Collaboration in Online Teaching: Library Instruction and Education Research

Faith Maina & Barbara Shaffer
SUNY Oswego

Abstract

Recent explosion of online teaching has brought unique challenges for libraries as they strive to provide access to necessary resources and services for distance learners. These challenges are increased by the desire to provide the same level of library services to distance learners as to their on-campus counterparts. In response, many libraries are increasing electronic resources and developing special services, including online library instruction. However, little has been done to document the impact of this access on students' learning and their satisfaction. This paper presents some evidence of students' satisfaction and increased proficiency in research, as a result of direct library instruction for students in an action research course offered through SUNY Learning Network (SLN).

Distance learning and library support

Most institutions of higher learning around the world have embraced interactive technologies as an efficient and cost effective way of delivering courses. The explosion of web-based courses has brought new challenges and responsibilities to libraries in their efforts to provide service to distance learners. One challenge is to find new and "alternative methods of teaching how to access and search online resources" (Arnold, Sias & Zhang, 2002, p. 29), and the responsibility is to close the digital and geographical divide that marginalizes and isolates distance learners. According to the Association of College & Research Libraries (ACRL), library resources and services for distance learners should be equal to those for on-campus students, including "a program of library user instruction designed to instill independent and effective information literacy skills while specifically meeting the learner-support needs of the distance learning community" (2004, p.5). However, a study done on 100 randomly selected institutions of higher learning that offer distance learning found that "although many distance education pages provided information on computer requirement and student readiness, none provided a similar self assessment for information or research skills" (Nicholas and Melba, 2005, p.5). This clearly shows that information literacy and research are given low priority when it comes to distance learners.

Distance learners, even those who are computer literate, face unique challenges in the online environment. For example, a recent study on motivation for distance learners has shown that failure to access resources in a timely manner leads to frustration and inability to complete the assigned tasks, ultimately leading to low self- esteem and potentially dropping out of the course (Lee, 2000). Another study collected demographic data on distance learners, which painted a picture of a non-traditional student stressed by other responsibilities such as family and full time jobs, with a high level of anxiety (Harrell, 2002). Collins and Veal have closely examine the stereotypical "library anxiety", and with a group similar to our subjects—k-12 educators—found that adult learners' library anxieties were highest for "anxiety pertaining to affective barriers (i.e., self-perception of their abilities to access library resources)" (2004, p.12). Many of the students in the current study are experienced teachers who are often pressured to return to school by licensure requirements that tie salary increment and permanent certification

to successful completion of a masters program, and they are likely to have the same stress and anxiety observed in these previous studies.

To begin to address these challenges, we undertook a collaborative activity that integrates direct library instruction into an online action research course. Beagle (2000) encourages "active collaboration between librarians and teaching faculty on a pedagogical design for better integration of library resources with course content" and "the use of the Web to refocus library instruction on the needs of individual students rather than classroom groups" (p. 6). Markgraf (2002) echoes this theme in reminding us that "we are committed to teaching library research and information literacy skills, and we have long known that such skills are most effectively learned when they are integrated into the curriculum" (p.452). Goals of the collaboration described here include provision of effective library instruction for distance learners and attention to the special needs of this population. This study analyzes the satisfaction and research proficiency of the students at the conclusion of direct library instruction integrated into the online action research course.

Library Access for Distance Learners

A review of literature demonstrates that libraries have already begun to address the needs of distance learners in many ways. Distance learning librarians in many institutions have the responsibility of negotiating and promoting equal services for distance learners. Among services in common practice is document delivery for off-campus students, special instructive web pages or tutorials, online books and journals, and e-mail or chat reference service (Fletcher & Stewart, 2001).

