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## **Information Literacy at the Point of Need – Literature Review Workshops**

Information literacy instruction for graduate students has historically been limited to orientations for new students (Parrish, 1989; Piette & Dance, 1993) and occasional partnerships between faculty, primarily in the social sciences (Beile & Boote, 2004; Ewald, 2006; Green, 2006). Some of the reasons for this limited instruction have been faculty members' assumptions that graduate students already possess Information Literacy skills or should be able to figure out the process of finding, accessing and evaluating information on their own (Hardesty, 1995), and graduate students' own self-assessment that they possess some level of Information Literacy skills already (Perrett, 2004). With an abundance of undergraduate students to guide through the process of using the library each year, it has been easy for librarians to allow these assumptions to continue undisturbed. However, researchers examining the information seeking behaviors of graduate students have begun to create an awareness of graduate students' need to receive more intentional guidance through the research process (George et al., 2006; Jankowska et al., 2006; Sadler & Given, 2007).

I will be discussing a program that we have developed at Oregon State University to address graduate students' Information Literacy needs at a particular point of need. Oregon State University (OSU) has a graduate student population of approximately 3500 students, and approximately 400 new graduate students arrive every year. OSU has particular strengths in the life sciences disciplines, including agriculture and forestry, and in engineering. OSU Libraries services for graduate students have been comprised of one-on-one consultations when requested by students, some one-shot instructional sessions, and fall orientation sessions for new graduate students. The OSU Libraries began holding these fall orientation sessions for new graduate 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.

In order to address graduate students' need for increased Information Literacy guidance, a graduate student services coordinator was appointed, and a graduate student services committee was formed. Our goals were to develop programs to increase the Information Literacy of our students and to reach a wider audience of graduate students from across many disciplines. The committee examined what graduate services were being offered at other universities, reviewed the limited literature available on services for graduate students, surveyed students during the new student orientations, and drew upon the graduate school experiences of the committee members themselves in order to determine that an effective point of need for graduate student Information Literacy instruction on our campus would be within the context of the literature review process.

Because students are most receptive to library services when they have concrete information need, we examined when this point of information need might arise in a graduate student's career. Some of the Information Literacy needs that graduate students must grapple with include discovering how to complete comprehensive reviews of the literature, learning how to evaluate sources within the context of their projects, and properly citing and including these sources within their theses or dissertations. We chose to examine the specific information needs students have while writing their theses, and began by creating a workshop focusing on the literature review process. Because the literature review process is typically completed early in a student's graduate school career and encapsulates each of the facets of Information Literacy, including learning what information is available, finding and accessing this information, evaluating the information, and then synthesizing the information into an end product, it seemed like the ideal project to focus our Information Literacy instruction around.

After determining the main focus of our instructional program, we began to think about the best way to deliver the instruction. We chose the workshop model both because of the environment it would create and because of the accessibility to a wide range of students it could provide. The workshop approach has previously been used for instructing graduate students across many subject disciplines. Other workshops for graduate students have

focused on teaching students how to use a particular tool, such as bibliographic management software (Harrison et al., 2005), or alternatively, they have explored more theoretical concepts such as students' responsibilities as future faculty, and how to understand copyright laws (Fyffe & Walter, 2005). 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, thereby providing easier access to students than is possible when faculty buy in through a collaborative teaching arrangement is required. We also chose the workshop model because of the professional environment it could create for students. By having a registration process, and making name tags and professional folders for the students, the environment we created would communicate to the students that we valued their time and were taking these workshops seriously. The workshop arrangement was also appealing because of the opportunities it could provide for students to interact both with us and with their peers in small group discussions, thereby creating a more active learning experience.

The curriculum we decided on for the literature review workshops involved a combination of theory, review of the research process, and important research tools. We set the stage for helping students think about writing their literature reviews by discussing and defining the characteristics of a successful literature review. We drew upon the work of Arlene Fink (2005) who emphasizes that a literature review should be comprehensive, systematic, explicit and reproducible. We asked students to consider the purpose of the literature review in order to consider the context for their literature reviews. Understanding who they are writing their literature reviews for, as well as what end product their literature reviews would be incorporated into, allowed us to discuss the expectations of their individual departments and advisors, and to help students understand that the purpose of their literature reviews might change if their literature reviews are used in grant applications, governmental publications, or in journal articles. This discussion also begins to pave the way for guiding these students to appropriate literature searching and organizing strategies. For example, to perform comprehensive research in some fields requires looking at the grey literature, not just scholarly publications. To be systematic in carrying out a literature review demands that some type of organization system is used. Thinking about who the audience is for their work may lead students to

realize the need to read publications by their audience members so that they can emulate their approach and style.

