although our initial promotions used a variety of tactics, the most effective method was for students to hear about the workshop from their graduate advisors. Within minutes of sending the e-mail to the graduate school, we began receiving RSVPs for the workshop. Upon reflection, this method of promotion makes sense because graduate students know and respect their advisors and are used to following their directions. Graduate students are usually less familiar with librarians and would not necessarily choose to read an e-mail that came directly from a librarian. Another aspect of promoting our event was carefully choosing the wording of the advertisement for the workshops. Based on the number of students who attended and the evaluation feedback, we met our goal of making the workshops appealing to a broad range of students, while retaining the emphasis on the literature review. Students came to the workshops prepared to discuss questions they had about carrying out a literature review and how to use library services.

Deciding on an appropriate time to offer the workshops was a key planning consideration. We carefully chose two different times of day to offer the workshops based on survey data collected during the graduate student library orientation in Fall 2006. By having a morning and early evening session, we avoided the busiest class times and cycles for the week. This scheduling strategy appeared to satisfy almost all interested students' schedules. One possibility for the future is to offer a workshop on a weekend day, so that distance students have an opportunity to attend.

The success of our first workshops held during winter term matches the experiences of Kuruppu and Gruber's (2006) that graduate students prefer more directed instruction after they have settled into their school routines. The timing within a graduate student's career should also be considered. Brown (1999) suggested that students are more receptive to

library instruction early in their careers, but will also appreciate instruction later if it is specifically targeted to their information need. While we did not invite students based on how far along they were in their graduate school careers, we expected students to selectively attend depending on whether or not they had already completed their literature reviews. Based on our pre-assessment findings that students with a wide variety of campus residency lengths were planning to attend, our workshops may have succeeded because they met the needs of newer students wanting an overview of how to use the library, as well as the needs of students who had been at OSU longer but had unmet information needs.

Maintaining relatively small class sizes so that group discussions would be easy to facilitate was critical for student engagement. The first time we offered the class, we capped each session at twenty-five students. Because we had so many students register for the sessions, we added an additional session to keep class sizes appropriately small. We also placed some students on a waiting list to be informed of the sessions scheduled for the next term. However, we found that actual student attendance at the workshops was between sixty-six to seventy-five percent of the students who registered for a particular session. As a result, the second term we offered the workshops, we overbooked the sessions, assuming that not everyone would be able to attend. This turned out to be a reasonable assumption, and during the second term we did not need to waitlist or turn anyone away.

The high number of registrants the first term allowed us to divide students into different sessions based on their broad subject disciplines, such as social sciences and life and physical sciences. Other library instruction programs have also divided their students based on similar lines (Bradigan et al. 1987; Lightman and Reingold 2005). We had a large number of registrants for the second term sessions also, but we had fewer social science students and more life science, physical science and engineering students. As a result, we chose not to divide the sessions along the same lines we had used the previous term. In spite of the research that illustrates that graduate students' library and web use varies by discipline (Chrzastowski and Joseph 2006; George et al. 2006), we found the small group and larger group discussions to be equally effective both terms, and not stilted by having a variety of subject disciplines mixed together.

Students responded favorably to the conference-style environment, actively participating in small group and whole group discussions. Although a common element of conferences is food and coffee, we found that due to the unexpectedly high number of participants in these workshops, supplying food for each workshop would be financially unsustainable. The second term we only supplied beverages and did not receive any complaints from the students about not having food.

Because we noticed a high level of interest in bibliographic management software training in the pre-assessment survey results, we encouraged the librarian in charge of the training to finish an online EndNote tutorial she was working on, so that we would have two options to point students to, both an in-class training and an online tutorial.

Future Opportunities

Based on research examining the information-seeking behaviors of certain groups of graduate students which indicates they often bypass the library when carrying out their research (Brown 1999), or use the library only after having exhausted their peer networks (George et al. 2006), we hoped these workshops would introduce the library and its services as an important part of students' research networks. We also hoped to learn more about our graduate students' information needs from the pre-assessment, from interactions with them in the workshops, and from data collected from the evaluation form.

In the evaluations, students indicated that increased support when conducting and writing their literature reviews and theses or dissertations would be helpful. Because thesis research and writing support offered on our campus varies greatly depending on the student's department, in the future the library might be a logical facilitator of partnerships across campus with the graduate school, the writing center, and academic departments to provide more support for graduate students during the research and writing phase of their graduate education. Having a librarian whose job specifically focuses on graduate student services makes it easier for us to set up contacts in the graduate school, and assists us in brainstorming with the other players on campus who have an interest in graduate students' learning experiences.

Another future opportunity might be to target specific audiences within the graduate student body such as international students, older than average students, or distance learners. Each of these student groups has particular needs that might be better served through a more specialized program. For example, Liao et al. (2007) found that while international students are more confident with both their English language skills and their library skills than they were ten years ago, they are still significantly less likely to have received undergraduate bibliographic instruction than American students. Ewald (2006) describes the particular challenges of students who have been out of the classroom for an extended time period. While these students are usually highly motivated, they often have little experience searching in computer databases, and may feel more easily frustrated by the extensive range of search options available to them. Distance students are developing specialized learning cultures that include extensive use of group work and guided online discussions (Green 2006). In addition, their instructional sessions are more likely to be delivered via the web, which should not be a significant barrier as Beile and Boote (2004) have illustrated that web-based library instructional delivery can be effective if it is correctly prepared. Offering a web version of the literature review workshop with an online group discussion component could be an effective way to serve our off-campus students.

