Millikin University

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

**Assessment Report for Academic Year 2010-2011**

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**Abstract**
Serving as a model of the integration of library skills into the first-year core curriculum, Staley Library's research instruction program seeks to empower students to become information literate. The program is designed not only to teach information retrieval skills, but also the importance of the critical analysis and evaluation of information used in academic research and everyday life.  The research instruction program assesses student learning through the use of a pre-test completed in IN150 and post-test in IN151. Results from academic year 2010-2011 show an increase in average scores from the pre- to the post-test, with significant improvement on individual questions. Overall, the student learning in the research instruction program continues to be strong.

The original set of assessment questions were modified for the 2009-10 academic year to better reflect the content taught in the current library instruction sessions and to make in-class post-test assessment possible using clickers. During the 2010-11 academic year, a few of the questions were again modified for wording clarity and to correct issues arising from the in-class use of clickers as a data collection method.  The assessment method for the library instruction IN150/151 sequence will be revised again over the summer of 2011 for implementation during the 2011-12 academic year.  Our hope is that this 2011-12 set of questions and corresponding assessment method will remain effective for a three year assessment period so that comparative data can be collected.

Please read the "Improvement" section of this report to learn more about the upcoming changes in the library instruction sequence beginning in the 2011-2012 year.

**Goals**
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.

The table below shows how Staley Library's learning goals relate to University-wide 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 |

**Snapshot**
The research and instruction librarians devote a majority of their instructional activities to the CWRR program. During the 2010-2011 academic year, the librarians conducted 97 sessions (53 sections) for in-sequence CWRR classes, 11 sessions (5 sections) for the off-sequence classes, and 4 sessions (2 sections) for the PACE CWRR classes. For IN150, this includes one session per section. For IN151, research instruction is the equivalent of one week; this includes three sessions for MWF sections and 2 sessions for T/Th sections. Debbie Campbell coordinates the research instruction program, and shares in the instruction with librarians Rachel Bicicchi, Cindy Fuller (director), Denise Green, and Amanda Pippitt. The Instructional Services Coordinator, as with the other librarians, reports to the Library Director.

**The Learning Story**
The average Millikin student's introduction to college-level research begins in his/her first year through CWRR. Although most first-year students are what has popularly been termed "digital natives," their technology skills do not necessarily translate into well-developed information seeking skills. Anecdotal evidence shows that, like most college freshmen, those students entering Millikin display an over-reliance on using the free web for information and do not critically evaluate the information that they do use. This is where the Research and Instruction Librarians come into play. The librarians play an integral part in preparing students to become information-savvy; the librarians introduce students to the library catalog, article databases, and web sites of academic quality through hands-on sessions, as well as classroom dialogue on plagiarism and how to evaluate different sources and types of information. By working with the CWRR Professor to appropriately time the library session(s) within the course content, the students are able to experience and practice the application of these skills in a way that makes them relevant to their research needs.

**Assessment Methods**
The 2010-2011 academic year was the fifth complete year of data collected via a pre- and post-test. Beginning in the 2009-10 academic year, the pre-test was administered via a quiz in Moodle before the students in IN150 met with a librarian, and the post-test data was collected during the library instruction sessions via clickers.

The original set of assessment questions were modified for the 2009-2010 academic year, thus making direct question-to-question comparison to results from previous years partially unavailable (See Appendices C & D for more information). During the 2010-11 academic year, a few of the assessment questions were again modified for both wording clarity, and to correct issues arising from the in-class use of clickers as a data collection method.

For the assessment years leading up and including 2010-2011, data from off-sequence and PACE CWRR sections was disregarded due to the small survey sample. Beginning with the 2011-2012 year, the librarians will begin to collect data for these sections allowing comparisons of the instruction and learning to be drawn between the traditionally scheduled, off-sequence, and PACE CWRR sections, while giving a fuller snapshot of the learning in the CWRR program as a whole.

## Assessment Data
Information Literacy Skills Assessment (IN150 pre-test)
- Skills Assessment consisted of 16 questions. Results (n=307) from the Fall 2010 sections of IN150 show that the average score was **75%**. See Appendix A for a full list of results.
- Removing questions numbered 4 & 5 from the calculations (these questions still pose clarity problems; see Analysis of Assessment Results for details), the average score of the pretest was **74%**.

Information Literacy Assessment Quiz (IN151 post-test)
- Quiz consisted of 16 questions. Results (n=varies by question) from the Spring 2011 sections of IN151 show that the average quiz score was **80%**.  Overall, students improved their score on average by **5%** on the post-test, when compared with the pre-test. See Appendix A for a full list of results.
- Removing questions numbered 4 & 5 from the calculations (these questions still pose clarity problems; see Analysis of Assessment Results for details), the average score of the post-test remains **80%**.

The research instruction program now has six years worth of post-test data to analyze. Although each sample (i.e., freshmen class) is different, the average post-test scores do not differ greatly in our six years of data.

|  | **Post-Test Spring 2006** | **Post-Test Spring 2007** | **Post-Test Spring 2008** | **Post-Test Spring 2009** | **Post-Test Spring 2010** | **Post-Test Spring 2011** |
|---|---|---|---|---|---|---|
| Average Score | 12/15 points (80%) | 11.4/15 points (76%) | 11.43/15 points (76%) | 11.15/15 points (74%) | points n/a (75%) | points n/a (80%) |

For a question-by-question comparison of the Spring 2006-Spring 2011 Post-Tests, see Appendix C and E.
For a question-by-question comparison of the Fall 2006 - Fall 2010 Pre-Tests, see Appendix D and E.

**Analysis of Assessment Results**
From Spring 2006 through Spring 2009, the pre- and post-test questions had remained consistent (called the "Original Set"), but as of Spring 2009, some of the skills emphasized during library sessions were not being measured by an assessment question, and several questions assessed were no longer emphasized. As a result, the pre and post-test questions were reviewed and modified for the 2009-10 academic year to better reflect the content covered/emphasized and the activities of the library's instruction program (called 2009 Revision).

After collecting and analyzing the pre and post-test data from the 2009-2010 academic year (2009 Revision), the instruction coordinator determined that a few more modifications were necessary to the question set; so for the 2010-2011 academic year, the 2010 Revision set of questions were used.  These changed included: to clarify the wording of question #4, update the MLA citation style of question #16, modify question #14 to remove the "funny answer" that students were selecting so they could see it displayed on the screen.
A full list of all three sets of these questions and answers is in Appendix F.

For the 2010-2011 Academic year, overall from pre-test to post-test, students improved their scores on 10 questions (numbers 2,3,6,7,8,9,10,12,15,16). Zero questions demonstrated no change, while five questions (numbers 1,4,5,11,13) showed a decrease in correct responses from the pre- to the post-test.  See Appendix A for a complete data of answers and percentages, and Appendix B and Appendix F for a graphical representation.  Between pre-test and post-test, students showed an average score increase of 5%.

