



“Where to start?”: Considerations for Faculty and Librarians in Delivering Information Literacy Instruction for Graduate Students

Mary Jane Harkins
Mount Saint Vincent University

Denyse B. Rodrigues
Mount Saint Vincent University

Stanislav Orlov
Mount Saint Vincent University

Abstract

It is often assumed that incoming graduate students are information literate, yet many of them lack the skills needed to effectively organize and critically evaluate research. Supporting students in acquiring information literacy skills is a critical role for universities, as it improves the quality of student research and enhances students' opportunities for lifelong learning. The literature in this area has focused on the partnership between librarians and course instructors, which has been shown to produce the most effective library instruction. However, additional research is needed concerning the collaborative approach to teaching information literacy to graduate students. The current study used action research to gather information on students' perceptions of a blend of two methods of library instruction: a web-based tutorial and an in-class library instruction session. While few students indicated engagement with the online tutorial, most students appreciated the in-class session. Recommendations for information literacy instruction and further research are included.

Keywords: information literacy, library instruction, faculty and librarian collaboration, online tutorials, graduate students

Introduction

Information literacy is understood as being able “to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information” (Association of College and Research Libraries (ACRL), 1989, para. 3). Several researchers have reported that while entry to graduate studies assumes that students are information literate, many graduate students lack an understanding of the organization of research information and demonstrate a discomfort with evaluating information sources critically (Crosetto, Wilkenfeld, & Runnestrand, 2007; Hooks, Rahkonen, Clouser, Heider, & Fowler, 2007; Liu & Yang, 2004; Williams, 2000). Jiao and Onwuegbuzie (2004) emphasize that library anxiety has a negative impact on the students’ academic performance.

Holmes (2000) and Buck, Islam, and Syrkin (2006) reported that the technological emphasis of research in the 21st century is particularly difficult for adult learners returning to higher education after years in the workforce, and they are vulnerable to library anxiety. Their professional and technological work experiences may not translate seamlessly to the demands of the educational environment. On the one hand, Hooks et al. (2007) stressed that graduate students are likely to need practice in identifying and interpreting scholarly journal articles. On the other hand, Pival, Lock, and Hunter (2008) found that graduate students demonstrated a high level of both competence and confidence with using information technology and accessing scholarly material. These researchers reported a low response rate and speculated that their study may not have captured those with less confidence and ability. Liu and Yang (2004) indicated that distance education graduate students use the principle of least effort when searching for resources and avoid higher quality sources. The students’ understanding of scholarly research instruction has taken on an added importance with the expanding use of the Internet as well as the rapid growth of electronic databases and e-learning classroom platforms. To support students in becoming information literate is a critical role for universities, as the effective use of scholarly resources enhances the quality of students’ research and can lead to positive outcomes of course work and lifelong learning, knowledge, and skills (Floyd, Colvin, & Bodur, 2008).

Hoffmann, Antwi-Nsiah, Feng, and Stanley (2008) conducted a needs assessment of graduate students and reported that “students . . . indicated that time constraints would influence their decision to attend a workshop, and therefore online material would be more appealing” (para. 35). Consequently, it is important for information literacy to have an online component. Research shows that online tutorials form an effective combination with other methods of delivering library instruction (Belawati, 2005). According to Twigg (2003),

online tutorials can individualize and improve the quality of student learning while reducing the costs of instruction. On the other hand, Sinclair (2003) found that graduate students involved in a mentoring program that combined face-to-face and online learning overcame the initial technological hurdles and started reporting the benefits of online tutorials. These benefits include the ability to have control over their own learning and flexibility in choosing when to respond to the tutorial discussion. While some researchers like McLean and Dew (2006) or Sax, Gilmartin, and Bryant (2003) suggest that there may be a perceived lower value of online tutorials and surveys, others find that online delivery methods have their appeal. For instance, Silver and Nickel (2005) found that the majority of students indicated a preference for online instruction over classroom instruction.