We have had a range of each of these student groups (except for distance students) present in the workshops we have offered to date. The presence of a diverse group of students certainly did not detract from the workshops, and it is desirable to have contributions from a wide range of experiences to improve the group discussions. However, if some of these student groups felt stifled or unable to ask questions for fear of looking foolish or because of cultural differences, a separate forum might enhance their

learning experience.

Another way to approach the issue of differences in student learning styles and abilities could be to offer classes for a range of skill levels, such as beginner, intermediate and advanced. Offering a range of workshops based on skill level could more precisely target students' information literacy needs (Brown 1999). At the Australian National University, the separation of students into specific information literacy instruction sessions is achieved through a skills audit (Perrett 2004). Graduate students take a pre-test to determine which library instruction session they should attend. While this approach might be somewhat more regimented than we are currently prepared to pursue, the idea of more precisely matching a student's information literacy needs with specific instruction is appealing.

One downside to segmented instruction is that in our experience having a mix of skill levels in the literature review workshops facilitated peer-to-peer instruction. It was more effective for students to describe to each other the usefulness of bibliographic management software, than for us to simply lecture our way through a list of helpful information organizing tools. Because learning from peers is a highly-valued information seeking behavior (Brown 2005; Kuruppu and Gruber 2006), building this style of learning into our workshops was essential.

While students value input from their peers, they also value the involvement of their faculty advisors. Modeling a scholarly research process is particularly important for graduate students as they learn the cultural dynamics and expectations of their fields (Hardesty 1995). Faculty inconsistently address the research process in their interactions with their graduate students (Genoni and Partridge 2000). In our discussions with students about what they knew of the departmental or advisor's expectations for their literature review, many students had vague impressions, but no concrete criteria to guide them. Many faculty leave it to students to figure out how the library research process fits within their overall projects. Overall, faculty approaches vary based on their individual philosophy of teaching, departmental or disciplinary norms or because they have been unable to keep up with the rapid changes in research options (Genoni and Partridge 2000). The workshops might be enhanced by involving faculty members from various disciplines to bring their perceptions and expectations for a literature review. The presence of faculty members might adversely impact the dynamics of the session if students felt that their questions would be considered "stupid" by the faculty representatives. Finding a way to involve faculty, while still maintaining an open environment for the students will continue to be a challenge as our workshops evolve.

Finally, post-workshop assessment would measure achievement of student outcomes from these workshops more precisely. This assessment could come in the form of a post-test, or as follow-up interviews to determine how student research behavior changed as a result of attending the workshop. Acquiring this data would greatly enrich our understanding of graduate student needs and help us more fully determine whether the literature review workshops are meeting these needs.

Conclusions

Graduate students are required to carry out exhaustive research within their fields, yet they are often inadequately supported by faculty or library instructional programs in learning about the research process. These students will soon become faculty and professionals within their disciplines. Therefore, it is crucial for both the advancement of research within their disciplines and the continued successful integration of the library into the higher education system that these students gain information literacy skills and an understanding of the value of library services.

Our approach of meeting graduate students at the point of their information needs proved highly successful. Using the shared information need of many graduate students of writing and researching a literature review enabled us to teach across academic disciplines. A combination of theory and practical resources met students' needs for a higher degree of shepherding through the library research process.

We plan to continue offering these workshops, and will seek out new opportunities for guiding graduate students through the research process. Improvements and changes we hope to implement in the future include offering an online version of the course to distance students and exploring the information literacy needs of international students and students who have been out of the classroom for a long time. Finally, incorporating faculty perspectives into the literature review workshops will help give students an increased understanding of how to research their topics and may help faculty better appreciate difficulties their students have with the research process.

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TABLE 1
Departmental Affiliation

Registered for	Number of Graduate	Percentage of Discipline

Discipline Classification[a]	Literature Review Workshops[b]	Students at OSU[c] (FTE)	Registered for Workshops
Ag/For/Enviro. Sci.	56	443	12.6
Bio. Sciences	9	358	2.5
Business	1	92	1.1
Computer Science	5	140	3.6
Education	24	363	6.6
Engineering	42	470	8.9
Health Science	21	843	2.5
Humanities	3	92	3.3
Phys. Science	27	325	8.3
Soc. Science	26	165	15.8
Other[d]	12	172	7.0

[a]Discipline categories reflect the Classification of Instructional Programs codes to which OSU courses were assigned. The CIP codes were developed by the National Center for Education Statistics. For the purposes of this paper, the Life Sciences disciplines include Ag/For/Enviro Sci., Bio. Sciences, and Health Science.

[b]Includes registrants from the three workshops offered in February 2007 and the two workshops offered in April 2007.

[c]Data were gathered from the Oregon University System 2006 Fact Book.

[d]Other includes the Family Consumer Sciences departments from the CIP codes.

Appendix

Literature Review Workshop Pre-Assessment Form

In order for us to plan a Literature Review workshop that best meets your needs, please take a couple minutes to answer the following questions. Please respond by Friday, February 23.

How many years have you been at OSU?
-less than 1   -1 year   -2 years   -3 years   -more than 3 years

Are you pursuing a Masters or a Ph.D.?

-Masters   -Ph.D.?   -other_____

Have you used the OSU Libraries' Interlibrary Loan service?

-yes   -no   -I have no idea what this is

Have you used the Summit catalog?

-yes   -no   -I have no idea what this is

What article databases have you used before? *Example: Agricola, PsycInfo*

What would you most like to learn in this workshop (you may choose more than one option)?
-What is a literature review?
-How to start on your literature review?
-How to keep track of your searches and literature in your field?
-How to keep up with the literature in your field?
-How to use the library catalog?
-How to use article databases?
-Other_____