University of New Hampshire
University of New Hampshire Scholars' Repository

5-13-2015

Charting Success: Using Practical Measures to Assess Information Literacy Skills in the First-Year Writing Course

Annie E. Donahue
University of New Hampshire - Manchester, annie.donahue@unh.edu

Follow this and additional works at: https://scholars.unh.edu/unhmlibrary_pub

Part of the Library and Information Science Commons

Evidence Based Library and Information Practice

Charting Success: Using Practical Measures to Assess Information Literacy Skills in the First-Year Writing Course

Ann Elizabeth Donahue
Interim Dean
Dimond Library
University of New Hampshire
Durham, New Hampshire, United States of America
Email: annie.donahue@unh.edu

Abstract

Objective – The aim was to measure the impact of a peer-to-peer model on information literacy skill-building among first-year students at a small commuter college in the United States. The University of New Hampshire (UNH) is the state's flagship public university and UNH Manchester is one of its seven colleges. This study contributed to a program evaluation of the Research Mentor Program at UNH Manchester whereby peer writing tutors are trained in basic library research skills to support first-year students throughout the research and writing process.

Methods – The methodology employed a locally developed pre-test/post-test instrument with fixed-choice and open-ended questions to measure students' knowledge of the library research process. Anonymized data was collected using an online survey with *SurveyMonkey*™ software. A rubric was developed to score the responses to open-ended questions.

Results – The study indicated a positive progression toward increased learning for the three information literacy skills targeted: 1) using library resources correctly, 2) building effective search strategies, and 3) evaluating sources appropriately. Students scored higher in the fixed-choice questions than the open-ended ones, demonstrating their ability to more effectively identify the applicable information literacy skill than use the language of information literacy to describe their own research behavior.

Conclusions – The assessment methodology used was an assortment of low-key, locally-developed instruments that provided timely data to measure students understanding of concepts taught and to apply those concepts correctly. Although the conclusions are not generalizable to other institutions, the findings were a valuable component of an ongoing program evaluation. Further assessment measuring student performance would strengthen the conclusions attained in this study.

Introduction

Due to limited budgetary and staffing issues, small academic libraries within the United States face a cornucopia of challenges when delivering a broad spectrum of services to their constituents. These challenges often engender innovative and creative solutions that yield delightful and unexpected outcomes. The Research Mentor Program at the University of New Hampshire (UNH) Manchester is one of those happy circumstances. Through this program, research mentors become the conduit whereby the librarians are able to extend academic support beyond the library walls to reach first-year students at each stage of the research process – from brainstorming topics; developing effective search strategies; evaluating sources to preparing outlines; developing thesis statements; and drafting through the writing/revision cycle.

In the Research Mentor Program, the Library partnered with the College's Center for Academic Enrichment (CAE) to improve students' information literacy skills in all First-Year Writing courses. One critical component of this collaboration was the incorporation of peer writing tutors trained in basic library research skills who worked side-by-side with the instruction librarians in the classroom as research mentors to first-year students. The UNH Manchester librarians recognize research and writing as an integrated process and used this approach to provide these students with essential support throughout the research process. Within the classroom, research mentors worked with librarians to model effective research strategies. Outside the classroom, they worked directly with students in individualized tutorials.

Small class size and teaching excellence are hallmarks of UNH Manchester. First-Year Writing courses are capped at 15 students and generally six sections of the course are offered each semester. The Library's information literacy instructional plan includes three 90-minute sessions per section to scaffold learning in manageable units each building upon the previous unit. This intense delivery model is a deliberate effort to meet students' developmental readiness levels and to embed information literacy into the curriculum of the composition program.

The genesis for the Research Mentor Program came from an idea presented in a poster session at an Association of College and Research Libraries (ACRL) annual conference. The original design utilized students trained in basic library research techniques to assist other students with their research projects at evening and week-end drop-in sessions held in the residence halls. By modifying the delivery method to accommodate a commuter campus, capitalizing upon the College's collaborative culture and partnering with the CAE's successful peer tutoring enterprise, the UNH Manchester Library was able to experiment with an innovative, student-centered approach to increasing information literacy competencies (Fensom, McCarthy, Rundquist, Sherman, & White, 2006; White & Pobywajlo, 2005).
The program has evolved since its inception in 2004. Although originally focused on serving the students in the First-Year Writing course, in the Fall semester of 2013 the program reach was

extended to include the use of peer research mentors across the disciplines and in upper-level courses. Each of the three members of the Library's instruction team had a significant role in ensuring the success of the program. The Information Literacy Instruction Coordinator partnered with the Director of the CAE to design and teach the two to four credit-bearing Tutor Development course required of each peer writing tutor. The Information Literacy Specialist developed the course objectives and delivered instruction for all sections, partnering with the research mentors to include modeling of best practice techniques through a peer-to-peer lens. The Library Director collaborated with the instruction team to craft effective assessment instruments, liaised with the teaching faculty and administration to ensure adherence to research protocol, and analyzed the data collected.

