

# **Student Learning in Library Research Instruction for Seminar and Critical Writing, Reading and Research I & II**

## **Assessment Report for Academic Year 2012-2013**

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### **Summary**

During the 2012-2013 academic year, Staley Library continued to use a pre-test, post-test format to assess the information literacy confidence and skills of first year Millikin University students. Between the pre-test and the post-test, students receive four library instruction sessions designed to address Staley Library's four CWRR learning goals (see page 2).

All students enrolled in the Seminar/CWRR sequence (essentially all first year students at Millikin University) were part of the assessment. While participation varied by question, approximately 240 students took the pre-test and approximately 90 students took the post-test. In all cases, the tests were administered through Moodle and students took them on their own outside of class time.

Key findings from the assessment include:

- Students showed an overall increase in their confidence with the research process and with particular information literacy skills.
- Students showed strong improvement in skills that are directly addressed in instruction sessions such as identifying the characteristics of a scholarly article and identifying the purpose of the library databases.
- Students expressed less confidence in the post-test with some aspects of the research process such as getting started or reading through material, which may reflect a realization by the end of the freshman year of the rigor of college work.
- Students come to Millikin with at least some understanding of website evaluation and confidence in their ability to find resources on the open web.
- Based on comments, it appears that students appreciate library instruction, especially learning about the library databases.
- Students continue to struggle with higher-level source evaluation, e.g., determining sources of unbiased information.
- While the pre-, post-test format provides important longitudinal data across the first year of college, the decline in participation from the pre- to the post-test continues to challenge the reliability of the data.

### **Instruction Program Mission & Goals**

The mission of Staley Library's instruction program is to empower students to become information literate individuals who are confident in their information seeking abilities, able to apply critical thinking skills in the retrieval and evaluation of information, and capable of growing into life-long learners. The program supports the academic curriculum of Millikin University and strives to develop students who are not only successful academically, but also are prepared to find and critically use information throughout their lives.

The research instruction program corresponds directly with CWRR learning outcome goal #3: “Conduct research to participate in academic inquiry.” The purpose of research instruction for CWRR is stated in Staley Library’s four CWRR learning goals:

1. The student will identify the use and purpose of the Library’s resources available via its web pages, including the differentiation between Library-provided resources and Internet resources.
2. The student will recognize what constitutes plagiarism through a discussion on how to avoid it, and how to cite sources.
3. The student will demonstrate an understanding of basic concepts of information retrieval and database function by successfully outlining a search strategy that demonstrates the ability to retrieve appropriate and relevant periodical articles, books, and Internet resources.
4. The student will demonstrate the application of evaluative criteria in the selection of information, regardless of source or format, through exercises that demonstrate their ability to differentiate resources.

These goals correspond with the University-wide learning goals:

1. Millikin students will prepare for professional success.
2. Millikin students will actively engage in the responsibilities of citizenship in their communities.
3. Millikin students will discover and develop a personal life of meaning and value.

Table 1 (below) shows how Staley Library’s learning goals relate to University-wide learning goals:

**Table 1. Staley Library’s CWRR learning goals mapped to the University’s learning goals**

Learning Goal	Corresponding MU Learning Goal Number(s)
The student will identify the use and purpose of the Library’s resources available via its web pages, including the differentiation between Library-provided resources and Internet resources.	1, 3
The student will recognize what constitutes plagiarism through a discussion on a how to avoid it, and how to cite sources.	1, 2
The student will demonstrate an understanding of basic concepts of information retrieval and database function by successfully outlining a search strategy that demonstrates the ability to retrieve appropriate and relevant periodical articles, books, and Internet resources.	1, 3
The student will demonstrate the application of evaluative criteria in the selection of information, regardless of source or format, through exercises that demonstrate their ability to differentiate resources.	1, 3

## Overview of Instruction

The research and instruction librarians devote a majority of their in-class instructional activities to the first-year core courses – CWRR and University Seminar. The librarians use a 2:2 instruction model, with two sessions in the fall and two sessions in the spring. The fall sessions are taught in either Seminar or CWRR as the course professors see fit (2 sessions per cohort); the two spring sessions are both taught in CWRR as there is no spring Seminar equivalent. The fall sessions use active learning to cover research basics and evaluating Internet sources, while the spring sessions cover more advanced topics such as evaluating types of articles, advanced keyword/topic development, and appropriate source choice for an

assignment. In all cases, the librarians work with the Seminar and CWRR course professors to time the library session(s) appropriately within the course content; this means the students are able to learn, practice, and apply skills in a way that makes them relevant to their research needs.

During the 2012-2013 academic year, the librarians conducted 72 sessions (47 sections) for in-sequence CWRR classes, 24 sessions (21 sections) for in-sequence Seminar classes, 7 sessions (4 sections) for the off-sequence CWRR classes, and 2 sessions (2 sections) for the PACE CWRR classes.

Matthew Olsen coordinates the research instruction program, and shares in the instruction with library faculty Rachel Bicicchi, Cindy Fuller (Library Director), Denise Green, and Amanda Pippitt. The Instructional Services Coordinator, as with the other library faculty, reports to the Director.

## **Assessment Methods**

### **Pre- and Post-Test Assessment Methods**

The 2012-2013 academic year was the seventh complete year of data collected via a pre- and post-test. During that time, the assessment has used different questions and methods (documented in prior instruction reports). For the 2012-2013 academic year, the pre-test was administered via Moodle before the students met with a librarian in the fall; the post-test in the spring was administered as a Moodle assignment after the library instruction was complete. In both cases, the tests were taken outside of class time.

The twenty questions that comprise the first part of the test are based on the Project Information Literacy report, "Truth Be Told: How College Students Evaluate and Use Information in the Digital Age."<sup>1</sup> Students are asked to rank on a scale from 1 to 5 (with 1 being "almost always difficult" and 5 being "never difficult") how they feel about different stages of the research process. This first part of the assessment is designed to measure the students' confidence level with the academic research process (affective learning). The complete list of questions is provided in Appendix A.