Several researchers have advised that to achieve the goal of effectively supporting students, librarians must gain a better understanding of user needs and adopt a user-centered approach to information literacy instruction (Harrington, 2009; Sinanan, 2009; Hoffmann et al., 2008; Maybee, 2006; Seamans, 2002). It has been argued that simply teaching information literacy as a list of skills is a disservice to students who need the information presented in a manner which is related to their curricular needs (Maybee, 2006) and is adapted to the learning styles of the learner (Sinanan, 2009). Students today prefer interactive learning; however, there is a range of graduate students' experiences in conducting library scholarly research, and there is no one right way to support graduate students' library research skills (Hoffmann et al., 2008). The user-centered approach, however, gives a voice to the students by soliciting their perceptions and understandings of literacy information. By exploring students' perceptions of their levels of awareness and understanding of library services and resources, librarians can begin to provide library instruction in a collaborative manner that will connect with the students' identified needs. Gaining an awareness of students' perceptions of their understanding and skills related to information literacy "allows educators to create enhanced learning environments" (Maybee, 2006, p. 79).

While instructional efforts to address this need for graduate information literacy have included formal courses, course workshops, and individualized consultations (Blummer, 2009), it is the partnerships between librarians and course instructors which have received much attention in the literature (Jacobson & Mackey, 2007; Montiel-Overall, 2007; Raspa & Ward, 2000). Owusu-Ansah (2003) warns that there are inherent tensions in such relationships and not all faculty members are open to collaboration. Teaching faculty may be inclined to view the presence of a librarian as less important since most students are computer literate and many sources are available online (Caspers & Lenn, 2000). There is ample evidence, however, that information literacy instruction is more effective when provided in the context of the course with the involvement of both librarians and

faculty members (Blummer, 2009; Floyd et al., 2008; Gandhi, 2005; Mackey & Jacobson, 2004). Hooks et al. (2007) report that after a successful pilot project they needed to hire an additional librarian to maintain service levels generated by the collaborative projects with instructors. Alleyne and Rodrigues (2009) emphasized that sustainability and scalability are key criteria for the success of collaborations.

Based on this identified need for graduate students to be information literate in a era of rapid change and growth in technology, we decided to investigate the learning experiences of graduate students who participated in library instruction through in-class and online sessions offered by academic librarians in collaboration with course instructors. There are lessons to be learned from investigating partnerships and collaborative approaches between academic librarians and faculty members. The potential of the collaborative approach to library instruction has been identified; however, there is limited research on the collaborative approach to providing research literacy to graduate students.

This study examined two methods of library instruction used concurrently in the delivery of information literacy instruction to graduate students. The two types of information instruction that were explored are: 1) a web-based tutorial and 2) structured, in-class library instruction sessions in graduate education classes. The purpose of the study was to explore the nature of the graduate students' perceptions of each approach. The research questions were:

1. What are the graduate students' perceptions of an online tutorial which was to be completed independently as a required part of the course, but not weighed as an assignment?
2. What do graduate students identify as the key advantages and challenges of a structured, in-class library instruction session?
3. What are the perceived benefits of the two approaches to library instruction?

Design of the Study

To investigate two existing approaches to providing library research instruction to graduate students, we engaged in an action research study. Action research is "any systematic inquiry conducted by teacher researchers, principals, school counselors, or other stakeholders in the teaching/learning environment to gather information about how their particular schools operate, how they teach, and how well their students learn" (Mills, 2003, p. 5). Stringer (2004) explains that "the deeper purpose of research is to provide people with knowledge and understanding

that makes a difference in their lives” (p. 5). As the nature of the study was to explore graduate students’ perceptions of library instruction sessions, action research was considered the most appropriate approach for gathering data (Mills, 2003; Tomal, 2003). Action research has long been accepted within the field of education, having been used in the 1970s by the “teacher-researcher” movement (Vezzosi, 2006, p. 291). More recently, action research has been adopted in library and information sciences (Brown, Rich, & Holtham, 2003; Edwards & Bruce, 2002). This methodological approach allows the researchers to critically reflect on their own practice and to identify areas for change and improvement of practices (Vezzosi, 2006). The design of this study involved a four-step process (Mills, 2003): identifying a focus for study, collecting data, analyzing and interpreting the data, and finally developing recommendations for consideration in future library instruction sessions. We used action research as a method for investigating our everyday experiences using a collective, self-reflective inquiry methodological approach. Ayers (1989) cautions, however, that “we do not, of course, end up with the truth, but perhaps more modestly with a burgeoning sense of meaning and knowing grounded in real people and concrete practices” (p. 4).