During the first seven years of the program, anecdotal evidence suggested the program was a successful one, but a systematic evaluation that provided clear evidence was long overdue. In the academic year 2011, the library instruction team planned and implemented the first phase of a program evaluation to gather data to assess the impact of this peer-to-peer model on student learning. Beginning with a pilot study in the Spring 2011 semester, the study continued through the next two semesters resulting in data that highlighted strengths and indicated areas for improvement. This paper discusses selected quantitative and qualitative findings from this eighteen-month study measuring the effectiveness of delivering information literacy through a peer-to-peer approach, replacing the traditional one-shot library instruction methodology with semester-long engagement in information literacy skill-building.

Literature Review

The professional literature describes a variety of collaborations that exist between the academic library and the college writing centre. Some examples defined shared-space arrangements

leading to mutually beneficial opportunities that enhanced student services (Currie & Eodice, 2005; Foutch, 2010; Giglio & Strickland, 2005). Other examples described joint workshops led by instruction librarians and the professional writing staff focused on improving student learning outcomes (Artz, 2005; Boff & Toth, 2005; Cooke & Bledsoe, 2008; Leadley & Rosenberg, 2005). Further examples discussed the use of peer tutors serving in an assortment of roles from marketing ambassadors to basic research support assistants (Cannon & Jarson, 2009; Deese-Roberts & Keating, 2000; Furlong & Crawford, 1999; Gruber, Knefel & Waelchli, 2008; Lowe & Lea, 2004; Millet & Chamberlain, 2007).

When library collaborations with writing centres utilized student peer tutors rather than professional staff a new dimension – peer-to-peer learning – made it possible to extend the reach of the librarians beyond the instruction class. When these collaborations involved an aspect of research or instruction assistance, various levels of training were incorporated to prepare these student peer tutors to develop the basic skills necessary for engaging with research strategies and processes. This training provided the peer tutors with critical foundational skills that enabled them to directly respond to research questions that arose during writing tutorials.

A classroom clinic, co-led by instruction librarians and student peer tutors, is described in an article by Gruber et al. (2008). This collaboration was crafted to respond to assignment-specific objectives that reflected information literacy standards and effective writing criteria. The alliance between librarian, faculty, and peer tutor enabled the students in the course to participate in small group experiences, facilitated by either the librarian or peer tutor, in order to grapple with identifying the key elements of scholarly inquiry and evaluating academic journal articles.
At the University of New Mexico, Deese-Roberts and Keating (2000) discussed the collaboration

between the library and the writing centre whereby peer writing tutors were trained by librarians in "five key concept areas: (1) library services and policies; (2) search strategies; (3) Boolean logic, search logic, and limits; (4) vocabulary (controlled vs. natural); and (5) database structure" (p. 225). Peer writing tutors then worked with students on research and writing projects. Assessment of the pilot program indicated positive feedback from all stakeholders. The assessment focused on user satisfaction and participation. Student participation in the program "increased 100% from the first to the second semester" (p. 228) inspiring the authors to declare the pilot program a success.

Elmborg (2005) suggested that peer tutors work effectively because they "understand the student perspective . . . they live that perspective" (p. 15). Nelson (1995) proposed that peer tutors were well situated to assist less capable students because they empathized and guided comprehension more effectively since they "speak the language of other undergraduates more distinctly than graduate students and professors" (p. 45). Lowe and Lea (2004) defined the peer tutor in an academic setting as "a person who helps you over bumps and makes you realize that you really can do it – whatever it is – by yourself" (p. 134).

Several academic libraries have incorporated undergraduate students in their instruction programs. The role of these students varied from facilitating small group discussions (Gruber et al., 2008) to roaming the classroom providing assistance during hands-on activities (Deese-Roberts & Keating, 2000) to teaching mini-seminars on specific library resources (Holliday & Nordgren, 2005). As the demand for library instruction in lower-division general education courses grew to unsustainable levels, librarians at California Polytechnic State University implemented a "student-based solution" (Bodemer, 2013, p. 578). Undergraduate students serving as reference assistants received additional training in instructional design, were designated as peer instructors, and worked alongside the librarian in the classroom. The online evaluations for each session showed that students ranked these peer instructors higher than the librarians on an affective scale (Bodemer). Based on these evaluations, the student peer instructors were assigned to lead basic information literacy sessions independently.

At UNH Manchester, the peer tutor program was already a College Reading and Learning Association certified program that was highly effective and recognized the benefits of students helping students. By enhancing the writing tutor's toolkit with information literacy skills and integrating them into the instruction sessions to model good research behaviour, these research mentors became better equipped to guide first-year students through the entire research process.