One theme, effective use of technology as the means for delivery of library resources and services, was found in a number of studies. Arnold et al (2002) focused on technological solutions to instruction, access, and document delivery in technology-challenged and remote environments, even describing an instructional CD-ROM on research strategies, article retrieval and distance learner services. Thompson (2002) found that institutions of higher learning are using a "mix of newer technology and more traditional methods of delivery" (p.340), including telephone and e-mail reference. Viggiano (2001) has instituted the use of chat technology to offer real time online library instruction to distance learners in a virtual classroom, with topics including "library services available to students, remote access issues, proxy configuration, selection and searching of online catalog and databases, and basic research techniques like developing effective research strategies" (p.3).

Regardless of the opportunities that advances in service and technology offer, however, students will be frustrated and dissatisfied if they are not skilled in using them. Lee (2000) examined the effect of easy access to resources on student motivation, and concluded that for online students "it is important to provide sufficient and timely services, such as library service, to remove environmental constraints" (p.373). Another prominent emotion in the online environment is confusion, which leads Morariu (1988) to suggest that "learners must be provided with appropriate and clear navigational and conceptual tools in order to explore even the best-designed system" (p.19). As Riedel (2002) observed, however, "The literature abounds with suggested technologies to serve distance learners, but many focus on providing the technology while depending on the student to find it and use it" (p.481).

In this study we, a faculty member and a librarian, collaborated in the online classroom, with instruction designed to address this gap between the opportunities for distance students' access to online library resources/information literacy instruction and their ability to use them to

best advantage. Based on the previous research it can be argued that library integration into an online course should improve research success and student attitude about the research process. Dewald, Scholz-Crane, Booth, & Levine (2000) took a careful look at this strategy for distance learner library instruction, or information literacy instruction. They described the importance of such librarian/student interaction:

> The instructor/student relationship is especially important for teaching librarians who are usually not the primary course instructors. In some cases, the librarian may find himself or herself trying to mirror the one-shot lecture approach in the online environment…The relationship between information literacy concepts and course content can be strengthened with the online chat participation of both the librarian and the course instructor. (p.35)

This idea concurs with Roccos (2001) suggestion that librarians should develop "online library courses that coordinate with other online college courses" (p.6), and her identification of web portals and online courseware as effective tools for beginning online library instruction. It also resonates with Tobin's (2004) emphasis on course-integrated information-literacy modules as a best practice where "librarians teach asynchronously to students who have immediate assignment-based needs" (p.8).

**The Collaboration: Direct Library Instruction within the Course Modules**

The course on which we collaborated is designed to introduce graduate education students to action research, a form of systematic inquiry by practitioners on their own practice. Many students enrolled in the course are teachers in the field, and are investigating real-life situations. The course is offered through the SUNY Learning Network (SLN) in an asynchronous learning environment, and it is delivered using a custom designed courseware similar to Blackboard or WebCT. (For more information on the technical details of these products, see Cox's description of the Blackboard program [2002].) In the modules preceding library instruction, students go through the process of selecting a research topic or area of focus that is relevant to their work environment, with guidance from their professor:

> The research process begins with serious reflection directed towards identifying a topic or topics worthy of a teacher's time. Considering the incredible demands on teachers, no activity is worth doing unless it promises to make the central part of teachers work more successful and satisfying. Selecting a focus begins with the teacher researcher asking: *What element(s) of my practice or what aspects of student learning do I wish to investigate?(selecting a topic, module #2)*

After identifying a research topic, the students begin refining those topics by self reflections entered in a weekly journal. They explore their experiential knowledge by putting the focus into a historical context, and assessing its educational value and implications for teaching and learning. Once they gain insights and clarify their focus, the librarian comes on board in Module #3 (Figure 1) to offer direct instruction in research techniques. To ensure equal benefit for online students, the content presented is adapted from face-to-face library instruction successfully used by the same faculty/librarian team in similar research classes. The librarian remains available throughout the module to participate in online discussion and to answer any

questions submitted in the 'ask a professor' area of the course module, 'private folder' (online office hours for students) or just by e-mail. After completing the library instruction, students are required to complete a critical analysis of literature based on their topic or focus area.