The second portion of the assessment is comprised of eight questions that assess the students' proficiency with information literacy skills. Five of the questions are selected-response questions (multiple choice), two of the questions are constructed-response (short answer), and one question asks students what they would like to learn from their library sessions in the pre-test and in the post-test asks what they learned and what they wish they had learned. The complete list of questions can be found in Appendix A.

### **Other Forms of Evaluation:**

In addition to the formalized library instruction sessions for the first-year core curriculum courses, new students have traditionally participated in a library self-guided tour during the first month of the fall semester. The self-guided tour familiarizes students with the library so that they can feel comfortable using the library while studying, researching, and relaxing, know who they can ask for assistance, and have hands-on practice locating library materials. In Fall 2012, the self-guided tour continued the miniature golf format that was begun the year before. While the tour does not generate formal assessment data, the worksheets that the students complete during the tour are collected and provide a means for the librarians to discover and answer questions raised by the students and generally to connect with the students early on in their college careers.

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<sup>1</sup> Head, A.J., & Eisenberg, M. B. (2010). *Truth Be Told: How College Students Evaluate and Use Information in the Digital Age* (Project Information Literacy Progress Report). Retrieved from the Project Information Literacy website: [http://projectinfolit.org/pdfs/PIL\\_Fall2010\\_Survey\\_FullReport1.pdf](http://projectinfolit.org/pdfs/PIL_Fall2010_Survey_FullReport1.pdf)

Academic year 2012-2013 also continued the Faculty Assessment of Library Instruction survey. This nine question electronic survey is sent to every faculty member within whose class library instruction was conducted including those outside of the Seminar/CWRR sequence. The faculty can then give anonymous or signed feedback, which we use to improve library instruction. To view the survey questions please contact the Instruction Coordinator.

## **Pre- and Post-Test Assessment Data**

### **Overview:**

#### **Fall Pre-Test<sup>2</sup>**

Part 1: Average score = 3.13 (5 point scale)

Part 2: Multiple choice: Average percentage of students answering question correct = 69%

Short answer: Average score = 1.99 (3 point scale)

#### **Spring Post-Test<sup>3</sup>**

Part 1: Average score = 3.33 (5 point scale)

Part 2: Multiple Choice: avg. percentage of students answering question correct = 75%

Short answer: Average score = 2.46 (3 point scale)

Looking across all of the different assessment types, students showed an improvement in every area between the pre- and post-test. Part 1 shows a .2 point or 6% increase in overall student confidence in the research process. Students showed a 9% increase in the multiple choice portion of Part 2, and a .47 point or 24% increase on the short answer questions. Mapped to the CWRR Artifact Performance Indicator Scale (where Nominal (Red-Stop) = 0-52%, Adequate (Yellow-Caution) = 53-74%, and Excellent (Green-Go) = 75-100%), by the post-test both portions of Part 2 were in the Excellent (Green) range of the scale (multiple choice = 75%, short answer = 82%). While a question by question analysis is offered below, on the whole it appears that students' information literacy confidence and abilities are increasing during their first year at Millikin University.

### **Analysis of Assessment Results by Library Instruction Goal:**

Many of the questions in Parts 1 and 2 can be mapped to particular Staley Library CWRR learning goals. Doing so (Table 2 below) shows the particular areas in which student learning and confidence have increased.

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<sup>2</sup> For the pre-test the number of student answers was not the same from question to question. For Part 1, the average number of responses was 240 (mode = 240). For Part 2, the average was 236 (mode = 238). Total freshman class size = 532.

<sup>3</sup> The post-test also exhibited different numbers of responses from question to question. For Part 1 the average number of responses was 79 (mode = 79). For Part 2, the average was 96 (mode = 97). Total freshman class size = 532. The difference in the number of responses between the pre- and post-test and their relation to the size of the 2016 class is discussed in the *Improvement Plan* section below.

**Table 2. Pre- and post-test results by Library CWRR learning goal**

<b>Staley Library CWRR Learning Goals (LG)</b>			
<p><b>1. Library Resources</b></p> <p><b>Part 1</b>  <b>Questions 5, 6, &amp; 8</b>                      Pre-Test Avg. = 3.2                      Post-Test Avg. = 3.5                      Improvement = 9%</p> <p><b>Part2</b>  <b>Question 5</b>                      Pre-Test Avg. = 74%                      Post-Test Avg. = 91%                      Improvement = 23%</p> <p><b>Total for LG 1</b>                      Improvement = 16%</p>	<p><b>2. Plagiarism/Citing Sources</b></p> <p><b>Part 1</b>  <b>Questions 16, 17, &amp; 18</b>                      Pre-Test Avg. = 3.0                      Post-Test Avg. = 3.5                      Improvement = 17%</p> <p><b>Part 2</b>  <b>Question 8</b>                      Pre-Test Avg. = 80%                      Post-Test Avg. = 84%                      Improvement = 5%</p> <p><b>Total for LG 2</b>                      Improvement = 11%</p>	<p><b>3. Retrieval of Information</b></p> <p><b>Part 1</b>  <b>Questions 2, 3, &amp; 4</b>                      Pre-Test Avg. = 3.1                      Post-Test Avg. = 3.2                      Improvement = 3%</p> <p><b>Part2</b>  <b>Question 2</b>                      Pre-Test Avg. = 65%                      Post-Test Avg. = 75%                      Improvement = 15%</p> <p><b>Total for LG 3</b>                      Improvement = 9%</p>	<p><b>4. Evaluation of Information</b></p> <p><b>Part 1</b>  <b>Questions 7, 9, 10, &amp; 11</b>                      Pre-Test Avg. = 3.1                      Post-Test Avg. = 3.4                      Improvement = 10%</p> <p><b>Part 2</b>  <b>Questions 3, 4, 6, &amp; 7</b>                      Pre-Test Avg.= 65%                      Post-Test Avg.= 72%                      Improvement = 11%</p> <p><b>Total for LG 4</b>                      Improvement = 10%</p>

**Analysis of Assessment Results for Part 1:**

Part 1 of the assessment is designed to measure students’ confidence level with the entire academic research process. Students are asked to rank on a scale from 1 to 5 (with 1 being “almost always difficult” and 5 being “never difficult”) how they feel about different stages of the research process beginning with getting started on an assignment through knowing when you are done.