This research was conducted in a small university in eastern Canada that promotes innovative teaching to small classes. It has a student population of approximately 4,400 students from across Canada and around the globe. Historically the university has had a strong tradition of social responsibility and a commitment to the advancement of women. The university offers 35 undergraduate programs and 13 graduate programs at the masters level. Programs are offered on-campus and through distance education via current technology. It has a long history in teacher education and provides undergraduate degrees in both elementary and secondary education as well as eight graduate education programs. The academic librarians provide a full spectrum of information literacy instruction, including teaching an undergraduate credit course, offering single session presentations, and collaborating with faculty on integrating information literacy into graduate course content. Instructors teaching graduate education classes were sent an e-mail requesting permission for an academic librarian to attend one of their classes to conduct this research. The research involved a library instruction session during formal class time, a web-based tutorial to be completed independently by the students prior to the class session, and a survey of their perceptions of these experiences (see Appendix). If the instructor agreed to allow the librarian to attend his or her class, the students were fully informed about the study and invited to become participants.

Instructional Approach: Online Tutorial

Librarians employ a wide range of types of online tutorials. Tutorials range from those with interactive elements aimed to cover advanced information literacy concepts for a broad audience (Blummer, 2007), to simpler screencasts with the goal of answering ‘point of need’ questions and problems, thereby offering assistance with a specific information literacy task (Kerns, 2007). The tutorial for this study was designed to provide the students with instructions needed to use the ERIC database to find recent, peer-reviewed, research-based scholarly articles for critical reading or literature review type assignments common to first-year graduate education courses. While the ERIC database may have lost its position as the leading education resource, it nevertheless is considered to be an excellent starting point for students beginning their research because of its excellent thesaurus and options for filtering by publication type (Corby, 2009; Strayer, 2008). This tutorial was to act as an introduction and was to be followed by contact with a librarian in a class setting for more in-depth instruction.

The online tutorial, developed in-house, was a Flash-based screencast lasting 6 minutes and 22 seconds, as it has been documented that brief tutorials are preferable. “The user’s attention span may be short, and he or she may retain more when the video clips are broken up into logical steps. Videos such as these are best for illustrating a task since they don’t allow for interactivity” (Kerns, 2007, p. 113). The Adobe Flash platform was chosen as it allowed the creation of online animation with relative little bandwidth use, making the tutorial easily accessible by both on- and off-campus students. It was designed with usability elements such as title screens, zooming to areas of the screen, and visual highlighting (text boxes, arrows), in addition to the audio narration of the animated screen shots (Lee, 2010). The tutorial also kept with Hegarty, Quinlan, and Lynch’s (2004) advice to use “simple natural language, content with definitions, concise explanations, real life examples, and graphics to ‘aid visual cognition, interest and interaction’” (p. 445). “Online screencasting videos allow students to learn in a combined audio-visual environment, where demonstrations replicate the experience of navigating databases and systems and allow students to follow along” (Ecclestone & Hamilton, 2010, para. 8). Williams (2010) stresses that “screencasting gives a viable opportunity to effectively demonstrate the more specific steps in information literacy skills such as databases, search tools and how to make proper citations” (p. 157). While the goal of the screencast was task-based, there was an emphasis on moving from keyword to subject searching and using the database filters to narrow results. The ACRL Information Literacy Competency Standard for Higher Education (2000) that addresses this issue is contained in Standard Two: “The information literate student accesses needed information effectively and efficiently” (p. 9). The tutorial may be viewed at: <http://forms.msvu.ca/library/images/findingarticles.htm>.