The content of 2009 Revision question #4 continues to be an issue.  Divided out into two separate questions for the 2010 Revision set as questions #4 & #5, many students still vocalized confusion with the wording of this question, despite displaying an understanding of the process through the in-class activities. As such, if the traditional pre- and post-test assessment method is used for the 2011-2012 academic year, this question will need to be rewritten for clarity.

Question #14 was also reworded for the 2010 Revision set of questions to remove the "funny answer." However, the structure of the question where all answers are correct makes this question difficult to analyze in regard to the other questions in the set- there is neither a "percentage of students answering the question correctly", nor a "percentage of students answering the question incorrectly."

While Question #16 of the 2010 Revision does utilize the correct MLA citation, an oversight by the Instruction Coordinator in choosing a citation from the Journal of Popular Culture meant that the word *Journal* (the correct answer) was a part of the question. It is disappointing to realize that as such, 18 of 252 students (7%) answering this question either didn't read the question fully before answering via clickers, or even after detailed instruction on journal types, they didn't notice this valuable clue in the citation. One known problem with quantitative assessments, such as our pre and post-test method, is that we don't have the answer as to whether apathy or misunderstanding is the cause.

Grouping each of the quiz questions with the corresponding Staley Library learning goal(s) allows the librarians to measure the effectiveness of instruction. The ratings coincide with the CWRR Artifact Performance Indicators Scale (Based on Percents), with Nominal (Red-Stop) 0-52%, Adequate(Yellow—Caution) 53-74%, Excellent (Green-Go) 75-100%.

| Learning Goal | Rationale | Rating |
|---|---|---|
| 1. Library Resources<br><br>(Question Numbers: 1,2,3,4,5,7) | Pre-Test: 78% (77% removing question #4 & 5)<br>Post-Test: 82% (85% removing question #4 & 5)<br><br>With or without the inclusion of the problem questions #4 & #5 to factor into this percentage, this year the students easily met a Green rating for this learning goal. Questions 1-3 involve vocabulary terms common in research and this year the students assessed already seemed to have begun with an understanding of the terms *citation* and *full text*. Post-instruction , they demonstrate  an increased understanding of the term *abstract*, which is used more often in scholarly research. Despite the labeling confusion that causes questions #4 and #5 to be difficult for students to answer, students demonstrate an increased understanding of research efficiency through question #7. | **Green** |
| 2. Plagiarism/Citing Sources<br><br>(Question Numbers: *14, 15,16) | Pre-Test:  84%<br>Post-Test: 88%<br>(*question #14 not figured into percentages, see appendix F)<br><br>With an increase in the average percentage for the questions assessing this goal, the students show an increased understanding of what constitutes plagiarism and the recording of citation information.<br><br>In regards to Question 15, during instruction the librarians were more direct in explaining the importance of recording citation information in | **Green** |

| | an increasingly digital world. | |
|---|---|---|
| 3. Retrieval of Information<br><br>(Question Numbers: 4,5,6,7,8) | Pre-Test: 67% (57% removing question #4 & 5)<br>Post-Test: 71% (68% removing question #4 & 5)<br><br>Even though this goal remains in the yellow, student pre-test scores for this goal were lower than the pre-test goals for the other three goals. Student post-test scores were 4% higher if questions 4&5 are included in the factoring, and 11% higher if questions 4 & 5 are disregarded.<br><br>As mentioned earlier in the Analysis of Results section, questions 4 & 5 continue to pose wording problems despite students showing an understanding of the concepts during class.<br><br>Questions 6, 7, and 8 assess some of the higher-level retrieval skills; all three questions showed over 5% improvement from pre-test to post-test. Student learning remains strong even though the percentages are in the yellow. | **Yellow** |
| 4. Evaluation of Information<br><br>(Question Numbers: 6,9,10,*11,12,*13, 16) | Pre-Test: 73%<br>Post-Test: 78%<br>*Due to issues with the way the data gathered from the clickers and Moodle can be compared, data from questions 11 & 13 are not included in the percentage for this goal.<br><br>From pre-test to post-test, the students display a greater understanding for how to evaluate the information they find. As evidenced by the number of questions on the assessment which support this goal, an understanding of the evaluation of information is an important focus of library instruction. | **Green** |

**Improvement Plans**

During the Spring of 2010, the librarians began discussing the possibility of modifying the CWRR instruction sequence into a 2:2 session structure; the topic was brought up with the CWRR professors at the final CWRR meeting of Spring 2010. At issue: the librarians began talking about the change to meet the information needs of the students by delivering information literacy skills training at the most appropriate times throughout the Millikin first year. Not only would a change to a 2:2 structure be helpful to students conducting research during the Fall Semester, but it will also help to intercept the "I already have heard this/know this" attitude which often occurs during the Spring CWRR 2 sessions when students are taught basic "how-to" skills at the beginning of library sessions. When students have tuned out, their attitude prevents learning the deeper evaluative skills which are the goals of the CWRR2 sessions.

Over the summer and into the fall of 2010, Debbie Campbell researched the history of the Library Instruction/CWRR partnership to discover the foundations for the current 1:3 session structure and surveyed both the CWRR and University Seminar faculty to gather how they are currently asking students to use information resources in their Fall CWRR 1, IN140, and IN183 courses, and to gather the faculty's perceptions

of first year student's information seeking skills. The goal for the surveys was to better understand the research needs of our first year students; all survey results are available upon request.

After analyzing the results of these two surveys, Campbell met with the University Studies Director- Carmella Braniger, to gather her opinions and ideas about the possibility of branching library instruction out into the University Seminar sections as well.  Campbell wanted to know if including a library instruction Session in the University Seminar courses was an option before bringing the idea to the full CWRR faculty.  Incorporating all of this data, Campbell wrote a proposal presenting her research and multiple options for restructuring the library instruction/CWRR sessions to the CWRR faculty at their December 2010 Roundtable meeting. A copy of this proposal is also available upon request.

After briefly presenting the proposal to the CWRR faculty in December and leaving the faculty with the charge of thinking about all of the possibilities for restructuring, Campbell met again with the CWRR faculty at the end of February 2011 to discuss in more depth the options presented in the proposal and to come to a consensus on a structure with which we should move forward.  Of all the options for the library instruction structure presented in the proposal and brainstormed during the meetings, the CWRR faculty preferred having one library session in both Fall CWRR1 and Seminar, with two sessions in Spring CWRR2, thus moving to a 2:2 structure.  Besides dividing the in-class time needed for the instruction between Seminar and CWRR for scheduling ease, the CWRR faculty felt it would make a stronger connection between the cohorts, as well as help students to realize more formally that research/writing is not just something that happens in CWRR.