Aims

The impetus for undertaking a program evaluation study was the imminent retirement of the Director of the CAE. As the search for a new director began, it became apparent that there was no measurable evidence available to support continuation of a program deemed valuable to the stakeholders. Whenever the program's value was discussed, its success was attributed to the connections forged through "a network of people dedicated to helping [students] achieve their academic goals" (White & Pobywajlo, 2005). Yet no data existed to support this claim as no evidence that students' achieved their goals was ever collected. It was time to formalize assessment and develop a plan that would measure the impact of the program. In Fall 2009, the information literacy instruction team began building an assessment plan to evaluate the program. Although it was agreed that improving teaching and learning were important goals for this evaluation, demonstrating the program's effectiveness and value to ensure the continuation of the program was an essential purpose for this study.

A review of the program objectives identified by both the library and the CAE suggested a three-phased approach for the program evaluation plan: 1) measure change in students' information literacy skills in First-Year Writing courses and their self-perceptions of confidence with the research process, 2) examine peer tutor experiences and their perceptions of self-development as a result of participating in the program, and 3) investigate faculty perceptions of their students' learning outcomes attributable to the program's peer-to-peer model.

Both departments shared common objectives for student success that focused primarily on increasing critical thinking, improving research and writing skills, and giving students the tools to become information literate. These objectives became the goals measured during the initial phase of the program evaluation. The aim of the program evaluation was to measure the impact of a peer-to-peer model on information literacy skill-building among first-year students. This paper presents selected results from the initial phase of the program evaluation which measured the impact on information literacy skills.

Methodology

The study received Institutional Review Board protocol approval in January 2011, and a pilot study was implemented that Spring semester. All students enrolled in a First-Year Writing course were invited to participate in the study. The size of the college (approximately 900 undergraduates) resulted in a small pool of potential participants. Although random sampling was a desired method, the capped enrolments in these courses made convenience sampling the most logical approach to obtain a reasonably-sized data pool. Participation was voluntary, and students could opt to leave the study at any time during the semester.

Several quantitative and qualitative measures were designed to assess the goals identified for this study. A pre-test/post-test instrument

(Appendix A) measured students' knowledge about the library research process by asking students to respond to questions, both fixed-choice and open-ended, thereby demonstrating competency levels for defining, investigating, and evaluating an information need.

The pre-test instruments were administered on the first day of the course during the pilot semester, but in subsequent semesters pre-tests were given during the second week of classes. This brief delay was designed to allow students time to understand course expectations before making a decision about participating in the study. Results of the pre-test formed a baseline measure of students' abilities and were available to the librarian prior to the first information literacy instruction session. Then, in the penultimate class, the post-test instruments were administered. Assessment instruments were administered online using *SurveyMonkey™* software in one of the College's computer classrooms during normal class hours.

A rubric (Appendix B) was used to measure the open-ended questions, but with limited experience in designing and using rubrics a review of the literature was a necessary first step (Brown, 2008; Crowe, 2010; Daniels, 2010; Diller & Phelps, 2008; Fagerheim & Shrode, 2009; Gardner & Acosta, 2010; Knight, 2006; Oakleaf, 2008, 2009a, 2009b; Oakleaf, Millet & Kraus, 2011). In the rubric design, aligning the criteria to the objectives of the first-year information literacy curriculum provided the framework within which to craft the measures. A valuable source for examples of designing and using rubrics was found at the RAILS (Rubric Assessment of Information Literacy Skills) website (http://railsontrack.info/).

Results

The sample size was small for each semester but consistent with enrolment patterns for the College. During the pilot semester (Spring 2011), 54 students enrolled in the First-Year Writing course but only 31 students agreed to participate

in the study. The 57% participation rate was disappointing and attributed to asking students to participate by completing the pre-test on the first day of class before students had any understanding of the class expectations. In each subsequent semester, the invitation to participate and the administration of the pre-test occurred during the second week of class resulting in a 100% participation rate each semester. In Fall 2011, the sample size was 76 students and in Spring 2012, the sample size was 48 students. Attrition rates for First-Year Writing significantly affected the post-test sample size in every semester. In Spring 2011, only 28 students remained in the study. In Fall 2011, the post-test was completed by 55 students and in Spring 2012, the post-test sample size numbered 32.

The pre-test/post-test instrument included six questions designed to identify students' previous library research experiences and an additional nine questions focused on three ACRL Information Literacy Competency Standards: 1) The information literate student identifies a variety of types and formats of potential sources of information; 2) The information literate student constructs and implements effectively-designed search strategies; and 3) The information literate student articulates and applies initial criteria for evaluating both the information and its sources (ACRL, 2000).

Among the nine information literacy questions were three clusters of three questions that directly mapped these standards as learning objectives assigned to the information literacy instruction sessions delivered in the First-Year Writing course. Using a cluster approach enabled students to demonstrate knowledge of each learning objective by answering a set of three questions that explored a single

information literacy competency from multiple perspectives. Each cluster included two fixed-choice questions and one open-ended question. A fixed-choice question was written as an informational inquiry while the second was placed within the context of a potential research scenario. The open-ended question required students to describe the research activities they would complete to accomplish the task presented in the question. The results of these cluster questions are discussed here.