Instructional Approach: Structured, In-Class Sessions

While having different teaching styles, the academic librarians leading these instruction sessions shared a constructivist approach to information literacy instruction which emphasized collaborative learning among the students, support of student questioning and the librarian/teacher as co-learner (Grassian & Kaplowitz, 2009). The librarians covered topics that addressed the ACRL (2000) information literacy standards:

1. The information literate student determines the nature and extent of the information needed.
2. The information literate student accesses needed information effectively and efficiently.
3. The information literate student evaluates information and its sources critically.
4. The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose
5. The information literate student understands many of the economic, legal and social issues surrounding the use of information and access and uses the information ethically and legally (pp. 2-3).

The specific topics covered included the use of library catalogues, education subject guides, A-Z Journal List, RefWorks (online bibliographic citation software application), Google Scholar, citation searching, and document delivery services. These topics were based on previous discussions with faculty and student queries at the reference desk. This is consistent with the approach taken by many other academic librarians as described in Blummer's (2009) review of the literature on providing library instruction to graduate students. It is in the practical, hands-on use of these research tools that issues related to information literacy such as strategies for generating search terms and subject terms, the evaluation of quality resources, and the appropriate use of citation techniques were addressed. The librarians emphasized the importance of flexibility to allow the needs of the students to guide what was done in the sessions and how much time was spent on the various components. Equally important was an emphasis on developing a positive rapport with the students.

The overall goals of the sessions were to provide students with a foundation of basic concepts about information literacy and to demonstrate the relevance of these concepts to their program of study. Students who have questions or concerns that are not addressed during the class time are encouraged to consult with librarians and to make an appointment at an alternate time.

For the distance cohorts, the librarian emphasized the online availability of the librarians for the needs and questions of distance students.

Data Collection and Analysis

Ninety-four students in seven graduate education classes (four on-campus and three off-campus) were visited. The three off-campus courses were taught by the librarian responsible for distance services, and the on-campus sessions were divided among three academic librarians. On-campus sessions were held in computer labs equipped with an overhead data projector and with a ratio of one student per computer. The distance classes met in Teacher Resource Centers where conditions and equipment varied from one location to the next. One group had laptops available for each student but no overhead projector available; the second group met in a room with an instructor workstation and projector but without access to individual computers. The third group met in a lab comparable to the on-campus computer labs.

Once the surveys were completed, a detailed and systematic analysis was conducted on the data. The researchers coded the data separately, compared their results, and discussed their rationale for the coding. This coding was then grouped into emerging themes from each instructional approach, based on cross-coded topics, frequency of common responses, and identified key issues. The findings of the study provide the graduate students' perceptions of the library instructional approaches.

Of the 94 students invited to participate, there was a response rate of 79%. Participants were 75 graduate students engaged in different education courses in a university in Atlantic Canada. Of the 44 participants who responded to the question that asked their year of study, 38 were in the first year of their master's programs. Of the 40 students who responded to the question concerning previous degrees, 12 had previously completed a Master of Education degree. The years since participants had graduated from a previous degree ranged from 2 to 21 years, with 7 years being both the mode and median. Thirty of the participants were part of cohorts that were held off-campus, at a distance greater than 1 hour of travel time.

Findings and Discussion

Given the increasingly complex and ever-changing nature of information and technology,

the delivery of instruction in library research to university students is an important area to explore. The ability to research information is a critical foundational skill for graduate students. This study examined two existing approaches to delivering library instruction to students in various graduate education courses. Three research questions were developed for the study.

1. How effective is the provision of an online tutorial which was to be completed independently as a required part of the course, but not weighed as an assignment?