Table 3 (below) and Graph 1 (Appendix B) provide a question by question listing of student scores on both the pre-test and post-test. Student scores (self-assessed confidence) increased on 15 of the 20 questions and on the whole increased by .2 points (6%). The greatest increase was on finding articles in the library databases (Question #5), determining website credibility (Q #7), sorting through results (Q #10), and the questions having to do with citing (Qs #16, 17, & 18). Using the library databases and website credibility are both covered extensively in library instruction sessions and these results reflect positively on that instruction. Citing is covered both in library instruction and by Seminar/CWRR faculty.

Students’ confidence did decline in several areas including getting started on assignments (Q #1) and reading through material and taking notes (Qs #12 & 13). They also showed a slight decline in their confidence using the open web to find sources (Q #6), although their confidence was very high to begin with (3.8 on average). Perhaps one way to explain these declines is the students’ greater understanding by their second semester of the higher expectations of college level work. This interpretation is reinforced by their increased confidence on the final question, which asks if they know whether they have done a good job on the assignment (Q #20). This may indicate a greater overall understanding of college level assignments.

Table 4 (below) lists the percentage of students who provided each of the five ratings (1-5) across all of the questions on Part 1 for both the pre-test and the post-test. This comparison shows that fewer students responded with 1s and 2s (low confidence) across all the questions from the pre-test to the post-test, while the number of students who found tasks “rarely difficult” or “never difficult” increased. This further reinforces the interpretation that students are more confident throughout the research process by the end of their second semester at Millikin University.

**Table 3. Comparison of student ratings pre- and post-test by question for Part 1**

<b>Question Scale 1 -5 1 = almost always difficult 5 = never difficult</b>	<b>Pre-Test Average Points (n = 240)</b>	<b>Post-Test Average Points (n = 79)</b>	<b>Points Change</b>	<b>Percent Change</b>
1. Getting started on the assignment	2.76	2.57	-0.19	-7.0%
2. Defining a topic for the assignment	3.08	3.01	-0.07	-2.2%
3. Narrowing down a topic	3.05	3.14	0.09	2.9%
4. Coming up with search terms	3.27	3.41	0.13	4.0%
5. Finding articles in the research databases on the Library's website (examples include EBSCO, JSTOR, ProQuest, etc.)	2.92	3.48	0.56	19.0%
6. Finding sources to use "out on the web" (example - Google, Wikipedia, websites)	3.80	3.77	-0.03	-0.9%
7. Determining whether a website is credible or not	3.11	3.46	0.35	11.2%
8. Figuring out where to find sources in different parts of the library	2.93	3.14	0.21	7.0%
9. Finding up-to-date materials	3.05	3.37	0.31	10.2%
10. Having to sort through all the irrelevant results I get to find what I need	2.93	3.37	0.44	15.0%
11. Evaluating the sources that I've found	3.28	3.50	0.22	6.8%
12. Reading through the material	3.58	3.39	-0.19	-5.2%
13. Taking notes	3.74	3.48	-0.26	-6.9%
14. Integrating different sources from my research into my assignment	3.33	3.45	0.12	3.6%
15. The writing part	2.98	3.13	0.15	5.0%
16. Knowing when I should cite a source	3.19	3.52	0.33	10.3%
17. Knowing how to cite a source in the right format	2.77	3.46	0.69	25.1%
18. Knowing whether or not my use of a source, in certain circumstances, constitutes plagiarism	3.07	3.65	0.57	18.7%
19. Deciding whether or not "I'm done".	2.99	3.22	0.22	7.5%
20. Knowing whether or not I've done a good job on the assignment	2.66	3.15	0.49	18.4%
<b>Average</b>	<b>3.13</b>	<b>3.33</b>	<b>0.20</b>	<b>6.4%</b>

**Table 4. Average number of students reporting at each level of difficulty for all questions in Part 1**

<b>Rating</b>	<b>Pre-Test</b>	<b>Post-Test</b>	<b>Percent Change</b>
1 - Almost always difficult	5.5%	4.4%	-20.0%
2 - Often difficult	20.1%	15.2%	-24.5%
3 - Sometimes difficult	38.2%	36.5%	-4.4%
4 - Rarely difficult	28.5%	30.4%	6.7%
5 - Never difficult	7.7%	13.5%	75.7%

**Analysis of Assessment Results for Part 2:**

***Multiple Choice Questions***

Table 5 (below) and Graph 3 (Appendix B) show the pre- and post-test results for the five multiple choice questions in Part 2. The numbers represent the percentage of students who answered each question correctly. With one exception, the percentage of correct answers increased for each question, and the overall average for these questions increased by 9%. A question by question analysis is provided below.

**Table 5. Pre- and post-test comparison of percentage of students answering question correctly**

<b>Multiple Choice Question</b>	<b>Pre-Test (avg. n=236)</b>	<b>Post-Test (avg. n=96)</b>	<b>Percent Change</b>
2. Keywords	65%	75%	15%
4. Website	87%	89%	2%
5. Database	74%	91%	23%
7. Bias	40%	37%	-8%
8. Citation	80%	84%	5%
<b>Average</b>	<b>69%</b>	<b>75%</b>	<b>9%</b>

**Question 2** asks students to determine the best keywords to use to enter a query into Google. Students showed a significant increase in their scores between the pre- and post-tests. Keyword formulation and entry is a topic that is covered in library instruction both in the fall and the spring, thus this increase is a positive reflection on that instruction.