After the meeting with the CWRR faculty, Campbell met with the University Seminar Coordinator- Robert Money, to discuss in more detail with him the proposed integration of library instruction into the University Seminar courses.  In past semesters, University Seminar has been involved with "Library Visits" where the cohort's librarian would visit, introduce his/herself, and distribute the first page of the Library's self-guided tour. From analyzing the Seminar survey results, 14 out of 16 Seminar survey respondents did require students to do research during the Fall semester, so it seemed like more formalized library instruction would be a good fit within the University Seminar courses.  Dr. Money agreed that it seemed like a good idea to bring before the full Seminar Faculty, and so in March of 2011, Campbell attended the University Seminar meeting where she presented the proposal from CWRR.  The Seminar faculty seem excited for the opportunity to work more closely with their CWRR cohort partner and to participate in Library/Research Instruction more formally.

Now that a 2:2 model of library instruction will be the structure, the librarian will work directly with the cohorted Seminar and CWRR professor to schedule the sessions.  There is flexibility within the structure of the two Fall sessions; both sessions could take place in CWRR, or one session in CWRR and one in Seminar, or both sessions in Seminar. With the help of the Librarians, the cohorted CWRR/Seminar professors will be responsible for discussing at the time library instruction is most beneficial to the cohort of students and in which class each of the two sessions will be held.

Over the summer of 2011, the librarians will work together to restructure the content of the library instruction sessions to work best with the 2:2 model.  At the time of this report, the tentative content includes:
> Fall- one session on the basics of locating research resources, one session on evaluating web resources.
> Spring- one session on advanced evaluation of sources, one in-class work session with the professor/librarian available for assistance.
In both Fall & Spring, the professors have the option for adding additional, customized sessions if desired. Any changes to content will be discussed with the CWRR Director, and the CWRR faculty will be well-informed. By covering the basic "how to" skills in the fall, along with web evaluation tactics, the librarians are excited for the opportunity to use the Spring CWRR sessions to talk with the students about deeper evaluative skills and criteria, thereby developing the spring sessions into more robust information fluency lessons.

As mentioned also in this report, the assessment of library instruction will also be under revision during the summer of 2011. The Librarians will determine if they believe the quantitative Moodle/Clicker assessment is an effective assessment of student learning in library instruction.  If yes, the questions used for the 2010 Revision of the pre- and post- test will be reviewed during the summer of 2011, both for clarity and to make

sure they are properly assessing instruction. The possibility of a qualitative instead of quantitative (pre & post test) type of assessment will also be discussed with all constituents, and may either be adopted as the new method, or be piloted in a few sections next year.

As mentioned above under the Assessment Methods section, for the assessment years leading up and including 2010-2011, data from off-sequence and PACE CWRR sections was disregarded due to the small survey sample. Beginning with the 2011-2012 year, the librarians will begin to collect data for these sections allowing comparisons of the instruction and learning to be drawn between the traditionally scheduled, off-sequence, and PACE CWRR sections, while giving a fuller snapshot of the learning in the CWRR program as a whole.

The librarians continue to emphasize that timing the library instruction sessions to mesh with the content in the course and giving credit for session attendance both help to reinforce the importance of the skills and concepts learned during library instruction activities.

The librarians are pleased with the strong foundation of collaboration that already exists with the CWRR program, and look forward to working with their CWRR and Seminar colleagues during the 2011-2012 academic year.

Appendix A
**Academic Year 2010-2011 Staley Library CWRR Information Literacy Skills Assessment**

| Number of Questions | Possible Points | Number of Participants PRE-TEST (IN150, Fall 2010) | Number of Participants POST-TEST (IN151, Spring 2011) | Average Score PRE-TEST | Average Score POST-TEST |
|---|---|---|---|---|---|
| 16 | 16 | 351 | varied by question | 75%[1] | 80%[1] |

| Question 1: What is a CITATION? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| Brief summary of an article. | 3 | 8 | | | 1 |
| Use this to find a book on the shelf. | 1 | 3 | | | |
| When the entire article you need is available online. | 0 | 1 | | | |
| Requesting an item not owned by Staley Library. | 1 | 1 | | | |
| **The basic information about a source…** | **302** | **235** | **98%** | **95%** | |
| Totals | 307 | 248 | | | |

| Question 2: What does FULL TEXT mean? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| Brief summary of an article. | 20 | 13 | | | 1 |
| Use this to find a book on the shelf. | 16 | 2 | | | |
| **When the entire article you need is available online.** | **266** | **274** | **87%** | **92%** | |
| Requesting an item not owned by Staley Library. | 3 | 2 | | | |
| The basic information about a source… | 2 | 6 | | | |
| Totals | 307 | 297 | | | |

[1] This total does not include the percentages for questions 11, 13, and 14, as direct comparison rates for these three questions are not available.

| Question 3: What is an ABSTRACT? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| **Brief summary of an article.** | **215** | **219** | **70%** | **83%** | **1** |
| Use this to find a book on the shelf. | 28 | 16 | | | |
| When the entire article you need is available online. | 17 | 5 | | | |
| Requesting an item not owned by Staley Library. | 45 | 13 | | | |
| The basic information about a source… | 2 | 11 | | | |
| Totals | 307 | 264 | | | |

| Question 4: If you want to find a magazine article on your topic, which library resource should you search? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| Millikin's Online Catalog | 90 | 91 | | | 1, 3 |
| **An article database** | **215** | **169** | **70%** | **65%** | |
| Totals | 307 | 329 | | | |

| Question 5: If you want to find a book, cd, or video on your topic, which library resource should you search? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST)) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| **Millikin's Online Catalog** | **286** | **230** | **93%** | **89%** | **1,3** |
| An article database | 19 | 29 | | | |
| Totals | 307 | 259 | | | |

| Question 6: Choose one statement that is NOT TRUE about Scholarly Articles. | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| Scholarly journals contain references or a wo... | 43 | 9 | | | 3, 4 |
| Scholarly journals are written for an informed audience. | 39 | 18 | | | |
| Scholarly journals are published only a few times a year. | 48 | 52 | | | |
| **Scholarly journals contain short articles written by reporters/journalists.** | **176** | **149** | **57%** | **65%** | |
| Totals | 307 | 228 | | | |

| Question 7: Your professor gave you an assignment to find journal articles about global warming.   What should you do? (choose one). | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| **Search a database for journal articles about global warming.** | **160** | **189** | **52%** | **69%** | **1, 3** |
| Search Staley Library's Online Catalog. | 99 | 54 | | | |
| Browse the journals in the current periodicals… | 13 | 8 | | | |
| Use an internet search engine (such as Google or Yahoo) | 33 | 23 | | | |
| Totals | 307 | 274 | | | |

| Question 8: 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 enter two keywords into a Web search engine (Google).  Which two keywords will get the best results? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| **college and censorship** | **192** | **183** | **63%** | **70%** | **3** |
| college and student | 2 | 11 | | | |
| college and speech | 72 | 51 | | | |
| college and restriction | 41 | 15 | | | |
| Totals | 307 | 260 | | | |

| Question 9: The website www.feedthechildren.org likely belongs to a: (choose one). | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| Commercial or for-profit business. | 19 | 11 | | | 4 |
| U.S. government agency | 18 | 11 | | | |
| **Non-profit organization.** | **267** | **204** | **87%** | **89%** | |
| Educational Institution | 3 | 3 | | | |
| Totals | 307 | 229 | | | |