As part of the instructional delivery process, online sessions through the use of web-based tutorials were developed with the goal of better preparing the students for the in-class library instruction session. To our surprise, few students completed the tutorials. Out of 75 respondents, only 16% (12) provided feedback on the tutorials. Most students either did not respond to the questions about web-based tutorials or mistook them for questions about face-to-face sessions. There is hardly any indication that the students realized that they were expected to complete this exercise; only two students acknowledged that it was part of the course: *"Didn't have time to do online demo"* and *"I haven't actually watched any of the online demonstrations yet."*

We did not ask why the participants did not complete the online tutorial, but as Holmes (2000) and Buck et al. (2006) show, it might be due to the low comfort level with technology among the returning graduate students who tend to experience higher library anxiety levels after years in the workforce. This low confidence level could explain in part why graduate students use the principle of least effort when searching for online resources (Liu & Yang, 2004).

While it is difficult to know why the students did not complete the online tutorial, the literature on this topic suggests that there may be a perceived lower value of online tutorials. For instance, McLean and Dew (2006) show that when a lecture in a library is not part of course requirements for off-campus students, it leads to poor attendance of training sessions. Similar effects can be observed with online surveys. In their comments on the effectiveness of online surveys, Sax et al. (2003) state that web-only surveys without incentives had a response rate of 19.8%. At the same time, according to Ivanitskaya, O'Boyle, and Casey (2006), when online surveys were administered during class time, the response rates have been as high as 77%.

Although the sample of students who answered this question was very small, it was still of interest to the researchers to learn their perceptions of this type of instruction. When asked what was "the most significant thing I learned from this demonstration," five out of 12 students mentioned demonstration of the effective online research, including *"how to research via distance"* or *"how easy it is to access information from the library."* Four students mentioned more specific

components of research, mostly the search refining techniques, such as *“the difference between scholarly research and trade publications”* or *“narrowing search for journal articles.”*

The following comments were particularly representative of the students’ perceptions of the online tutorial:

“Showing the step by step helped and to be able to go through it again and again.”

“I liked the verbal step by step instructions to accompany the visuals.”

“The effective use of online resources.”

“It can be easy to do at home.”

“I liked the visual aids of the cursor and the highlighted sections on the screen.”

One of the important findings was the interest in combining both types of delivery. Participants commented that *“Both the presentation format and the one-on-one support were helpful”* and *“A guided (in person) tour was best and complementary to the online tutorial,”* as well as *“Actually going through the process with [the librarian] made the most sense to me, but having gone through the initial online tutorial first was a good preparation for [the librarian’s] tutorial.”* These limited findings are supported by the research that online tutorials are effective as a supplement to other methods of delivering library instruction (Belawati, 2005).

2. What do graduate students identify as the key advantages of a structured, in-class library instruction session?

While the low response rate in regard to the online tutorial might lead one to assume that the participants were not interested in the content of the instruction, the responses to the structured, in-class session paint a different picture. Fifty-one percent (23) of the on-campus participants found the content covered in the structured, in-class library instruction session to be “totally new,” while 49% (22) found it to be “somewhat new.” For the distance cohorts, 70% (21) found the content to be “totally new,” while 30% (9) found the session to be “somewhat new.”

While librarians approach these sessions as an opportunity to share concepts of information literacy rather than as demonstrations of library research tools, it seems that students do value the teaching of specific programs and techniques. When asked about the most important things learned from the session, 93% of students (69) listed learning how to use a specific service or research tool, such as RefWorks, article databases, and/or the library catalogue. Forty-four percent of students (33) listed benefits related to information literacy, such as accessing needed information effectively and efficiently and critical evaluation of information and its sources. One participant wrote, *“[I] feel more confident in being able to focus on articles more relevant to search. I also have a better comprehension on the use of searching using subject terms.”* Another mentioned the

effective use of information to accomplish a specific purpose: *"Being able to knowingly find most articles that I research. . . I wish I would have had this session in my previous degree."*

The librarians conducting the sessions spoke to the necessity of not making assumptions about students' research skills. This proved to be well-founded as 20% of respondents (15) reported that they had never used the library's research tools. This was demonstrated by comments like *"I had no prior knowledge / how to's about databased [sic] research, so I had no idea where to even begin. It may as well have been a foreign language"* and *"I didn't know it was even available. I was discouraged when thinking about research but seeing how easy it was changed my attitude."* One participant wrote, *"Sometimes the professors assume you know but as a mature student, often you don't or are rusty."* This reinforces the findings of Williams (2000) and Cain, Marrara, Pitre, and Armour (2003) that graduate students are not knowledgeable about the library resources available to them. Somewhat unexpected were the comments from 20% of participants (15) (both on- and off-campus) that the library website itself was a challenge to be surmounted: *"Where to start! The university library site can be daunting without direction - thank you!"*

One-third of the distance students (10) remarked that they benefited from learning how to access the library's resources from off-campus. Feedback included:

"I have access to articles, books, etc. just by being a registered Mount student. The Mount has come a long way since 1989 [smiley face]."