Table 1 shows the results for the two fixed-choice questions in each cluster. Findings indicated improvement each semester in five out of six questions. The question that indicated a lack of improvement was the question that measured the ability to evaluate sources in the research scenario format. In post-test results for this question, students in Spring 2011 scored an 11% increase over pre-test results, but Fall 2011 students scored a 7% decrease from their pre-test results. In Spring 2012, this question yielded no change in students' pre-test to post-test results.

Results for the remaining five questions point toward an increase in knowledge over the baseline measure; the percent of change across the remaining cluster questions ranged from a 6% to 57% increase. Table 1 visually depicts the quantitative results for each semester for both the informational inquiry and the scenario based formats.

Tables 2, 3 and 4 show the results of the final question in each cluster set; an open-ended question requiring students to demonstrate the research skills they would employ in response to the task described. Once again, each cluster question mapped to one of the information literacy competency standards identified above.

Table 1
Results of the Fixed-choice Questions

Cluster Sets: IL Standards 1-3	Pre- test Spring 2011	Post-test Spring 2011	Pre-test Fall 2011	Post-test Fall 2011	Pre-test Spring 2012	Post-test Spring 2012
Library Resources – info inquiry	68%	86%	48%	82%	62%	81%
Library Resources – scenario based	74%	100%	61%	82%	75%	81%
Search Strategies – info inquiry	32%	89%	43%	84%	53%	90%
Search Strategies – scenario based	16%	68%	28%	47%	28%	44%
Source Evaluation – info inquiry	55%	79%	76%	82%	64%	84%
Source Evaluation – scenario based	74%	85%	80%	73%	78%	78%

Table 2
Information Literacy Standard One – Determine the Nature and Extent of Information Needed

Ratings	Pre-test Spring 2011	Post-test Spring 2011	Pre-test Fall 2011	Post-test Fall 2011	Pre-test Spring 2012	Post-test Spring 2012
Novice	71%	57%	38%	22%	30%	31%
Emerging	23%	36%	43%	27%	35%	50%
Intermediate	6%	7%	14%	36%	28%	16%
Advanced	n/a	n/a	5%	15%	7%	3%
Expert	n/a	n/a	n/a	n/a	n/a	n/a

A rubric was developed to translate qualitative responses into quantitative scores. The rubric scored students' results on a five-point scale from novice to expert, based on the number of criteria students identified for each competency.

The first cluster set measured students' ability to define their information need. The seven criteria identified in ACRL's Information Literacy Standard One (ACRL, 2000) were incorporated into the rubric used to score students' responses. The rubric allowed for five rating levels determined by the number of criteria students listed in their responses. The rankings of novice to expert were based on students' naming the

criteria associated with the standard. When students described their research process by articulating one or no criteria they ranked at the novice level, two criteria ranked at the emerging level, three criteria ranked at the intermediate level, four or five criteria ranked at the advanced level, and six or more criteria ranked at the expert level.

Table 2 shows the rankings for Information Literacy Standard One. Results indicated students' skill levels improved across most semesters, as noted by a drop in novice rankings and a rise in emerging or intermediate rankings. Among the seven criteria measured, students

demonstrated notable growth in three areas: 1) *explores general information sources to increase familiarity with the topic*, 2) *identifies key concepts and terms that describe the information need*, and 3) *defines and modifies the information need to achieve a manageable focus*.

The second cluster set measured students' ability to construct an effective search strategy. Four criteria identified in ACRL's Information Literacy Standard Two (ACRL, 2000) were incorporated into the rubric used to score students' responses. Although students in each semester scored well in the pre-test on one criterion, *identified keywords, synonyms, and related terms for information need*, approximately one-third of students' responses denoted no search strategy at all. Post-test scores demonstrated that "no search strategy" responses were reduced by 50% and that search strategies using a combination of keywords with Boolean operators increased significantly; by 33% in Spring 2011, 47% in Fall 2011, and 19% in Spring 2012.

Table 3 demonstrates the change in rankings across the three semesters. When students described their search strategy, if they merely repeated the topic phrase or gave no answer they ranked at the novice level; if they identified keywords and related terms they ranked at the emerging level; and if they identified keywords and used Boolean operators they ranked at the intermediate level. Although no students

incorporated all four criteria denoted for this information literacy standard, results demonstrated improvement as novice rankings decreased and intermediate rankings increased.

The third cluster set asked students to name the criteria they used to evaluate sources. Five criteria identified in ACRL's Information Literacy Standard Three (ACRL, 2000) were incorporated into the rubric used to score students' responses. When students described the criteria used to evaluate sources, a response with one or no criteria was ranked at the novice level, two criteria ranked at the emerging level, three criteria ranked at the intermediate level, four criteria ranked at the advanced level, and five criteria ranked at the expert level.