| Question 10: Say you are writing a paper about gun violence, and you use information from the National Rifle Association (NRA) website, www.nra.org.   In this example, which website evaluation criterion do you need to pay attention to the most?  (choose one). | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| Currency/timeliness | 52 | 30 | | | 4 |
| **Bias/objectivity/accuracy** | **244** | **182** | **79%** | **81%** | |
| Functionality of the website | 9 | 7 | | | |
| Number of visitors to the website | 0 | 5 | | | |
| Totals | 307 | 224 | | | |

| Question 11: Let's say you are looking for CURRENT information on U.S. gasonline prices, which TWO sources would be the best?  (choose two). | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percentage of INCORRECT ANSWERS chosen (PRE-TEST) | Percentage of INCORRECT ANSWERS chosen (POST-TEST) | Corresponding Staley Library Learning Goals |
| Encyclopedia | 7 | 11 | | | 4 |
| Journal Article | 49 | 53 | | | |
| Book | 7 | 7 | | | |
| Newspaper Article | 273 | 223 | | | |
| Internet | 255 | 198 | | | |
| Totals | 591 | 492 | **11%[2]** | **14%[2]** | |

[2] For questions 11, 13, and 14- due to a discrepancy in how Moodle and the Clickers record data for questions with multiple correct answers, the percentage represented in this table is the percentage of total incorrect answers / total number of answers given per question.

Question 12: 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?

| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
|---|---|---|---|---|---|
| Report from an automobile manufacturer association | 94 | 53 | | | 4 |
| Survey from a tire company | 31 | 23 | | | |
| **Article in a consumer reporting magazine** | **165** | **145** | **54%** | **63%** | |
| Article in a sports magazine | 16 | 9 | | | |
| Totals | 307 | 230 | | | |

Question 13: Encyclopedias and other reference works (including wikipedia.org) are useful because they often provide: (choose all that apply)

| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percentage of INCORRECT ANSWERS chosen (PRE-TEST) | Percentage of INCORRECT ANSWERS chosen (POST-TEST) | Corresponding Staley Library Learning Goals |
|---|---|---|---|---|---|
| **A bibliography or a list of additional resources…** | **208** | **191** | | | **4** |
| **An overview of the topic, including background information…** | **254** | **228** | | | |
| Entries written by the foremost expert on the topic in the world. | 42 | 80 | | | |
| All of the possible information about a topic. | 74 | 84 | | | |
| Totals | 578 | 583 | **20%²** | **28%²** | |

Question 14: You can help yourself to avoid plagiarism by: (Choose all that apply)

| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Number of INCORRECT ANSWERS chosen (PRE-TEST) | Number of INCORRECT ANSWERS chosen (POST-TEST) | Corresponding Staley Library Learning Goals |
|---|---|---|---|---|---|
| **Using quotation marks when including another person's exact words in your paper.** | **275** | **220** | | | **2** |
| **Using the ideas of others only to support your own argument, and citing them properly when you do include them.** | **203** | **208** | | | |
| **Keeping good records of the citation information for any source that you might use; even from the internet.** | **322** | **215** | | | |

| | | | | | |
|---|---|---|---|---|---|
| **Allowing yourself plenty of time to complete an assignment.** | 192 | 168 | **X%$^2$** | **X%$^2$** | |
| Totals. | 992 | 807 | 13 | 41 | |

| Question 15: When is the BEST time in the research process to record the citation information for a source? | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| **The first time you access a source you might want to use.** | **243** | **221** | **79%** | **82%** | **2** |
| After you have finished writing the section of the paper that uses information from a source. | 55 | 33 | | | |
| When the teacher asks for proof that you did not plagiarize the information in the paper. | 1 | 13 | | | |
| When you are getting ready to print your final draft. | 6 | 2 | | | |
| Totals | 307 | 269 | | | |

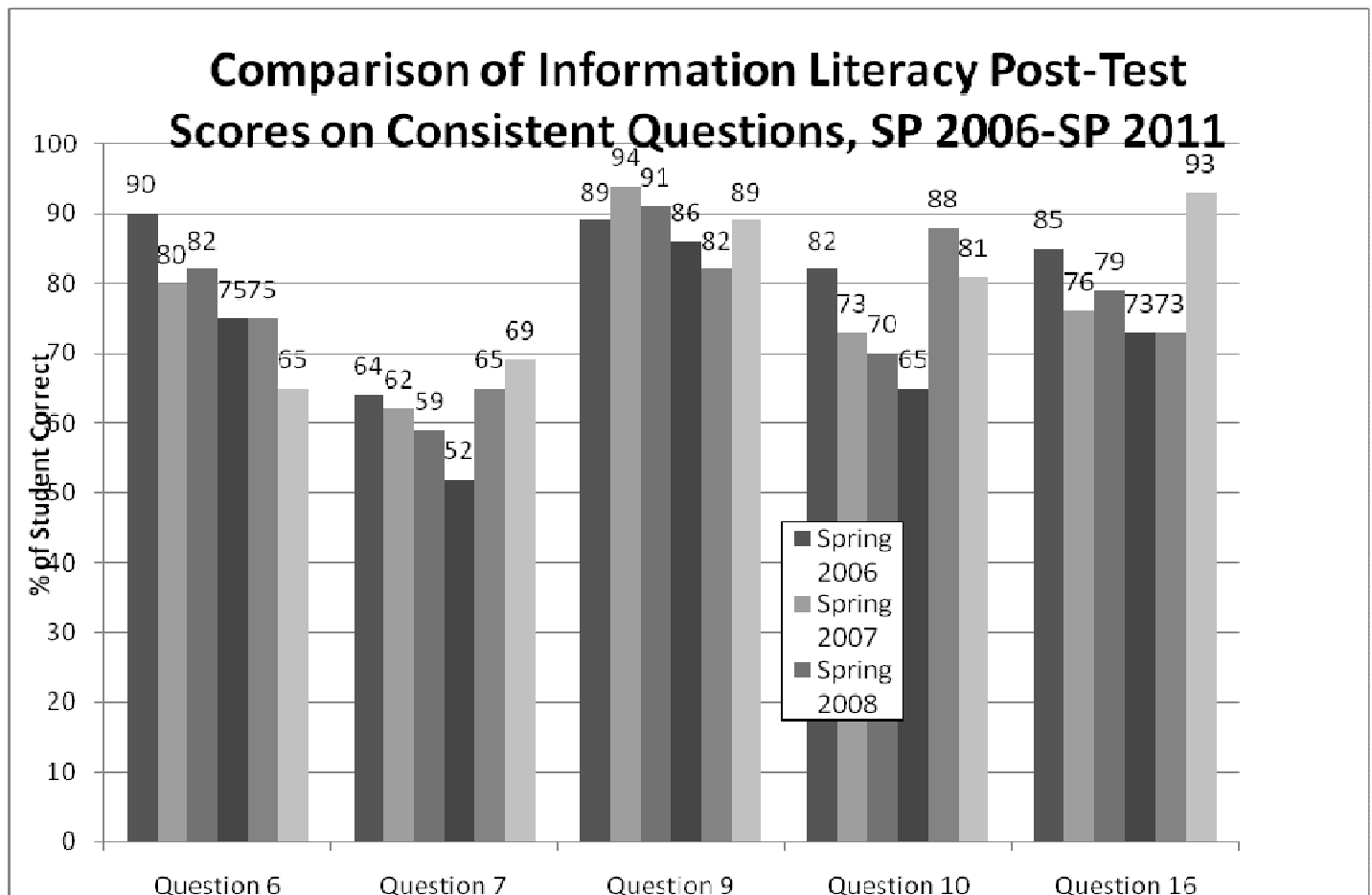| Question 16: What type of material is the following citation? (choose one) Holland-Toll, Linda J. "Bakhtin's Carnival Reversed: King's *The Shining* as Dark Carnival." **Journal of Popular Culture** 33.2 (1999): 131-146. Print. | | | | | |
|---|---|---|---|---|---|
| Choices (correct answers highlighted) | Number of Students Choosing Each Answer Choice (PRE-TEST) | Number of Students Choosing Each Answer Choice (POST-TEST) | Percent of Students Answering Entire Question Correctly (PRE-TEST) | Percent of Students Answering Entire Question Correctly (POST-TEST) | Corresponding Staley Library Learning Goals |
| It is a book. | 24 | 10 | | | 2, 4 |
| **It is a journal article.** | **274** | **234** | **89%** | **93%** | |
| It is a newspaper article. | 9 | 2 | | | |
| It is a video. | 0 | 6 | | | |
| Totals | 307 | 252 | | | |