**Question 4** asks students to determine the type of sponsoring institution for a website based on a web address. To successfully answer the question students not only have to know the different types of institutions (organizations, educational, etc.), but also be able to parse a web address. While students showed only a modest (2%) improvement in their scores between the pre- and post-test, this was also the question on which they scored highest initially (87% correct). Whether in high school, or before, it seems as though students are entering college with at least a basic understanding of website evaluation. They seem especially keen to use the web address as an indicator of quality as this was often mentioned as a possible criterion in answers to short answer question three, which asks how website credibility is determined. Of course, the web address is only one part of a website's overall credibility and this is something that the librarians need to continue to reinforce with students.

**Question 5** on the types of resources available in library databases showed the greatest improvement between the two tests, with over 90% of students responding correctly by the post-test. Knowing what library databases are and what can be found in them is an essential skill for scholarly researchers. Students' success in acquiring this skill (which they seem to appreciate given that they mentioned learning about the databases as one of most important things that they learned in question one of the post-test) is an indicator of the importance of library instruction.

**Question 7**, which asks students to identify a source of unbiased information on a topic, is the only question where student performance decreased and a question where the pre-test scores were quite low (40%). Historically this is a question that students have had difficulty with and identifying an unbiased source is clearly a challenging (but necessary) skill for students. This is a skill that the librarians will continue to promote in class using salient examples.

**Question 8**, which asks about the proper time in the research process to record a citation, showed only a modest increase (5%) pre- to post-test, but student scores were high to begin with and by the post-test almost 85% identified correctly that citation information should be recorded the first time that you access a source. Almost all of the incorrect answers, (15% on the post-test) answered "After you have finished writing the section of the paper that uses information from the source," which implies that students recognize the need to tie a source to their writing, but don't recognize how early in the process they should do this. The librarians will continue to stress the need to record citation information as early in the research process as possible.

### ***Short Answer Questions***

Part 2 consists of three short answer questions. The first question addresses students' aspirations and then satisfaction with the library sessions while questions three and six are about website credibility and the characteristics of scholarly articles respectively. To facilitate reporting of the questions, question one of the post-test, and questions three and six of the pre- and post-tests were coded; responses to question one of the pre-test were shared among the library faculty, but are not included in this report. Question one was coded to identify common topics that appeared while for questions three and six student answers were individually assessed and scored using a rubric with ratings of 0 to 3. The simple rubric is as follows: 0 = stated explanation "I don't know" or similar reply, 1 = answer completely wrong, 2 = answer partially correct, 3 = answer completely correct.

#### **Question 1**

Question one on the post-test is made up of two questions: "What was the most useful thing that you learned from the library sessions this year?" and "What do you wish that you would have learned?" In both cases answers to these questions provide important insights into students' satisfaction with library instruction and also areas where instruction may be strengthened. The students' comments are coded into nine categories. Table 6 (below) provides the number of student answers in each category along with a representative answer.

**Table 6. Question 1**

<b>Post-Test Question 1.1 - "What was the most useful thing that you learned from the library session this year?"</b>	<b>Number of student responses (n=96)</b>	<b>Post-Test Question 1.2 - "What do you wish that you would have learned?"</b>	<b>Number of student responses (n=96)</b>
<b>Nothing</b> - "I did not learn anything this semester from the librarian because I had already know everything from high school"	3	<b>Nothing</b> - "I am not sure of anything that I did not learn that I wish I had as of today."	29
<b>Citation</b> - "The most useful thing I learned was how to correctly cite the different sources"	1	<b>Citation</b> - "I wish I would have learned how to properly cite sources in-text."	16
<b>Library</b> - "The most useful thing that i have learned from the library sessions was how to find books in the library for research papers."	2	<b>Library</b> - " how to find sources in the actual library once you have the location number"	17
<b>Resources</b> - Most mentioned databases, e.g., "I learned that there is a large variety of resources available for us through the library's databases"	65	<b>Resources</b> - "I wished I would have learned how to use each database site instead of just a quick overview."	7
<b>Topics</b> - "The most useful thing that I learned was how to narrow down my topic"	3	<b>Topics</b> - "I wish I would have learned more about how to narrow my research topic."	3
<b>Evaluation</b> - "The most useful thing was learning the difference between credible sources and non-credible sources."	8	<b>Evaluation</b> - "I wish we would have learned credibility of a website."	2
<b>Web</b> - "I learned how to narrow my searches on search engines such as google or bing."	4	<b>Web</b> - "I wish I would have learned how to filter google results better."	4
<b>Other</b> - Most responses mentioned the entire research process, e.g., "How to research a topic."	9	<b>Other</b> - "I wish that I would have learned more about trade magazines and where to obtain literature catered to specific genres."	6
<b>No answer</b>	1	<b>No answer</b>	12

When looking at the results for question 1.1, students clearly appreciated learning about the databases, as almost every "resources" response addressed the library databases in some way. Students also appreciated learning about how to evaluate sources. In the "other" category almost all of the responses claimed that they learned about the entire research process, which made it impossible to single out one element.

For question 1.2, a majority of students claimed that there was nothing more they could learn. While clearly not true, this does seem to express a sense of satisfaction with the library instruction that they received. The next most popular answer, "library," indicated a desire to learn more about the physical library such as the location of items on the shelf. Since all library instruction takes place in classrooms either in the library basement or elsewhere on campus students are not directly exposed to the "library as place," and providing

tours to each class is not practical. As discussed in the *Improvements Plan* section, changes to the walking tour may help with this issue. Finally, sixteen students identified citation as a topic they would like to learn more about.