Figure 1: Sample screen from the library module
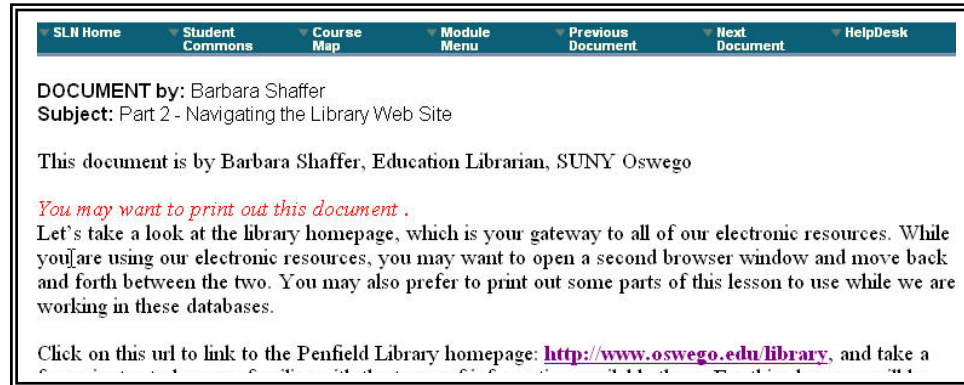
During the course of the library module, students are given specific directions for conducting research using the extensive education article index, the ERIC database. They are guided step-by-step through the process, conducting searches using their own topics. Module content includes sections on using the online ERIC thesaurus to identify appropriate subject terms, using Boolean operators, adding appropriate limits, refining the search, and locating the full-text articles chosen from the list of results. The last step often seems to be the most challenging, and it is one of the most important in terms of providing distance learners with equal access. With the move toward more electronic journals this process is simplified, but still often involves requesting special services such as document delivery or interlibrary loan. Frequently class questions and discussion are focused on this aspect of the research process. In lieu of the traditional live demonstrations, screen shots are included in the online module to illustrate each step of the process. This allows students to view their searches in comparison to a sample search. Because of the known high incidence of reliance on Internet resources in online course research (Liu & Yang, 2004), students are also instructed in techniques for evaluation of websites. To evaluate whether the students do indeed meet the goals of the module, the professor and librarian have developed a multipart assignment on ERIC search strategies and website evaluation to assess mastery of the information literacy skills. The assignment asks the students specific questions about their search (see appendix A), and is graded by the librarian. Grading of this assignment has increased the motivation for careful completion, as has the quality of the resulting bibliography that students use for the critical review assignment they complete after the direct library instruction.

Method

To evaluate the impact of this collaboration on students' satisfaction and proficiency in library research, we gathered information from various sources. First, we surveyed 30 students enrolled in the spring and summer semesters of 2004, and received a total of 22 responses (Figure 2). This survey was designed to determine student opinions after experiencing direct library instruction in their online class. Questions addressed students' confidence in their

research skills, perceived applicability of these skills to future research (i.e., life-long learning), and student satisfaction with the library research module (see Appendix B). Each question offered a scale of four or five choices, with number 1 being the most negative response. Those with five choices required a neutral answer (#3). For the purposes of analysis, answers of 1 or 2 were viewed as negative, the highest two possibilities for each question were viewed as positive response. Additionally, open-ended questions were asked to allow students the opportunity to comment on other issues. Second, student performance data for the multipart library assignment was reviewed (see Appendix A), and, third, comments were gleaned from a culminating activity in which students wrote about their overall course experience.