In order to bridge the theoretical aspects of the literature review with the tools needed to complete their literature reviews, we asked students to discuss the research process and to think about what methods they have previously used when undertaking a research project with a written component. Students discussed their past techniques in small groups and typically came up with a list that included search strategies, such as citation searching or footnote chasing; information organizing strategies, such as using EndNote or a system of folders; and the patterns they began to recognize, such as reoccurring authors or research labs in the literature. One additional point we decided to emphasize in this research process section was the importance of learning how to read. We discussed the difficulties of reading scholarly literature and some strategies that students could use to more effectively remember what they read and how to use their reading to serve as a catalyst for their writing.

Next we delved into illustrations of database searching. We modeled searching in several databases in order to point out the need to search multiple databases in order to perform a comprehensive review of the literature. Because many of the students previously reported using only one database, it was important for us to emphasize to these advanced users the importance of using multiple databases. We showed students the importance of a citation database like the Web of Science (Thomson Scientific), which can be a powerful tool for advanced users, but which few of them had used before. We briefly discussed Google Scholar so students would understand that not everything is covered in Google Scholar and to show them how to access the articles they find in Google Scholar through the library. To help them become more advanced database users, we showed them how to use the thesaurus provided with the database and discussed the advantages of using controlled vocabulary. While we did model searches in specific databases, the purpose of this exercise was not to provide an in-depth overview of a particular database, but rather to illustrate particular tools that students could use in a variety of databases to progress beyond simply entering in keywords. Approaching the exercise in this way allowed these database illustrations to be meaningful for all of the students, not just for those from the disciplinary area of the particular subject database.

While the students had all performed database searches before, they were less likely to have taken advantage of the search management tools available to them through the databases. We showed how to save searches in a database and how to set up automatic searches to help streamline the research process. Additionally, we discussed the benefits of using a bibliographic management software system like EndNote, to help illustrate more sophisticated ways of organizing their research.

Before the students came to the workshop, we asked them to fill out brief pre-assessment surveys designed to provide us with background information, including their year in school, whether or not they were pursuing a masters or a doctoral degree, and their departmental affiliation. We also inquired about their previous knowledge of library services, including databases they had used, and whether or not they were familiar with our interlibrary loan service or our consortial catalog. We asked what students were hoping to learn in the workshop. The most common response to this last question was that they were interested in learning how to keep up with the literature in their field.

In order to meet the students' need to keep up with the literature, we discussed how to use several Web 2.0 tools. We covered the RSS feeds provided through the databases for setting up search alerts, RSS feeds provided through table of contents service providers such as Ingenta, and even RSS feeds for personal information as a way to get students motivated to use RSS feeds. Interestingly, few students had previously used RSS feeds even for their own personal use. We also discussed how students could use social bookmarking as a way to keep up with the literature in their field by creating a network of contacts and tags that would allow them to see what related sites similar users considered to be important.

Students were asked to fill out evaluation forms at the end of the workshop to help us get a sense of how well the workshop worked for them, and to determine what future workshop options should be. The response to the workshop was overwhelmingly positive with 90% stating that they were satisfied or very satisfied with the workshop. When asked what additional needs they had, students voiced a desire for more workshops. One type of workshop they felt could be helpful would be a workshop that focused on the actual process of writing the literature review. As a result, we have started gathering information about where graduate-level writing instruction takes

place on our campus to determine whether those existing resources are sufficient or if we should host a writing workshop ourselves at the library.

Although we already offer EndNote workshops, students requested more EndNote workshops. We have created a web-based EndNote tutorial, and we will also begin holding EndNote Web workshops for students who are interested in using that service to organize their references and papers. Based on our observations that students had relatively little experience using such Web 2.0 tools as RSS feeds and social bookmarks, we will also begin to offer workshops specifically on how to use these tools. With each new instructional interaction, we will continue to gauge students' information needs and see how we might be better able to serve them.

Currently we are contemplating how to provide better service to several subset groups of the graduate student population. These groups include international students, distance education students, and students whose graduate program does not require a thesis or a literature review, such as Masters' of Business Administration students. 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. While many international students attended our literature review seminars, and a diverse group of students enhanced the group dynamic of our workshops, an opportunity to meet with these students separately may provide them with a chance to ask more questions or for us to move more slowly through some of the searching examples.

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. We have just developed a web version of the literature review seminar workshop, and we are in the midst of evaluating how effective this version of the literature review workshop was for our off-campus students.

While many students on our campus are in a program that requires a thesis or dissertation, there are some students who do not write a thesis or literature review, and therefore have not been compelled to attend our workshops. However, these students typically still do need to use the library for some of their work. We are working to determine where their points of information need might be so that we can also provide them with quality Information Literacy instruction.

In conclusion, graduate students are required to carry out exhaustive research within their fields, yet they have historically been 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.

For instructors planning to attempt this type of instructional service on their campus, I would recommend learning about the types of graduate students on your campus and what their point of information need is. Engage the students before the workshop with a pre-assessment in order to help students start thinking about what they would like to learn about the research process and what the gaps in their understanding might be. Encourage the use of an active learning style which allows students to interact with their peers and helps the instructor facilitate an enhanced learning experience. Finally, emphasize the value of making a personal connection with a subject librarian for more in-depth disciplinary assistance.

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