Table 4 shows the rankings for Information Literacy Standard Three. In both Spring 2011 and Fall 2011 semesters, rankings indicated that students increased skill levels, however, Spring 2012 results reflected no improvement for this competency. Across all semesters in pre-test results, most students identified a single criterion as sufficient to evaluate a resource. The top three criteria noted were: 1) *accuracy and authority*, 2) *timeliness*, and 3) *relevancy*. Post-test scores for these three criteria remained strong in each semester, but the notable change was that students regularly identified more than one criterion for evaluating sources in the post-test data.

Table 3

Information Literacy Standard Two – Access Needed Information Effectively and Efficiently

Ratings	Pre-test Spring 2011	Post-test Spring 2011	Pre-test Fall 2011	Post-test Fall 2011	Pre-test Spring 2012	Post-test Spring 2012
Novice	32%	14%	27%	11%	14%	12%
Emerging	68%	54%	57%	27%	72%	50%
Intermediate	0	32%	16%	62%	14%	38%
Advanced	n/a	n/a	n/a	n/a	n/a	n/a
Expert	n/a	n/a	n/a	n/a	n/a	n/a

Table 4
Information Literacy Standard 3 – Evaluate Information and its Sources Critically

Ratings	Pre-test Spring 2011	Post-test Spring 2011	Pre-test Fall 2011	Post-test Fall 2011	Pre-test Spring 2012	Post-test Spring 2012
Novice	65%	39%	39%	27%	33%	34%
Emerging	32%	39%	32%	40%	35%	34%
Intermediate	0	22%	26%	27%	32%	32%
Advanced	3%	0	3%	6%	n/a	n/a
Expert	n/a	n/a	n/a	n/a	n/a	n/a

Discussion

The data collected in this phase of the evaluation study indicated a positive progression in student learning. Students demonstrated growth of information literacy skills throughout the semester. However, there are several limitations in this study that make generalization of the findings impractical. The overall sample size was small and the use of convenience sampling, rather than random sampling, may not capture a true representation of first-year students' abilities. High attrition rates in First-Year Writing courses led to lower post-test responses which can impact accurate analysis of pre-test/post-test comparison data leading to a potentially false conclusion.

The fixed-choice test methodology incorporates further potential limitations. The questions measure students' knowledge of facts, but tend to "measure recognition rather than recall" (Oakleaf, 2008, p. 236) which is an indirect assessment of students' knowledge but not necessarily a measure of students' ability to apply that knowledge appropriately. On the positive side, this methodology is easily administered and analyzed; it is locally-specific and allows for timely measurement of the objectives from each information literacy instruction session. With the data collected in this study, the librarian can adapt lesson plans and activities to respond to students' developmental readiness level more fully.

The open-ended questions gave students the opportunity to articulate their research behaviour, enabling a more direct measurement of their ability to apply information literacy skills. A rubric was an effective scoring mechanism to convert the qualitative responses to a quantitative measure that could be analyzed against the results of the other two cluster set questions. Although the rubric made scoring results possible, the process was considerably more time-consuming than anticipated. This methodology also contributed to potential limitations in the study due to the use of a single rater to score results. Although effort was employed to maintain an objective scoring plan, it was challenging to interpret students' responses consistently when scoring at "different points in time" (Oakleaf, 2009b, p. 970). Use of trained student raters has been an efficient and effective approach at other institutions and may be appropriate in future rubric scoring to increase reliability of the results (Knight, 2006).

This 18-month study was undertaken beginning in Spring 2011 and the results of this study were presented at the Library Assessment Conference in October 2012. The positive results of this study encouraged the UNH Manchester librarians to expand the reach of the Research Mentor Program beyond the First-Year Writing courses. The credit-bearing Tutor Development course was revised to include training in subject-specific databases. This study used the ACRL Information Literacy Competency Standards as criteria for evaluating students' information

seeking skills. In February 2015, the ACRL Board affirmed the *Framework for Information Literacy for Higher Education*. As librarians incorporate the six concepts of the *Framework* into the information literacy curriculum, a further study of this peer-to-peer learning approach would be a valuable addition to the Research Mentor Program evaluation.

Conclusion

This paper examined the findings from a selected section of the pre-test/post-test instrument used to measure change in student learning in our First-Year Writing course. Through this study, an historical snapshot of the effectiveness of employing a peer-to-peer learning approach with first-year students emerged. The primary assessment instrument incorporated three cluster sets of fixed-choice and open-ended questions mapped to the curriculum objectives for information literacy instruction, and the findings demonstrated a positive progression toward increased learning in the three targeted areas identified: 1) using library resources correctly, 2) building effective search strategies, and 3) evaluating sources appropriately. Students scored higher in the fixed-choice questions than the open-ended ones, demonstrating the ability to more effectively identify the applicable information literacy skill than use the language of information literacy to describe their own research behavior. The findings, although specific to the College's local situation and not generalizable, are a valuable baseline for informing teaching and learning practice.

The method used was a low-key, locally-developed instrument that provided timely data to measure students understanding of concepts taught and to apply those concepts correctly. This instrument provided an indirect assessment of students' learning by relying on their ability to recognize the correct response from a selection of possible options. This approach is

easily administered and analyzed but results demonstrated that students were better able to recognize components of the research process when given choices than articulate the steps they would undertake when conducting research. Further assessment that directly measured student performance would strengthen the conclusions attained in this study. Although the conclusions are not generalizable to other institutions, the findings were a valuable component of an ongoing program evaluation.