### Question 3

Question three asks how one decides if a website is credible enough to use in a research project. Website credibility is a topic that is addressed directly in one of the fall library sessions and students are given clear criteria for evaluating websites. Students showed a 5% increase in their average score from pre- to post-test, but even more telling is the decrease in 0s, 1s, and 2s, and the subsequent increase in 3s (see Table 7). In other words, fewer students are saying they have no idea how to evaluate a website, and more students are correctly providing criteria for evaluating a website. While coding the answers it was noted that a majority of students rely on the website’s address as an important indicator of reliability (mentioned above). Students also mentioned the need for references and/or citation for a quality website. Interestingly this is the same model of reliable information that is used by Wikipedia. Finally, students were very quick to assert that simply having a known author makes a website reliable.

**Table 7. Pre-test to post-test comparison of students answers on question 3**

<b>Question 3 – “How do you decide if a website has the credibility it needs for you to use in your research project?”</b>	<b>Pre-Test (n = 235)</b>	<b>Post-Test (n = 97)</b>	<b>Percent Change</b>	<b>Point Change</b>
<b>Score</b>	<b>Number</b>	<b>Number</b>		
0	8	1		
1	27	11		
2	97	35		
3	103	50		
<b>Average</b>	<b>2.26</b>	<b>2.38</b>	<b>5.3%</b>	<b>0.12</b>
	<b>Percent</b>	<b>Percent</b>		
Percentage of 0s	3.4%	1.0%	-69.7%	
Percentage of 1s	11.5%	11.3%	-1.3%	
Percentage of 2s	41.3%	36.1%	-12.6%	
Percentage of 3s	43.8%	51.5%	17.6%	

### Question 6

Question six asks students to name three characteristics of a scholarly journal article. Part of an instruction session is devoted specifically to this topic and students are given clear criteria for distinguishing scholarly journals from other periodical types. Student scores show an increase from the pre- to the post-test of almost 50% and the number of 0s and 1s decreased dramatically while the percentage of 3s increased by almost 200%. Overall, these results indicate that by the time of the post-test students better understand the characteristics of scholarly journals, which are a major source of scholarly information across the disciplines.

**Table 8: Pre-test to post-test comparison of students answers on question 6**

<b>Question 6 – “Name three characteristics of a scholarly journal article.”</b>	<b>Pre-Test (n = 227)</b>	<b>Post-Test (n = 93)</b>	<b>Percent Change</b>	<b>Point Change</b>
<b>Score</b>	<b>Number</b>	<b>Number</b>		
0	21	2		
1	61	2		
2	103	32		
3	42	57		
<b>Average</b>	<b>1.73</b>	<b>2.55</b>	<b>47.4%</b>	<b>0.82</b>
	<b>Percent</b>	<b>Percent</b>		
Percentage of 0s	9.3%	2.2%	-76.8%	
Percentage of 1s	26.9%	2.2%	-92.0%	
Percentage of 2s	45.4%	34.4%	-24.2%	
Percentage of 3s	18.5%	61.3%	231.3%	

## Improvement Plan

As noted above, a major limitation of the pre-test and post-test format is the continued lack of participation in the post-test. While the pre-test was taken by approximately 240 students (out of a freshman class of approximately 530) the post-test was taken by approximately 90 students. While it is possible to make comparisons across the two tests, overall confidence in the results would be increased if more students would participate in the post-test. Both the pre- and post-tests are administered through Moodle, which should be familiar to the students and easy to access. The librarians will continue to explore options for increasing participation for both test and especially the post-test.

Capturing data for the off-sequence and PACE CWRR sections also continues to be a challenge. The timing of these courses as well as the fact that students do not necessarily take them in sequence or may be repeating a course means they do not match the schedule for which the pre- and post-test assessments were designed. Nonetheless one section of PACE CWRR2 did take the post-test in Spring 2013 and those data are presented in Appendix C. Briefly, they show the students with a high degree of confidence in their research abilities in Part 1 and the students performed well on the assessments in Part 2. Interestingly they did not identify learning about the library as one of the things that they “wish they had learned” perhaps because this class was given a tour of the library as part of their instruction. We will continue to explore ways to capture assessment data from off-sequence and PACE CWRR classes.

For academic year 2013-2014 the format for the self-guided tour will be changed. It will use a mystery narrative format that will incorporate QR codes to guide students around the library. This format will present students with more opportunities to explore and to find materials in the library and may address some students’ desire to learn more about the physical library as expressed in the post-test.

For the 2013-2014 Instruction Report, the Instruction Coordinator would like to have one or two other librarians assist in evaluating the data from the short answer questions. Having multiple librarians code the answers would help to remove any unforeseen bias on the part of the Coordinator and could provide additional insights into the students’ thinking as well as possible ways to improve the instrument.

As was indicated in last year’s report, several of the questions in Part 2 of the assessment may need modification. Questions three and four are both about website credibility and may be redundant. As in past years, question seven on finding unbiased sources of information was very challenging to students. While

this is certainly a difficult concept, it is worthwhile to examine the question itself to make sure it is worded in the best way possible. Question eight on citing sources could use a similar review.

Finally, reviewing the questions in Part 2 will be done in concert with an update of the library's learning goals, which are currently under review by the library faculty. The librarians are updating the goals to reflect the changing information landscape in which students are looking for and finding scholarly information. The update will also place plagiarism in the context of the ethical use of information, which includes proper citation.