"Knowing this can be done off-site is remarkable."

"Cost of fees for logging in to various sites - now I realize the access is there free through MSVU. Great."

These findings are supported by Slade's (2004) observation that the library services are underutilized by distance students and that there is a need for increased promotion of library services and library instruction.

Jacobson and Xu (2004) note the importance of a flexible, engaging teaching style in motivating students in information literacy classes. The librarians employed a variety of instructional approaches including step-by-step demonstration, time for hands-on practice with the students' own research problems, and encouraging active student participation. These instructional techniques were commented upon by many of the participants: *"It was great to see [instructor] go through things and then try them myself."* Equally important to students was the opportunity for hands-on practice with their own topics of interest. Unfortunately, 17% (13) of participants did not have access to a computer during the session. Common feedback responses included:

"Actually using it and searching for our area of interest."

"Lots of practice helped."

"Clearly demonstrated with opportunities to practice and become more familiar."

Although there were no direct questions regarding the librarians' instruction, their supportive teaching style was commented upon by 44% (33) of the participants. Stemler, Elliott, Grigorenko, and Sternberg (2006) emphasized the need to create a warm and welcoming atmosphere to promote learning. Jacobson and Xu (2004) advocate that "good teaching behaviors promote student motivation and encourage them to learn" (p. 43). Comments such as *"Our presenter was knowledgeable and did an excellent job. The presenter makes a big difference"* emphasize the role of the instructor in creating a positive learning environment. Nevertheless, a flexible style must be balanced with the time set for in-class instruction. The approach of detailed demonstration and practice while providing support for those who need it can be a challenge within the 1 hour time frame allotted to the on-campus sessions. For 8% of students (6) in the on-campus sessions, the pace was too fast: *"Slow down! Great step by step direction but perhaps a bit too fast."* This can create a barrier to learning as illustrated by the comment *"I got behind several times and became panicked."* This comment supports the use of online tutorials in combination with in-class sessions because, as noted by a student, one of the benefits of the online tutorial was *"to be able to go through it again and again."* The off-campus sessions ran between 2 to 2½ hours in length and there were no comments reflecting pacing as a problem.

3. What are the perceived benefits of the two approaches to library instruction?

Twenty-four percent (18) of the participants' responses that addressed the perceived impact of the instructional library literacy sessions referred to how "discouraged" and "overwhelmed" they felt prior to attending the in-class instruction session. Confidence was a term that many of the participants used in the survey once they had completed the structured, in-class library instruction session. One participant from an in-class library instruction session stated, *"I went from zero knowledge to a confident (somewhat) user."* Twenty-one percent (16) of the participants wrote that they had *"no idea how the system worked,"* but they were beginning to gain a better understanding of the process. Another participant from an in-class library instruction session noted that *"by the end I was independently searching for articles, choosing them, e-mailing them, and exporting them to RefWorks."*

A large majority of the participants in the study are full-time teachers studying part-time, so concerns about time constraints are always an issue. There were many comments on how this instruction on library research would be a time saver in helping them to identify resources,

narrow their search, or find relevant articles. Learning how to use RefWorks was a welcomed task as they felt it would save time when doing a reference list. Participants also noted they now had a greater comfort with the system and would start to use the web-based tutorial as this would be convenient. This is consistent with Wallach's (2009) finding that graduate students are consumers of the library and want to find the fastest and easiest way to conduct research.