References

Artz, J. (2005). Libraries and learning center collaborations: Within and outside the walls. In J. K. Elmborg & S. Hook (eds.), *Centers for learning: Writing centers and libraries in collaboration* (pp.93-115). Chicago, IL: Association of College & Research Libraries.

Association of College & Research Libraries. (2000). Information Literacy Competency Standards for Higher Education. Chicago, IL: Association of College & Research Libraries.

Bodemer, B. B. (2013, Apr.). They not only can but they should: Why undergraduates should provide basic IL instruction. Paper presented at the Association of College and Research Libraries annual conference, Indianapolis, IL, USA.

Boff, C., & Toth, B. (2005). Better-connected student learning: Research and writing project clinics at Bowling Green State University. In J.K. Elmborg & S. Hook (Eds.), *Centers for learning: Writing centers and libraries in collaboration* (pp. 148-157). Chicago, IL: Association of College & Research Libraries.

Brown, C. A. (2008). Building rubrics: A step-by-step process. *Library Media Connection*, *26*(4), 16-18.

Cannon, K., & Jarson, J. (2009). Information literacy and writing tutor training at a liberal arts college. *Communications in Information Literacy, 3*(1), 45-55. Retrieved from http://www.comminfolit.org/index.php?journal=cil

Cooke, R., & Bledsoe, C. (2008). Writing centers and libraries: One-stop shopping for better term papers. *The Reference Librarian, 49* (2), 119-127. http://dx.doi.org/10.1080/0276387080210 1310

Crowe, K. (2010, Oct.). Assessment = improved teaching and learning: Using rubrics to measure information literacy skills. Paper presented at the 2010 Library Assessment Conference in Baltimore, MD, USA. Retrieved from: http://libraryassessment.org/archive/201 0.shtml#2010_Schedule

Currie, L., & Eodice, M. (2005). Roots entwined: Growing a sustainable collaboration. In J.K. Elmborg & S. Hook (Eds.), *Centers for learning: Writing centers and libraries in collaboration* (pp. 42-60). Chicago, IL.: Association of College & Research Libraries.

Daniels, E. (2010). Using a targeted rubric to deepen direct assessment of college students' abilities to evaluate the credibility of sources. *College & Undergraduate Libraries, 17*(1), 31-43. http://dx.doi.org/10.1080/1069131090358 4767

Deese-Roberts, S., & Keating, K. (2000). Integrating a library strategies peer tutoring program. *Research Strategies, 17*(2/3), 223-229. http://dx.doi.org/10.1016/S0734-3310(00)00039-2

Phelps, S. F. (2008). Learning outcomes, portfolios, and rubrics, oh my! Authentic assessment of an information literacy program. *portal: Libraries and the Academy, 8*(1), 75-89. http://dx.doi.org/10.1353/pla.2008.0000

Elmborg, J. K. (2005). Libraries and writing centers in collaboration: A basis in theory. In J.K. Elmborg & S. Hook (Eds.), *Centers for learning: Writing centers and libraries in collaboration* (pp. 1-20). Chicago, IL.: Association of College & Research Libraries.

Fagerheim, B. A., & Shrode, F. G. (2009). Information literacy rubrics within the disciplines. *Communications in Information Literacy, 3*(2), 158-170. Retrieved from http://www.comminfolit.org/index.php?journal=cil

Fensom, G., McCarthy, R., Rundquist, K., Sherman, D., & White, C. B. (2006). Navigating research waters: The research mentor program at the University of New Hampshire at Manchester. *College & Undergraduate Libraries, 13*(2), 49-74. http://dx.doi.org/10.1300/J106v13n02_05

Foutch, L. J. (2010). Joining forces to enlighten the research process: A librarian and writing studio integrate. *College & Research Libraries News, 71* (7), 370-373.Retrieved from: http://crln.acrl.org/

Furlong, K., & Crawford, A. B. (1999). Marketing your services through your students. *Computers in Libraries, 19* (8), 22-26.

Gardner, S., & Acosta, E. S. (2010, Oct.). Using a rubric to assess Freshman English library instruction. Paper presented at the 2010 Library Assessment Conference in Baltimore, MD, USA. Retrieved from: http://libraryassessment.org/archive/2010.shtml#2010_Schedule

Giglio, M. R. & Strickland, C. F. (2005). The Wesley College library and writing center: A case study in collaboration. In J. K. Elmborg & S. Hook (Eds.), *Centers for learning: Writing centers and libraries in collaboration* (pp. 138–147). Chicago, IL.: Association of College & Research Libraries.