Figure 2: Results of Student Survey

Findings
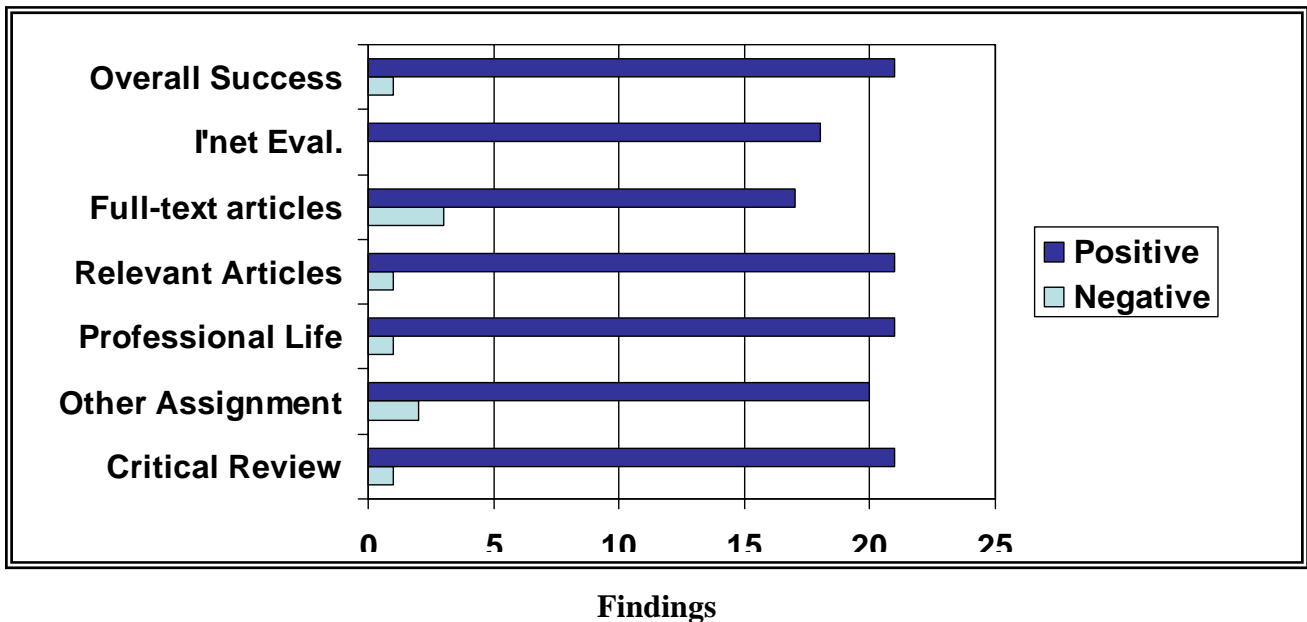
It is clear that providing distance students with direct course-integrated library instruction results in a high level of student satisfaction and development of effective research skills. All students in the two sections surveyed successfully completed the library multipart assignment and scored 93% on average. This is especially satisfying since a good number of students (62%) reported that they had no prior experience in searching the ERIC database, and 66% actually rated themselves as beginners with little or no prior experience in searching databases. Yet, after the direct library instruction, 90% of students reported that the strategy had been very helpful in terms of successful completion of the critical review assignment. This finding was summarized by a student who reported:

> I learned a great deal about how to search for articles online via the ERIC database. While I did know how to do it previously, through my undergraduate work, I now feel much more confident about searching for an article. (Online student)

Answers to open-ended questions and comments from the final assignment were analyzed by theme, and support the same conclusions. The final assignment included no prompts for library

related feedback, but rather asked students to share impressions of the overall class. This makes it especially significant that the library assignment received 14 comments, including 5 citing the helpfulness of the library instruction module and 5 applauding the collaborative model or librarian presence in the class.

Many students reported that this instruction had helped them to complete assignments in other subjects and had to some extent made an impact on their professional life—good evidence of life-long learning! This again was well summarized by a student who reported:

> A benefit to all this though was that the research techniques and library research techniques that I learned in here paid off BIG TIME in my literature class, and I wrote that 18 page paper and got a 100 on it – surprising the heck out of me considering the enormity of the undertaking. (Online student)

Students also reported that their confidence was high after the library instruction, both for identifying relevant articles and obtaining them as full-text. 85% said they either "agreed" or "strongly agreed" that they were able to obtain online articles. Students found the skill of evaluating websites quite valuable. It was noteworthy that students either "agreed" or "strongly agreed" that they are now confident in this evaluation, especially important with the ubiquitous nature of these resources. Many of them reported this knowledge would help them to avoid the potential misinformation found on some Internet sites, including one student who observed:

> I also found it very useful that I was able to get the information to critique internet sites. People assume that what is on the internet is accurate and useful when in most instances it is not. (Online student)

Many students (62%) had no prior ERIC instruction, and even they noted the confidence and skills they had acquired through the library module. For example, a typical student comment among this group was:

> The library activity was extremely helpful. It was a great experience to do my own research, yet have someone there to help me if it was needed. (Online student)

Finally, students had indeed noted and appreciated the collaboration that had taken place within this course and commented directly about it. One student shared:

> Keep up the good work. I enjoy the collaboration in that specific module. It builds in that relationship with the library. I think if that hadn't [been] there I might not have turned out as high quality of a product. (Online student)

It is clear from this analysis that students were satisfied with the direct instruction integrated into the course. They were motivated to complete their assignments and also to produce high quality work. They also suggested that this service should be expanded to other students, with 71% in agreement that they would "definitely" recommend this library instruction to a peer.

Discussion and Conclusions

The results of this study show a high level of satisfaction with the library instruction offered and a high proficiency in research skills. Students who had little prior knowledge or confidence in developing research strategies reported a high level of competence in the skills taught. They were able to complete their assignments in a timely manner and were also happy with the quality of their completed work.

As with much research that utilizes students' self report, caution must be taken because of the dynamics associated with student/teacher relationship. Some students could report what the teacher wants to hear for fear of retribution, since this data was collected through the course management system and not anonymously. It is also important to remember that this is a self-selecting sample, and that not all class members responded. While these factors might have inflated the positive response, the researchers believe it is unlikely they would significantly alter the conclusions. By the same token, the mistake should not be made to generalize to all online courses. Our study differed from previous studies in its focus on satisfaction rather than academic performance. It is a study that has provided valuable feedback to us as the instructors of this course. To support broader claims, more data would need to be collected and analyzed.

However, it is evident that distance learners do need practical help in obtaining resources to enable them complete assigned tasks effectively and conveniently. There should be no assumption that distance learners will utilize resources effectively just because they are made available to them technologically. Neither should it be assumed that they will gain the appropriate information literacy skills. A librarian and an education research professor collaborated to provide direct instruction to teachers in a research course at SUNY Oswego. The results of this study suggest that attention to implementing more collaborations of this type would be of great benefit to students in the growing online teaching movement.

The literature proposes many models which are available to librarians and teaching faculty for designing course integrated library instruction, and technical support is frequently available from campus coordinators of online courses. An effective way of proceeding is to develop collaborations for this work between librarians and teaching faculty, which at many institutions will mean building on already established relationships in liaison programs or face to face instruction. It is critical that librarians and faculty work now, as this new mode of collaboration is being developed, to ensure that all students including distance learners are provided with equal opportunities to acquire information literacy skills.

References

Arnold, J., Sias, J., & Zhang, J. (2002). Bringing the library to the students: Using technology to deliver instruction and resources for research. *Journal of Library Administration, 37*(1/2), 27-37.

Association of College and Research Libraries. (2004). Guidelines for distance learning library services. Retrieved Dec. 16, 2004, from http://www.ala.org/ala/acrl/acrlstandards/guidelinesdistancelearning.htm.

Beagle, D. (2000). Web-based learning environments: Do libraries matter? *College and Research Libraries, 61*(4), 367-379. Retrieved March 26, 2002, from Wilson OmniFile database.

Collins, K.M.T., & Veal, R.E. (2004). Off-campus adult learners' levels of library anxiety as a predictor of attitudes toward the internet. *Library & Information Science Research, 26*, 5-14. Retrieved Jan. 20, 2006, from Science Direct database.

Cox, Christopher. (2002). Becoming part of the course: Using blackboard to extend one-shot library instruction. *College & Research Libraries News, 63*(1),11-13, 39.