## **Conclusion**

On the whole, the assessment of library instruction in Seminar/CWRR indicates that students are learning important information literacy skills over the course of their first year at Millikin University. Library faculty enjoy a close working relationship with many of the other faculty across campus and strive to provide instruction in a way and at the point that is most beneficial to students. The opportunity to meet with cohorts on multiple occasions allows the librarians to introduce and reinforce more concepts to the students. We will continue to stress the idea of research as a process and to develop higher order information literacy skills while reinforcing the more fundamental skills. The library faculty look forward to working with their CWRR and Seminar colleagues during the 2013-2014 academic year.

## Appendix A

### Pre- and Post-Test Questions

#### Part 1

Overall, when you think about the ENTIRE research process—from the moment you get the assignment until you turn in your research paper—what is DIFFICULT for you? [Scale of 1 to 5: 1 IS difficult and 5 is NOT difficult.]

1. Getting started on the assignment.
2. Defining a topic for the assignment.
3. Narrowing down a topic.
4. Coming up with search terms.
5. Finding articles in the research databases on the Library's website. (examples include EBSCO, JSTOR, ProQuest, etc.)
6. Finding sources to use "out on the web" (example- Google, Wikipedia, websites).
7. Determining whether a website is credible or not.
8. Figuring out where to find sources in different parts of the library.
9. Finding up-to-date materials.
10. Having to sort through all the irrelevant results I get to find what I need.
11. Evaluating the sources that I've found.
12. Reading through the material.
13. Taking notes.
14. Integrating different sources from my research into my assignment.
15. The writing part.
16. Knowing when I should cite a source.
17. Knowing how to cite a source in the right format.
18. Knowing whether or not my use of a source, in certain circumstances, constitutes plagiarism.
19. Deciding whether or not "I'm done".
20. Knowing whether or not I've done a good job on the assignment.

#### Part 2

(Correct answers are indicated in italics)

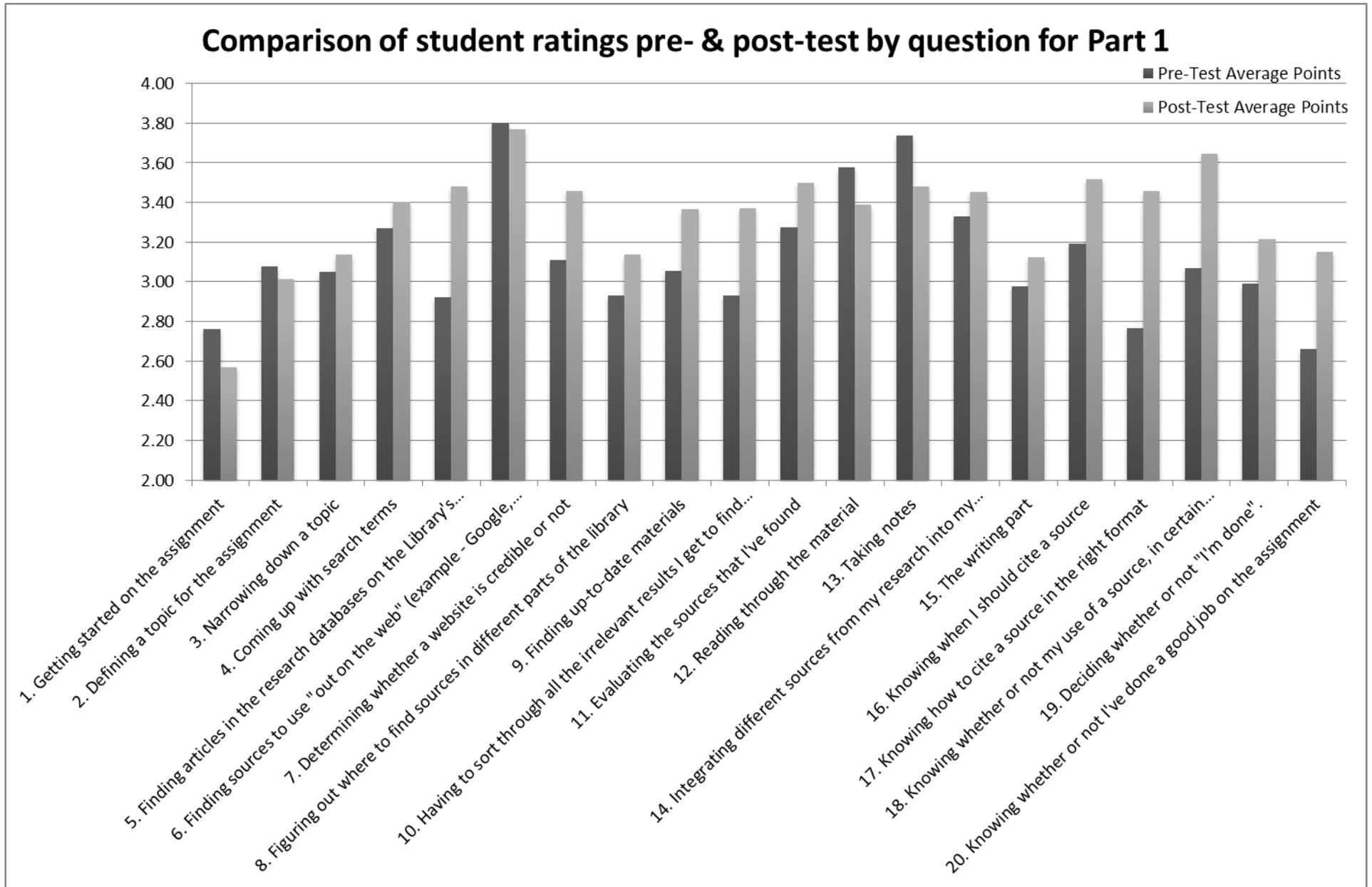
1. (Pre-Test) This semester and in the spring, a librarian will be visiting your CWRR and Seminar classes to begin talking about Information Literacy.  
What do you hope to learn from the library sessions this year?
1. (Post-Test) This past year, a librarian has visited your CWRR and Seminar classes to begin talking about Information Literacy.
  1. What was the most useful thing that you learned from the library sessions this year?
  2. What do you wish that you would have learned?
2. You are asked to write a three-page research paper on the following question: "Should colleges be allowed to restrict student speech?"  
You have decided to do a Google search using two keywords.  
Which two keywords will get the best results?  
*College and censorship*  
College and student  
College and speech  
College and restriction