The level of learners' comfort is important and addressing this issue means providing for a range of instructional methods based on students' technological savvy and learning styles (Baron & Strout-Dapaz, 2001). It was encouraging to read the comments that told how the participants now feel ready to take informal, independent responsibility for reviewing the web-based tutorial and their recognition that this would be very helpful to them. As one participant in an in-class library instruction session informed us, "*The session made me feel comfortable to go to the library.*" Students' perceived self-efficacy levels are a "well-established construct that suggests people are more likely to engage in activities in which they feel efficacious" (Boote & Beile, 2005, p. 58). This in-class structured session was essential to help students increase their comfort level with research literacy. This finding is supported by Hunt and Birks (2004), who state that "leading the students in this process of discovery and self-discovery creates excitement and enthusiasm for the material and increases the likelihood that students will see the transferability of IL concepts and skills" (p. 33). Working directly with students also allows librarians to individualize instruction and respond to students' questions based on their level of understanding and technological abilities.

As noted in the previous section, 12% (9) of the participants had little prior knowledge about research literacy and graduate education. One participant in an in-class library instruction session wrote, "I thought it would be overwhelming but the instructor took us through everything patiently, and I feel able to conduct a search, save my work, and create a bibliography." Eighty percent (60) of the participants commented positively on their new knowledge about ERIC, Google Scholar, RefWorks, search descriptors, use of the university website, and the availability of librarians to answer their questions. Ninety-six percent (72) of the participants stated that now they felt confident about using these web-based tools. Nearly 10% of the participants who noted that they were feeling more comfortable also stated that they would need ongoing engagement in practice sessions. As one in-class library instruction session participant wrote, "*...it was all so new to me. More confidence will come with practice.*"

Eight percent (6) of the students requested that the face-to-face instruction be accompanied by a handout with computer screenshots of the different steps in the library instruction. This handout would certainly benefit students that are making the transition from paper to electronic work. Initially it can be a frustrating experience to learn library jargon,

electronic indexes, or the use of Boolean logic to do a search (Block, 2007). The latest OCLC *Perception of Libraries* report (De Rosa et al., 2011) found that search engines continue to top the list of electronic sources used by the U.S. college students to find online content (93%), followed closely by Wikipedia (88%), and some of these students will need help transitioning to scholarly online research.

One of the benefits of the structured, in-class library instruction session was the opportunity for the academic librarian and the students to meet. Graduate students in this university are largely part-time students, so they tend to come on campus only during class time and do not typically visit the library. The participants responded that they valued the opportunity to meet an academic librarian and to gain a better understanding of her/his role in helping them conduct research. An important first step in getting the students to consult with the librarians was the opportunity to match a face to a name. The process of requesting assistance for research work may become less intimidating once the students have met a librarian and have a person to contact in the library. Student collaboration with librarians has been shown to increase their use of scholarly resources (Floyd et al., 2008).

When used together, these instructional approaches provide the potential for graduate students to gain familiarity with library resources and to begin building a working relationship with academic librarians. Wallach (2009) stressed that they can “highlight research-level interdisciplinary and inter-media resources and processes that might serve the students as they mature as researchers” (p. 221). The combination of these two methods of instruction can offer a realistic approach to teaching advanced information literacy skills at the graduate level, given constraints of time, funding, and accessibility to resources.

Limitations of the Study

While this study provides information about the participating graduate students’ perceptions on their learning experiences in the sessions on information literacy provided by academic librarians in collaboration with course instructors, there are a number of limitations. The first limitation involves the small sample size for this study. Ninety-four students were invited to participate in the study but the actual sample size was seventy-five students in graduate education classes in a university in eastern Canada. Future research should draw participants from a larger geographical area, perhaps from more provinces in Canada, and include a more comprehensive sample that goes beyond teachers enrolled in graduate programs. The current study targeted a

specific group of graduate students in three graduate programs in a university, which makes it difficult to generalize the results to other graduate students outside of these programs because of the highly contextualized nature of the study.