Gruber, A. M., Knefel, M. A., & Waelchli, P. (2008). Modeling scholarly inquiry: One article at a time. *College & Undergraduate Libraries, 15* (1-2), 99- 125. http://dx.doi.org/10.1080/10691310802177085

Holliday, W. & Nordgren, C. (2005, April). Extending the reach of librarians: Library peer mentor program at Utah State University. *College & Research Libraries News, 66*(4), 282-284. Retrieved from: http://crln.acrl.org/

Knight, L. A. (2006). Using rubrics to assess information literacy. *Reference Services Review, 34*(1), 43-55. http://dx.doi.org/10.1108/00907320610640752

Leadley, S., & Rosenberg, B. R. (2005). Yours, mine, and ours: Collaboration among faculty, library, and writing center. In J. K. Elmborg & S. Hook (Eds.), *Centers for learning: Writing centers and libraries in collaboratio*n (pp. 61-77). Chicago: Association of College & Research Libraries.

Lowe, M., & Lea, B. (2004). When worlds collide: Libraries & writing centers. *Academic Exchange Quarterly, 8*(1), 134-138. Retrieved from: http://rapidintellect.com/AEQweb/

Millet, M. S., & Chamberlain, C. (2007). Word-of-mouth marketing using peer tutors. *The Serials Librarian, 53*(3), 95-105. http://dx.doi.org/10.1300/J123v53n03_07

Nelson, R. R. (1995/96). Peer tutors at the collegiate level: Maneuvering within the zone of proximal development. *Journal of College Reading and Learning, 27*(1), 43-51. http://dx.doi.org/10.1080/10790195.1996.10850030

Oakleaf, M. (2008). Dangers and opportunities: A conceptual map of information literacy assessment approaches. *portal: Libraries and the Academy, 8*(3), 233-253. http://dx.doi.org/10.1353/pla.0.0011

Oakleaf, M. (2009a). The information literacy instruction assessment cycle: A guide for increasing student learning and improving librarian instructional skills. *Journal of Documentation, 65*(4), 539-560. http://dx.doi.org/10.1108/00220410910970249

Oakleaf, M. (2009b). Using rubrics to assess information literacy: An examination of methodology and inter-rater reliability. *Journal of the American Society for Information Science & Technology, 60*(5), 969-983. http://dx.doi.org/10.1002/asi.21030

Oakleaf, M., Millet, M. S., & Kraus, L. (2011). All together now: Getting faculty, administrators, and staff engaged in information literacy assessment. *portal: Libraries and the Academy, 11*(3), 831-852. http://dx.doi.org/10.1353/pla.2011.0035

White, C. B., & Pobywajlo, M. (2005). A library, learning center, and classroom collaboration: A case study. In J.K. Elmborg & S. Hook (Eds.), *Centers for learning: Writing centers and libraries in collaboration* (pp. 175-203). Chicago, IL: Association of College & Research Libraries.

Appendix A
Questionnaire

Library Research Mentor Program Pre-survey Fall 2011

Library research

1. Rank the following strategies for effectivemess in choosing search terms. (Rank 1 for the highest and 5 for the lowest)

	1	2	3	4	5
Write out your topic in a few sentences.	○	○	○	○	○
Highlight the main terms and phrases.	○	○	○	○	○
Brainstorm synonyms, broader terms, and narrower terms.	○	○	○	○	○
List abbreviations and alternate spelling of words.	○	○	○	○	○
Check an encyclopedia for ideas and concepts.	○	○	○	○	○

2. Why would you use a library database? Choose one answer from the list below.

○ To find out if the library owns a particular magazine or journal.

○ To search the World Wide Web for educational websites.

○ To find articles in journals, magazines, or newspapers.

○ To find out if the library owns a particular book.

○ I don't know.

3. Imagine you are searching a library database for articles about forms of bullying among high school students. Choose the best search terms strategy from the examples below.

○ high school students who are bullied

○ bullying

○ bullying and "high school students"

○ forms of bullying in high school

○ I don't know

4. In critically evaluating information sources you should consider all but

○ the timeliness of the information

○ the credentials of the author

○ the length of the information source

○ the accuracy of the information

○ I don't know

Library Research Mentor Program Pre-survey Fall 2011
Library research

5. Martin has a research paper due in his English class on bullying. Martin does not know where to start and is feeling overwhelmed. Of the choices below, which is the best approach for him to begin his research process?

○ Review the assignment requirements to gather more information, search for background information on the topic of bullying, and then list possible paper topics based on the information he found.

○ Review the assignment requirements to gather more information and then start developing a thesis statement for the paper.

○ Do a Google search on "bullying" to find background information and then list possible paper topics based on the information he found.

○ Start by developing a thesis statement for the paper and then search for background information on the topic of bullying.

6. Jennifer is looking for sources for her research paper on bullying. The professor requires that students use two academic journal articles, two books, and one web source in their paper. Jennifer has found two books and a web source for her paper but is not sure where to find journal articles. Which choice below is the best place to find journal articles on bullying?

○ Go to the library webpage and use the library's online catalog to find academic journal articles on bullying.