Dewald, N., Scholz-Crane, A., Booth, A., & Levine, C. (Jan. 2000). Information literacy at a distance: Instructional design issues. *The Journal of Academic Librarianship, 26*(1), 33-44. Retrieved Jan. 20, 2006, from Haworth Press online journals.

Fletcher, J., & Stewart, D. (2001). The library: An active partner in online learning and teaching. *Australian Academic & Research Libraries, 32*(1), 213-221. Retrieved Nov. 29, 2004, from InfoTrac database.

Frederiksen, L. (2002). Grading ourselves: Using the ACRL guidelines for distance learning library services to develop assessment strategies. *Journal of Library Administration, 37*(3/4), 333-339. Retrieved August 15, 2005, from Haworth Press online journals.

Harrell, K. (2002). Reducing high anxiety: Responsive library services to off-campus learning and teaching. *Journal of Library Administration*, *37*(3/4), 355-365. Retrieved Dec. 6, 2004, from Haworth Press online journals.

Lee, C-Y. (2000). Student motivation in the online environment. *Journal of Educational Media & Library Sciences, 37*(1), 367-375. Retrieved Dec. 6, 2004, Wilson OmniFile database.

Liu, Z. &Yang, Z.Y. (2004). Factors influencing distance-education graduate students' use of information sources: A user study. *The Journal of Academic Librarianship, 30*(1), 24-35. Retrieved Dec. 6, 2004, from Haworth Press online journals.

Markgraf, J. (2002). Collaboration between distance education faculty and the library: One size does not fit all. *Journal of Library Administration, 37*(3/4), 451-464. Retrieved Jan. 10, 2005, from Haworth Press online journals.

Morariu, J. (1988). Hypermedia in instruction and training: The power and the promise. *Educational Technology, 28*(11), 17-20.

Nicholas, M., & Tomeo, M. (Summer 2005). Can you hear me now? Communicating library services to distance education students and faculty. *Online Journal of Distance Learning Administration, 8*(2). Retrieved Jan. 19, 2006, from http://www.westga.edu/%7Edistance/ojdla/summer82/nicholas82.htm.

Reidel, T. (2002). Added value, multiple choices: Librarian/faculty collaboration in online course development. *Journal of Library Administration, 37*(3/4), 477-487. Retrieved Dec. 15, 2004, from Haworth Press online journals.

Roccos, L. J. (2001). Distance learning and distance libraries: Where are they now? *Online*

Journal of Distance Learning Education, 4(3). Retrieved Jan. 20, 2006, from http://www.westga.edu/~distance/ojdla/fall43/roccos43.html.

Thompson, H. (2002). The library's role in distance education. *College &Research Libraries News¸ 63*(5), 338-340. Retrieved Dec. 6, 2004, from Wilson OmniFile database.

Tobin, T. (Summer 2004). Best practices for online information-literacy courses. *Journal of Interactive Online Learning, 2*(4). Retrieved Jan. 20, 2006, from http://www.ncolr.org/jiol/archives/2004/spring/03/index.html.

Viggiano, R. & Ault, M. (2001). Online library instruction for online students. *Information Technology and Libraries, 20*(3), 135-138. Retrieved Jan. 10, 2005, from Research Library Periodicals database.

Appendix A

Part 1: After reading module sections 1 - 3c, begin your search using the research question you developed earlier in this module. Please restate it here, and then list two or three main concepts (terms or phrases) in that question. It may help you to write this out on paper and underline what you think are the most important terms.   See the detailed instructions and example in the "Library Research Assignment Instructions" (Module 3 part 3c under "Library Research".)

Look up these terms, or their synonyms, in the ERIC Thesaurus. For each of these terms, choose 1 or 2 SUBJECT words or phrases that seem suited to your research topic. Remember to copy them exactly as they are in the thesaurus. Follow the example in section 3c of module 3. SUBJECT terms are always blue links in ERIC, not black. 2 points

Part 2: After reading parts 3d - 4b of this module, do your search in the FirstSearch ERIC database, being sure to include *ALL* of these four criteria:
a) research articles (limit by record type=research); b) journal articles only; c) no more than 10 years old; d) appropriate subject terms searched as subjects.   If you are not sure how to include these limits, reread the section "Adding Limits" and see the sample search screen there.