Appendix B
This chart shows the comparison between the Pre-Test and Post-Test for the 2009-2010 academic year.  The pre-test was administered via Moodle (Fall 2010) before the students attended any library sessions, and the Post-Test was administered (Spring 2011) via Clickers at the end of the corresponding library session.



AY 2010-2011 Information Literacy Pre- and Post-Test Scores
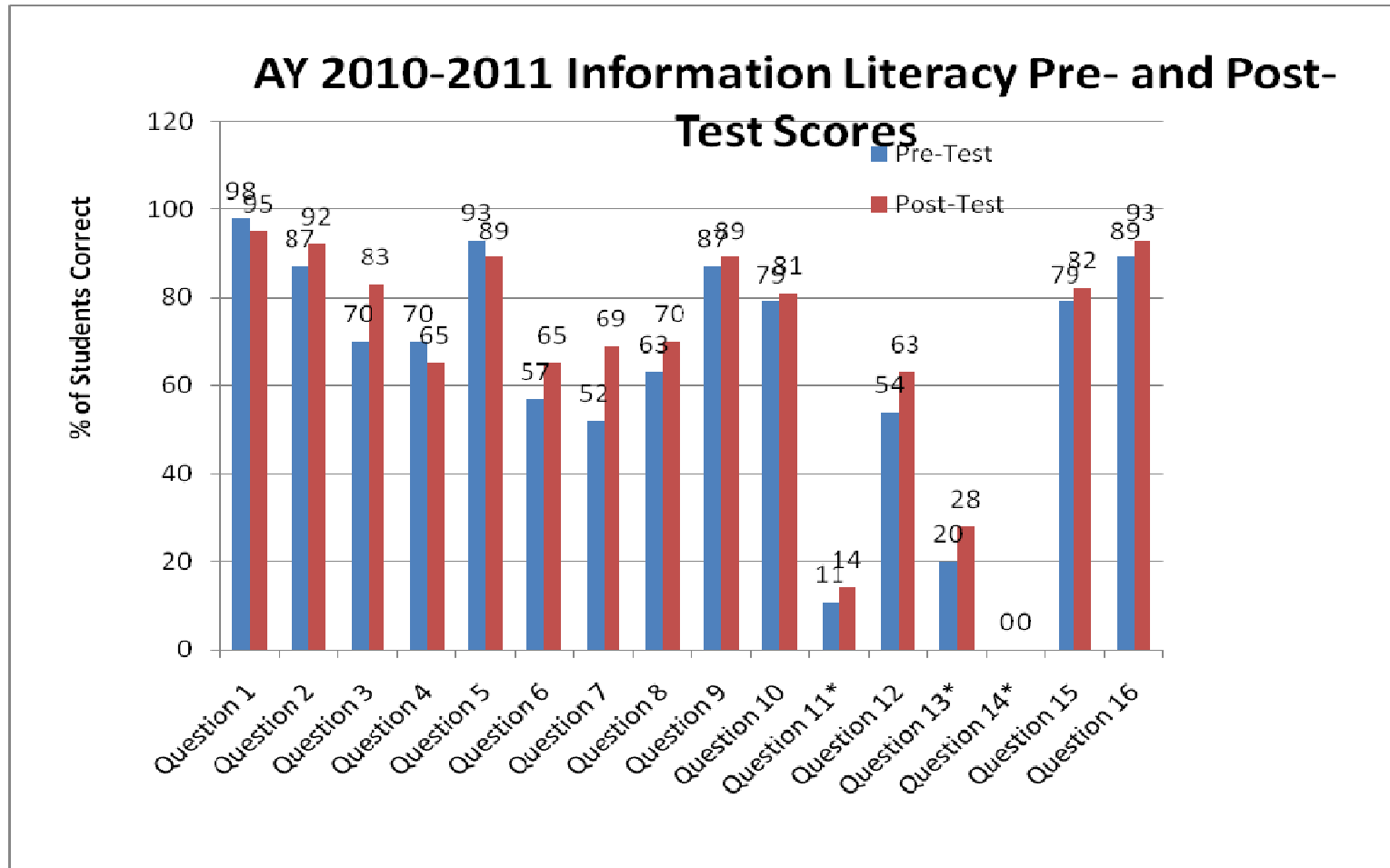
*For questions 11 and 13- due to a discrepancy in how Moodle and the Clickers record data for questions with multiple correct answers, the data represented in the chart for these questions is the percentage of total incorrect answers / total number of answers given per question. For question 14, there is no good way to compare the data for this type of chart.

Appendix C

The questions asked in the Pre and Post-Test for 2009-2010 were modified; some questions were unchanged from the previous version of the assessment (Original Set, 2006-09), so for those questions, comparative data is provided in the following chart.



**Comparison of Information Literacy Post-Test Scores on Consistent Questions, SP 2006-SP 2011**

While the wording of the questions remained the same, the question number changed. The Question numbers in the chart above correspond to the 2009 and 2010 revision numbering. The explanation below shows how these question numbers correspond with the original 2006-2009 (original) assessment.