For the purposes of this study, participants were asked to provide brief responses so future research could use more advanced sub-categories to focus on the expansion of the responses in order to gain a more in-depth understanding of the participants' perceptions. Finally, as with all self-report studies, the results are limited by the participants' responses. Nonetheless, it is important to have the individuals' evaluation of their perceptions of the information literacy sessions. It is important to note that the participants may have felt that they needed to provide what they consider the "right" answer the researchers are looking for rather than what they believed to be true. This is a concern with all measures that require the participant to complete surveys.

Final Thoughts and Recommendations for Future Directions

The purpose of this study was to examine two methods of library instruction. Using an open-ended survey, the study was designed to gain an understanding of graduate students' perceptions of these experiences. The researchers expected that both methods would have their respective strengths and weaknesses in delivering library research instruction and meeting the perceived needs of the students. It was a complete surprise that so few students indicated any engagement with the online tutorial. Given the much higher levels of feedback for the structured in-class session, the researchers speculate that the tutorial was not sufficiently integrated into the course to warrant the students' attention. Consideration needs to be given to investigating this area further. It was eye-opening, though perhaps not surprising, that a high number of students reported that the content of the in-class session was completely or somewhat new, as this finding is in keeping with other studies on the information needs of graduate students. It was reaffirming that for most students the structured in-class session was a positive experience which boosted their confidence in undertaking library research. An added benefit was that they welcomed the opportunity to spend time with a librarian to develop their information literacy skills. Given the complexity of today's information landscape, it is important to design library research instruction in a manner that is relevant to the students while supporting and developing their abilities as information savvy researchers.

Based on the findings of this action research, we have identified areas for change and

improvement.

1. Given the low response rate (16%) of participants who completed the online tutorial, we recommend the following:
 - Consider conducting additional research on students' perceptions of online tutorials.
 - Encourage the combination of in-class instruction with online delivery. Course instructors could promote the use of online tutorials during class time, prior to the in-class library instruction session.
2. In recognition of a) the high percentage for which the content of the session was totally new and b) the positive feedback for the range of strategies provided, including the interactive components, we recommend the following:
 - Prepare for a range of research experiences among graduate students. It cannot be assumed that every graduate student has adequate research skills for success in graduate work.
 - Consider a variety of learning styles and employ appropriate strategies in the delivery of a library research session. This could include, but is not limited to: step-by-step demonstration, opportunity for hands-on practice, and the availability of printed and online handouts.
3. The success of the in-class sessions identified the benefits of the librarians: a) scaffolding their instruction to address the students' anxiety and uncertainties and b) bridging the gap between the classroom and library resources. We recommend the following:
 - Use the information literacy sessions as an opportunity to begin building long-term connections with students.
 - Enhance the collaboration between librarians and course instructors.
 - Foster the infusion of library instruction into the course content.

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Appendix

Exploring Library Research Instruction Survey of Graduate Students

Please help librarians improve future library instruction by providing your feedback. Thank you.

Degree Program and Cohort:

Teaching Area(s):

Year of Study in Current Program:

Degree(s) and Date(s) Completed:

Grade(s) Level(s):

On-line Demonstrations:

1. The most significant thing I learned from this demonstration was

2. What aspects of these online demonstrations helped you to learn about the library research process?

3. What recommendations do you have to improve these online demonstrations?

In-class Library Workshop:

4. List the three most important things you learned in this in-class library session?

5. What concerns did you have about conducting research prior to participating in this session?

6. In your opinion, did this session increase your confidence in doing library research?
Yes No
Please explain, giving examples.

7. What do you feel are the benefits of face-to-face session with an academic librarian?

8. What recommendations do you have for improving library research instruction for graduate students?

9. Check the box nearest to the number/comment that best represents your evaluation of the in-class workshop:

How much of the material presented was new to you?	Totally New		Somewhat New		Nothing New
	Agree		Neutral		Disagree
Information covered in this session is of use to me	5	4	3	2	1
Prepared me to use the library resources because of this workshop	5	4	3	2	1
I see the importance of library resources for my course work	5	4	3	2	1

10. Any other comments? (Please continue writing on the other side if you need more room for any of these questions)