Use SUBJECT terms from part 1 of this assignment in two of the boxes. Use keywords only if there are no subject terms related to your topic. Review your lesson for other ways to broaden or narrow your search.

If you have trouble satisfying all of the criteria of this assignment, contact me (Barbara Shaffer) for help as soon as possible.   With some narrow topics it may be very challenging to find good subject terms or research articles, so I will be glad to offer suggestions.

Copy and paste below your search strategy, taken *directly* from the top grey bar of the FirstSearch results list screen. It will appear following the phrase "ERIC results for:” This information will tell me (and you) exactly what you have searched, and whether you have met all the requirements for this question.   3 points

Part 3: Copy and paste below the "brief record" for 3 articles you found doing your search in part 2 above. These should all be relevant to your research question above.   (If you need to do additional searches to find all of your articles, please tell me what alternate subject/keyword terms you used, and apply the same limits.)

Part 4: After reading module sections 5a - 5c, check the articles you listed in part 3 to see whether they are available full-text from Penfield Library. List the author for each below, and indicate "paper", "electronic" or "interlibrary loan only".   You do not need to locate the article in more than one format. Be sure to compare the date you need with dates of coverage.   1 point

Part 5: Create bibliographic citations for the articles listed in assignment part 3, including retrieval information for online articles (not ERIC). Use APA Style, 2001 edition, which is shown on the Penfield Library APA guide. Details of organization and punctuation are

important in research, so a copy and paste from part 3 is not acceptable. (Since I know italics and hanging indents are not possible using this software, I will just remind you now to include them in your final reference list.) 1 point

Part 6: *After reading module sections 6a & 6b, use an Internet search engine or directory and identify 2 Internet sites that have content relevant to your research and are of high quality. ** Give the title of the sites and urls below.** Use the evaluation criteria that you read about in the "Quick Guide" in choosing these sites: Reliability, Purpose, Currency, and Balance. Comment below on 2 of these criteria for each site, being sure to indicate which criteria you are addressing and why you feel each is, or is not, met. For example, I feel this is a reliable site because the author....   DO NOT use .com sites (commercial) or sites that are collections links or lists of resources only.   2 points*

Appendix B

Student Survey

1.   Have you had direct instruction on searching the ERIC database prior to this course?
     1) Yes   2) No

2.   How would you rate your overall experience with database searching prior to the course?
     1) Never searched   2) Beginner 3) Advanced 4) Expert

3.   How helpful did you find the library instruction in completing your critical review assignment?
     1) Not helpful   2) Somewhat helpful   3) Helpful   4) Very helpful

4.   How helpful have you found the library search skills acquired in this module in completing other assignments?
     1) Not helpful   2) Somewhat helpful   3) Helpful   4) Very helpful

5.   The library search skills I acquired through this module have made an impact in my professional life?
     1) Strongly disagree   2) Disagree   3) Neutral   4) Agree   5) Strongly agree

6.   After completing the library assignment, I'm now confident in getting articles relevant to my research topic.
     1) Strongly disagree   2) Disagree   3) Neutral   4) Agree   5) Strongly agree

7.   I'm also able to obtain full-text of these articles.
     1) Strongly disagree   2) Disagree   3) Neutral   4) Agree   5) Strongly agree

8.   I'm now confident in evaluating web sites.
     1) Strongly disagree   2) Disagree   3) Neutral   4) Agree   5) Strongly agree

9.   Overall, how would you rate the library instruction in terms of successful completion of the course?
     1) Not important   2) Somewhat important   3) Neutral   4) Important   5) Very important

10. Would you recommend the library instruction to a peer?
     1) No   2) Maybe   3) Yes

11. What parts of the library instruction did you find most useful?

12. What parts of the library instruction did you find least useful?

13. Is there anything else you would like to add about the library instruction module?