Question 6 (2009 & 2010 Revision) = Question 6 (original):
    Choose one statement that is NOT TRUE about Scholarly...
Question 16 (2009 & 2010 Revision) = Question 9 (original):
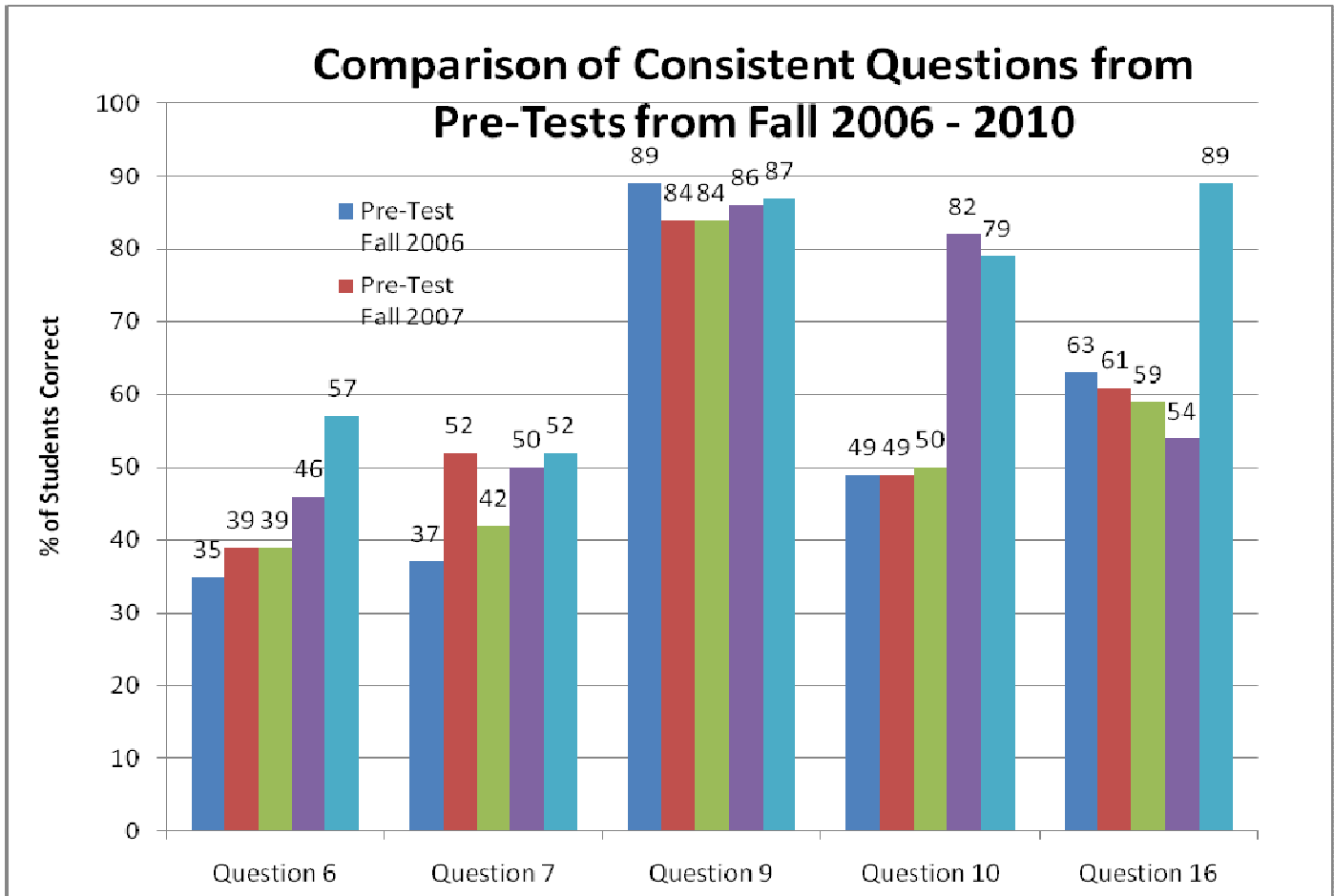    What type of material is the following citation?...
Question 7 (2009 & 2010 Revision) = Question 10 (original):
    Your professor gave you an assignment to find journal...
Question 9 (2009 & 2010 Revision) = Question 12 (original):
    The website www.feedthechildren.org likely belongs to...
Question 10 (2009 & 2010 Revision) = Question 13 (original):
    Say you are writing a paper about gun violence...

Appendix D

The questions asked in the Pre and Post-Test for 2009-2010 were modified; some questions were unchanged from the previous version of the assessment (Original Set, 2006-09), so for those questions, comparative data is provided in the following chart.



## Comparison of Consistent Questions from Pre-Tests from Fall 2006 - 2010

While the wording of the questions remained the same, the question number changed. The Question numbers in the chart above correspond to the 2009 and 2010 revision numbering. The explanation below shows how these question numbers correspond with the original 2006-2009 (original) assessment.

Question 6 (2009 & 2010 Revision) = Question 6 (original):
        Choose one statement that is NOT TRUE about Scholarly...
Question 16 (2009 & 2010 Revision) = Question 9 (original):
        What type of material is the following citation?...
Question 7 (2009 & 2010 Revision) = Question 10 (original):
        Your professor gave you an assignment to find journal...
Question 9 (2009 & 2010 Revision) = Question 12 (original):
        The website www.feedthechildren.org likely belongs to...
Question 10 (2009 & 2010 Revision) = Question 13 (original):
        Say you are writing a paper about gun violence...