○ Go to the library webpage and use the library's online databases such as Academic Search Premier to find academic journal articles on bullying.

○ Go to Google.com and do a search for academic journals that have articles on bullying.

○ Go to the library's Reading Room magazine collection and read through the news magazines such as Time Magazine to find academic journal articles on bullying.

7. Mike is doing research for his paper on bullying and is looking for journal articles on the effects of bullying on victim's mental health. He has searched one of the library's online databases using the keyword "bullying" and has gotten thousands of results, many of which are not relevant to his topic. Which choice below would be the best search strategy to narrow Mike's search and provide more relevant results?

○ bullying and schools

○ psychological effects of bullying on victims

○ mental health and bullying and victim

○ students and suicide

Library Research Mentor Program Pre-survey Fall 2011

8. Kendra needs an academic journal article for her research paper on bullying and schools. She is looking for an article that will help her explain the psychological effects experienced by bullying victims. Which of the sources below is the most appropriate?

( ) The Bully as Victim? By Gillian Patterson, Pediatric Nursing, December 2005, Vol. 17 Issue 10, p27-30. Abstract: This article summarizes the causes and implications of aggression and bullying behavior, including future outcomes for children who bully.

( ) Bullying, Depression, and Suicidality in Adolescents. By Anat B. Klomek, Frank Marrocco, Marjorie Kleinman et al, Journal of the American Academy of Child & Adolescent Psychiatry, Jan2007, Vol. 46 Issue 1, p40-49. Abstract: The study shows that victims of bullying have an increased risk of developing depression and suicidal thoughts.

( ) Gifted Kids Vulnerable to Effects of Bullying. By Jean Sunde Peterson, USA Today Magazine, September 2007. Abstract: The article reports that bullying in the U.S. gifted-student population is an overlooked problem that leaves many of these youngsters emotionally shattered, making them more prone to extreme anxiety, dangerous depression, and sometimes violence.

( ) Bullying and Smoking: Examining the Relationships in Ontario Adolescents. By Erin B. Morris, Bo Zhang, and Susan J. Bondy, Journal of School Health, Nov2006, Vol. 76 Issue 9, p465-470. Abstract: The study showed that current smokers were more likely to be bullies than nonsmokers.

Library research

You have been assigned to write a research paper on bullying for your ENGL 401 class. Your instructor has required you to use academic journals and books as sources for this paper. Please answer the questions below with this scenario in mind.

9. What are the steps you take to start your research process for this paper? (Number each step or separate steps using a comma or place each step on a separate line)

10. Where would you find academic journal articles for this paper?

11. Where would you find books for this paper?

12. In your research paper on bullying you have decided to focus on the psychological effects experienced by victims of bullying in school. List the search terms you will use to find relevant results in an academic database?

Library Research Mentor Program Pre-survey Fall 2011

13. You found academic journals, books and web sources on bullying. What questions will you ask yourself to determine if you could use these sources for your research paper?

Appendix B
Information Literacy Rubric

Research Mentor Program Information Literacy Rubric

ACRL Information Literacy Standards	Novice (0)	Emerging (1)	Intermediate (2)	Advanced (3)	Expert (4)	Rating
IL Standard 1 - student determines the nature and extent of the information needed: a) reviews syllabus or confers with instructor to identify information need b) develops a thesis statement and formulates questions based on information need c) explores general information sources to increase familiarity with the topic d) defines and modifies the information need to achieve a manageable focus e) identifies key concepts and terms that describe the information need f) identifies the purpose, differences, and value of potential resources	Describing research process, student articulates none or one criterion (a-f)	Describing research process, student articulates two criteria (a-f)	Describing research process, student articulates three criteria (a-f)	Describing research process, student articulates four or five criteria (a-f)	Describing research process, student articulates all criteria (a-f)	
IL Standard 2 - student accesses needed information effectively and efficiently: a) identifies keywords, synonyms, and related terms for information need b) selects controlled vocabulary specific to the discipline or information retrieval system c) constructs a search strategy using appropriate commands (i.e. Boolean operators, truncation, etc.) for the information retrieval system selected d) identifies gaps in the information retrieved and determines if the search strategy should be revised	Constructing search strategy, student articulates no criteria (a-d)	Constructing search strategy, student articulates one criterion (a-d)	Constructing search strategy, student articulates two criteria (a-d)	Constructing search strategy, student articulates three criteria (a-d)	Constructing search strategy, student articulates all criteria (a-d)	
IL Standard 3 - student evaluates information and its sources critically: examines and compares information from various sources in order to evaluate a) reliability and validity b) accuracy and authority c) timeliness d) point of view or bias e) relevancy	Evaluating sources, student articulates none or one criterion (a-e)	Evaluating sources, student articulates two criterion (a-e)	Evaluating sources, student articulates three criteria (a-e)	Evaluating sources, student articulates four criteria (a-e)	Evaluating sources, student articulates all criteria (a-e)	
Total Rating						

Developed by A. Donahue, UNH Manchester, Summer 2012