3. How do you decide if a website has the credibility it needs for you to use in your research project?
4. The website [www.feedthechildren.org](http://www.feedthechildren.org) likely belongs to a (choose one):  
Business or company  
*Non-profit agency*  
Education institution  
U.S. government agency
5. If you are searching in the database "Academic Search Premier" as seen in the image below, what type of research resource could you expect to find in your results?  
*Journal Articles*  
Books
6. Name three characteristics of a scholarly journal article.  
These characteristics make scholarly articles different than a magazine article or newspaper article.
7. You are writing a report on automobile tires and safety. You have found several sources.  
Which would be the most trustworthy because of the likelihood of having unbiased, factual information?  
Report from an automobile manufacturer association.  
Survey from a tire company.  
*Article in a consumer reporting magazine.*  
Article in a sports magazine.
8. When is the best time in the research process to record the citation information for a source?  
*The first time you access a source you might want to use.*  
After you have finished writing the section of the paper that uses information from a source.  
When the teacher asks you for proof that you did not plagiarize the information in the paper.  
When you are getting ready to print your final draft.

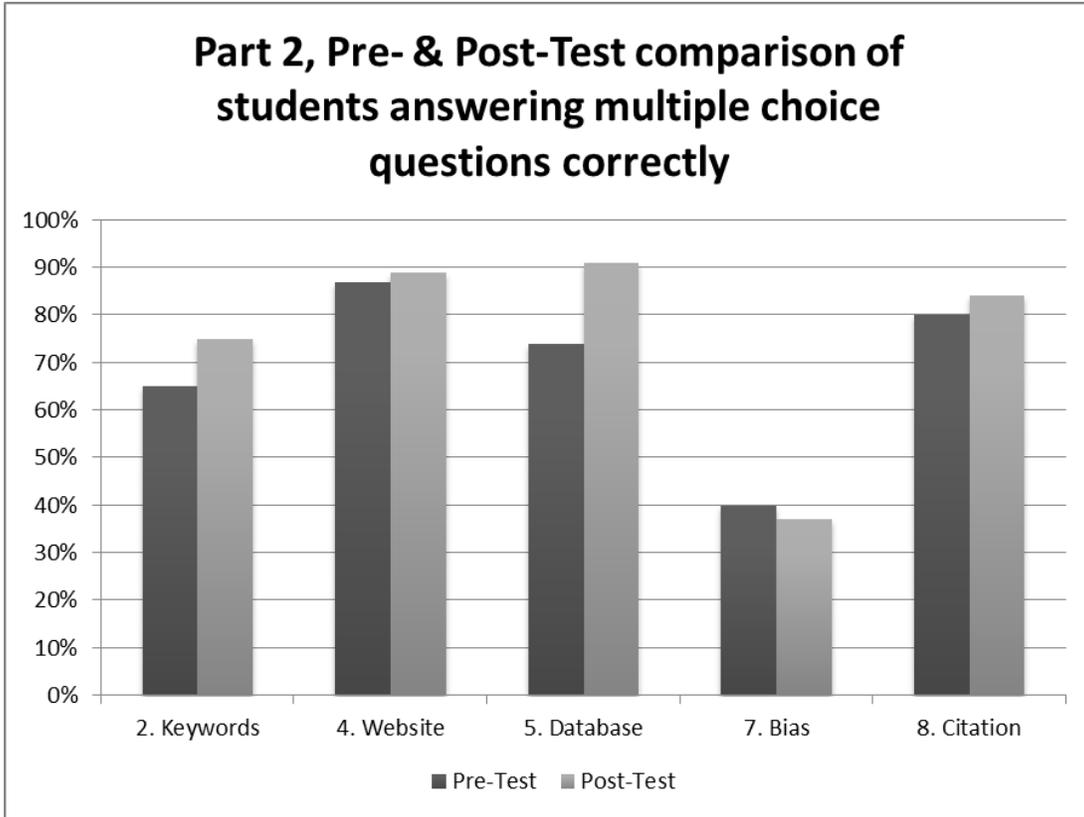
## **Appendix B**

### **Graphical Representation of Pre- and Post-Test Results**

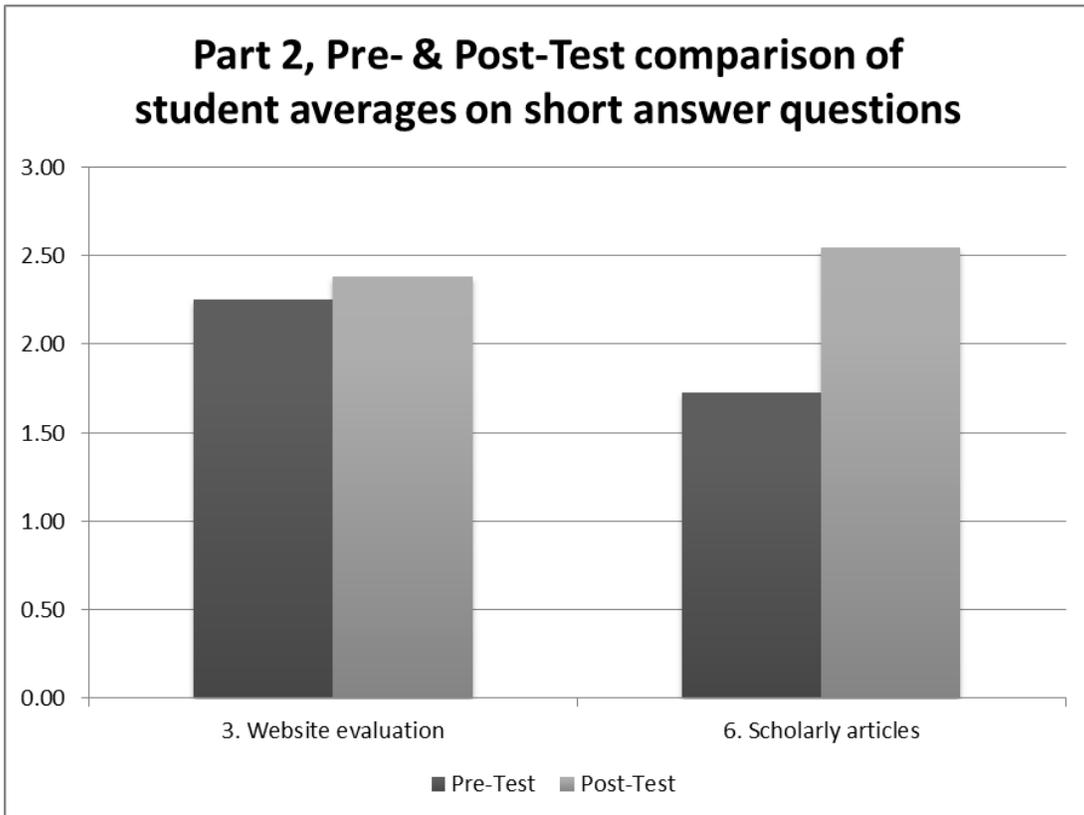
Graph 1



**Graph 2**



**Graph 3**



## Appendix C

### PACE CWRR2 Results

#### Part 1

#### Comparison of student ratings by question for Part 1

Question	Post-Test Average Points (n = 12)
1. Getting started on the assignment	3.08
2. Defining a topic for the assignment	3.50
3. Narrowing down a topic	3.00
4. Coming up with search terms	3.83
5. Finding articles in the research databases on the Library's website (examples include EBSCO, JSTOR, ProQuest, etc.)	3.83
6. Finding sources to use "out on the web" (example - Google, Wikipedia, websites)	4.25
7. Determining whether a website is credible or not	3.58
8. Figuring out where to find sources in different parts of the library	3.75
9. Finding up-to-date materials	3.75
10. Having to sort through all the irrelevant results I get to find what I need	3.42
11. Evaluating the sources that I've found	3.58
12. Reading through the material	4.00
13. Taking notes	3.75
14. Integrating different sources from my research into my assignment	3.83
15. The writing part	3.50
16. Knowing when I should cite a source	3.25
17. Knowing how to cite a source in the right format	3.00