Appendix E

Since the clickers do not allow for Matching-type questions, Original Set question #4 was divided out into 2009 & 2010 Revision questions #1, 2, & 3 (questions asking about the definitions for Call Number and Interlibrary Loan were not included in the revision, since pre-test rates had consistently been high). Since the same content was asked, but just in varying format, these charts allow for the comparison of the pre and post-test data.
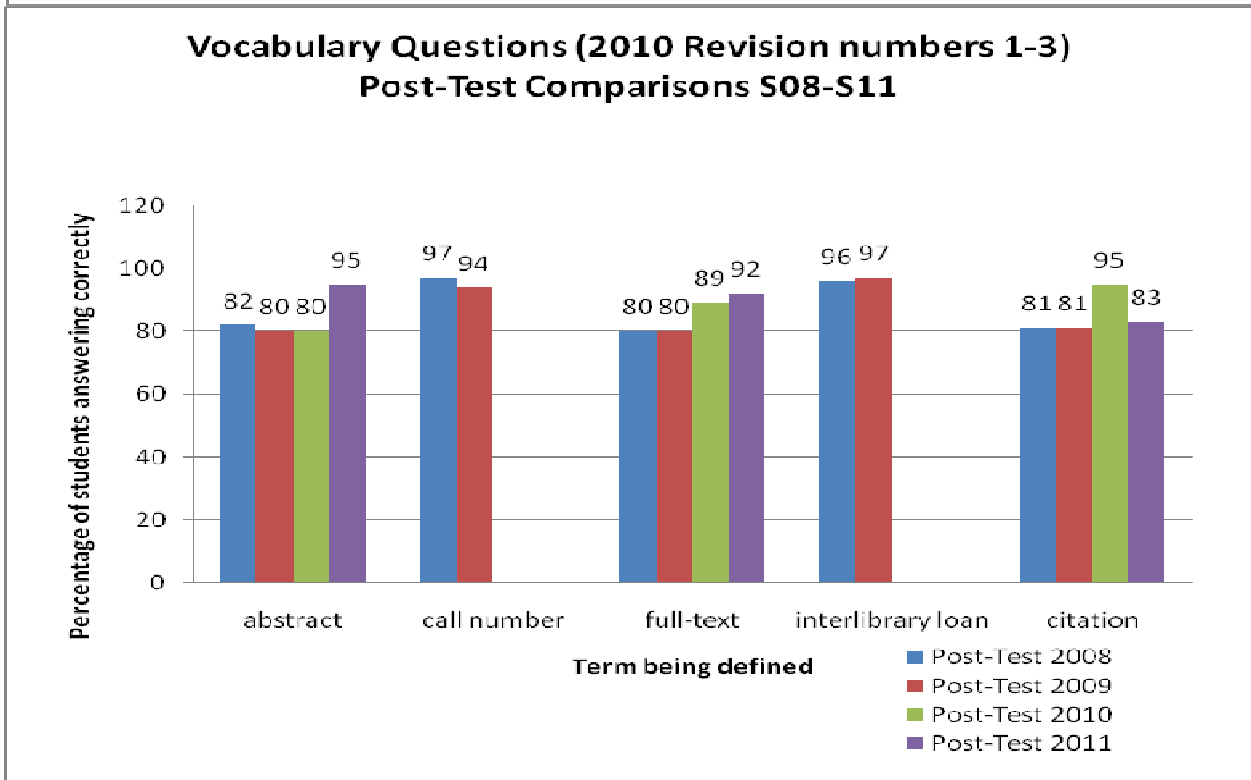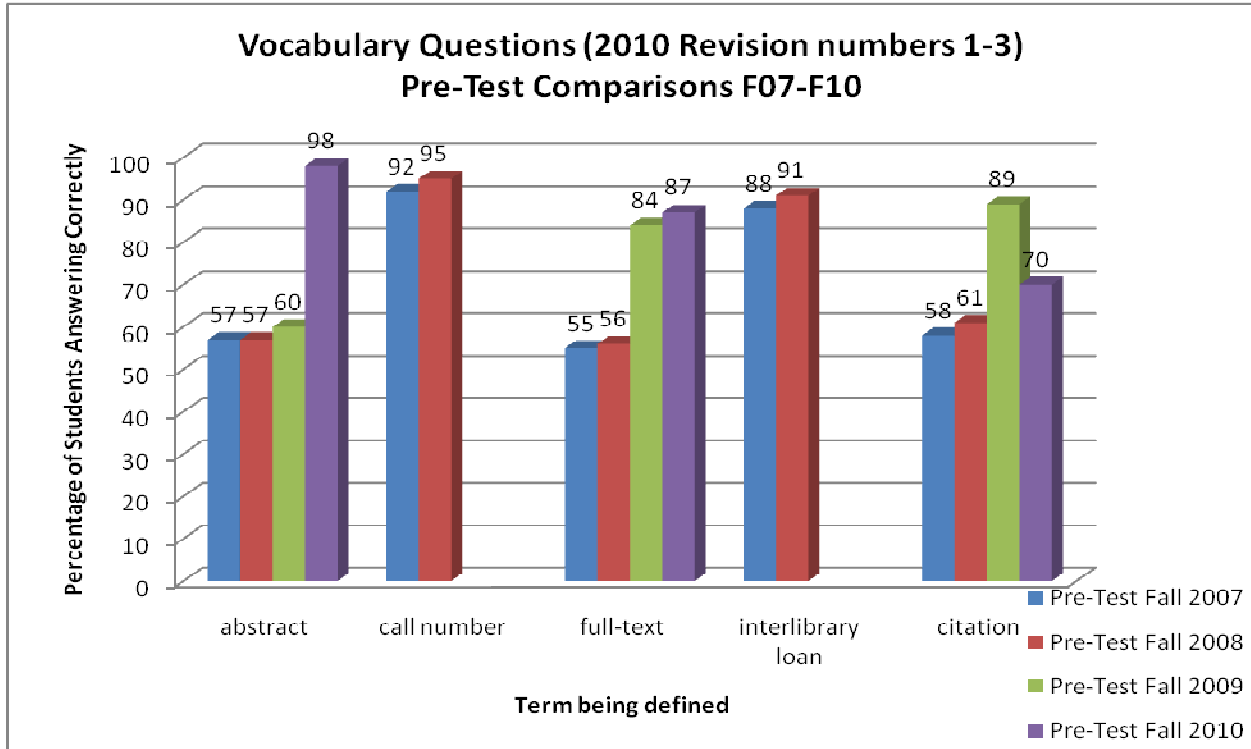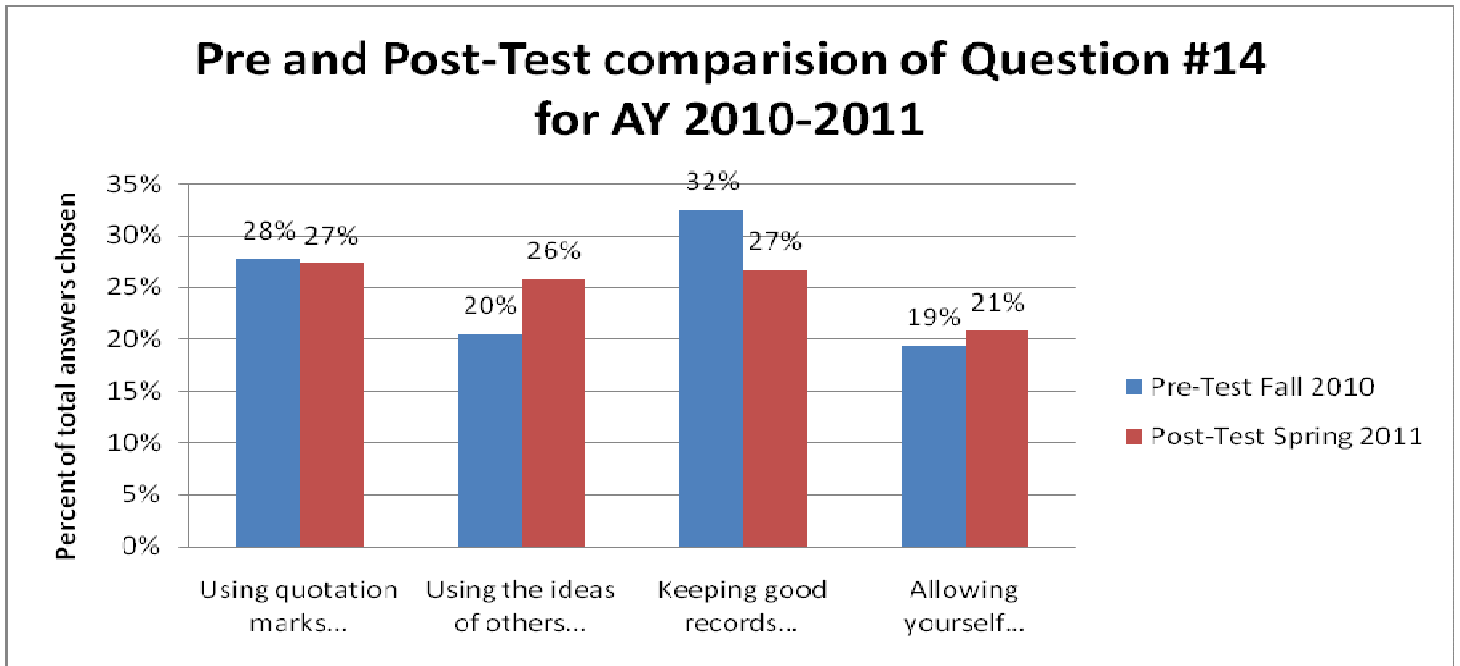
Appendix F