18. Knowing whether or not my use of a source, in certain circumstances, constitutes plagiarism	3.33
19. Deciding whether or not "I'm done".	3.50
20. Knowing whether or not I've done a good job on the assignment	3.25
<b>Average</b>	<b>3.55</b>

#### Average number of students reporting at each level of difficulty for all questions in Part 1

Rating	Post-Test (n = 12)
1 - Almost always difficult	2%
2 - Often difficult	9%
3 - Sometimes difficult	32%
4 - Rarely difficult	48%
5 - Never difficult	10%

## Part 2

Comparison of percentage of students answering multiple choice question correctly.

Multiple Choice Question	Post-Test (n = 12)
2. Keywords	91.7%
4. Website	91.7%
5. Database	100.0%
7. Bias	58.3%
8. Citation	75.0%
<b>Average</b>	<b>83%</b>

### Question 1

Post-Test Question 1.1 - What was the most useful thing that you learned from the library session this year?	Number of student responses (n=12)	Post-Test Question 1.2 - What do you wish that you would have learned?	Number of student responses (n=12)
<b>Nothing</b> - "There was nothing new that I learned"	1	<b>Nothing</b> - "I can't think of anything that wasn't covered."	2
<b>Citation</b> - "Most useful thing I learned when the librarian visited was the review of citations"	1	<b>Citation</b>	0
<b>Library</b> - "The most useful thing that I learned from the librarian's visit was where specific things are located in the library."	2	<b>Library</b> - "I wish that I would have had more exposure to the Library of Congress organizational system and how to search through books by topic inside of that system."	3
<b>Resources</b> - "The most useful thing I learned from the library sessions this year was how to search different databases for different sources."	5	<b>Resources</b> - "I wish I would of learn how to search different databases more in depth."	3
<b>Topics</b> - "I have learned how to look up a topic and define the topic that I was writing about."	1	<b>Topics</b>	0
<b>Evaluation</b>	0	<b>Evaluation</b>	0
<b>Web</b>	0	<b>Web</b>	0
<b>Other</b> - "I had never been in the Staley library so him intorducing it to me and letting me know what was available for me to use was quite helpful."	2	<b>Other</b>	0
<b>No answer</b>	0	<b>No answer</b>	4

**Questions 3 & 6**

<b>Post-Test Question 3 (n = 12)</b>		<b>Post-Test Question 6 (n = 12)</b>	
<b>Score</b>	<b>Number</b>	<b>Score</b>	<b>Number</b>
0	0	0	0
1	2	1	0
2	4	2	5
3	6	3	7
<b>Average</b>	<b>2.33</b>	<b>Average</b>	<b>2.58</b>
	<b>Percent</b>		<b>Percent</b>
Percentage of 0s	0.0%	Percentage of 0s	0%
Percentage of 1s	16.7%	Percentage of 1s	0%
Percentage of 2s	33.3%	Percentage of 2s	42%
Percentage of 3s	50.0%	Percentage of 3s	58%