Revision 2010 Question #14 was difficult to analyze using the usual methods because for this question, every answer was correct.

To provide a graphical representation, this chart shows for the pre-test and post-test, the number of times each answer choice was selected as a percentage of the total number answers chosen (how many buttons were pushed by the students).

For the pre-test, the total number of all answers chosen was n=992
For the post-test, the total number of all answers chosen was n=807

## Pre and Post-Test comparision of Question #14 for AY 2010-2011

| Answer Choice | Pre-Test Fall 2010 | Post-Test Spring 2011 |
|---|---|---|
| Using quotation marks... | 28% | 27% |
| Using the ideas of others... | 20% | 26% |
| Keeping good records... | 32% | 27% |
| Allowing yourself... | 19% | 21% |

*Percent of total answers chosen*

Rather than quantative numbers, the main point to be taken from this chart is that of all four presented options, students could use more emphasis on using time management as a means to prevent plagiarism.

Appendix G

<u>Original Set</u>

1. Books in Millikin University's Staley Library are organized by: (choose one)
   a. Author
   b. Title
   c. Subject
   d. Color

2. MILLINET, the Millikin University Library catalog, contains records for: (choose all that apply)
   a. CDs, Videos
   b. Books
   c. Journals, Magazines, Newspapers
   d. Individual Articles

3. In MILLINET, the Millikin University Library catalog, which of the following is the best search to find books written by Willa Cather? (choose one)
   a. "Any Word Anywhere" search
   b. "Browse Author" search
   c. "Journal/Magazine Title" search
   d. "Boolean" search

4. Match the following terms to the definitions: a.) abstract  b.) citation  c.) interlibrary loan  d.) full text  e.) call number. (Note: partial credit allowed.)
   a. Brief summary of an article - A
   b. Basic information about a source - B
   c. Requesting items not owned by Staley Library - C
   d. The entire article is available online from a database. -D
   e. Use this to find a book on the shelf in the library. -E

5. An encyclopedia: (choose one)
   a. Can give you all possible information on the subject your are researching
   b. Is useful for getting background and introductory information on a topic
   c. Should only be consulted after you have looked at other resources
   d. Never includes a bibliography or a list of additional resources for further reading

6. All of the following apply to scholarly journals, EXCEPT: (choose one)
   a. Scholarly journals contain references or a works cited list
   b. Scholarly journals are written for an informed, knowledgeable audience
   c. Scholarly journals are often published only a few times a year
   d. Scholarly journals contain short articles written by journalists

7. Say you need to do research on the topic drug problems among athletes. Your first step is to identify some keywords that will help you search for information. Which of the following is NOT a good keyword to get useful results? (choose one)
     a. drugs
     b. athletes
     c. steroids
     d. problems
     e. sports

8. The library periodical databases are freely accessible on the web to anyone from anywhere. True or False? (choose one)
     a. True
     b. False

9. What type of material is the following citation?   Katz, Marco. "Salsa Criticism at the Turn of the Century: Identity Politics and Authenticity." Popular Music and Society 28 (2005): 35-54.  (choose one)
     a. It is a book
     b. It is a journal article
     c. It is a newspaper article
     d. It is music recording

10. Your professor gives you an assignment to find journal articles about global warming. What should you do? (choose one)
     a. Search a library periodicals database for journal articles about global warming
     b. Browse the journals in the current periodicals section of the library until you come across an article about global warming
     c. Search MILLINET, the Library catalog
     d. Use an Internet search engine (such as Google or Yahoo)

11. If you were looking for current information on U.S. gasoline prices, which TWO sources would be the best? (choose two)
     a. encyclopedia
     b. book
     c. journal article
     d. newspaper article
     e. internet

12. The website www.feedthechildren.org/ likely belongs to a: (choose one)
     a. Commercial or for-profit business
     b. U.S. government agency
     c. Non-profit Organization
     d. Educational institution

13. Say you are writing a paper about gun violence and you use information from the National Rifle Association (NRA) website. In this example, which website evaluation criterion do you need to pay attention to the most? (choose one)
    a. Bias/Objectivity/Accuracy
    b. Currency/Timeliness
    c. Functionality/Website easy to navigate
    d. The website's domain (does the web address end in .com, .org, .edu, .net)

14. Suppose you are writing a paper and you read an article on your topic that you want to include in your paper. In which of the following scenarios would you cite the article? (choose all that apply)
    a. When you copy a whole paragraph from the article
    b. When you write it over in your own words
    c. When you quote one sentence from the article
    d. None of the above

15. Is there anything that the librarian or the online tutorials didn't discuss that you would have liked to learn about? Is there anything you would change about the research instruction sessions? What was the one thing that you found most helpful (this could be something taught by the librarian, learned in the online tutorial, etc...)

2009 Revision
1. What is a CITATION?
    a. Brief summary of an article.
    b. Use this to find a book on the shelf.
    c. When the entire article you need is available online.
    d. Requesting an item not owned by Staley Library
    e. The basic information about a source.

2. What does FULL TEXT mean?
    a. Brief summary of an article.
    b. Use this to find a book on the shelf.
    c. When the entire article you need is available online.
    d. Requesting an item not owned by Staley Library
    e. The basic information about a source.

3. What is an ABSTRACT?
    a. Brief summary of an article.
    b. Use this to find a book on the shelf.
    c. When the entire article you need is available online.
    d. Requesting an item not owned by Staley Library
    e. The basic information about a source.

4. What type of material is the following citation (choose one type) Purnell-Webb, Patricia and Craig P. Speelman.  "Effects of Music on Memory for Text." <u>Perceptual & Motor Skills</u> 106.3 (2008):927-957.
     a. It is a book.
     b. It is a journal article.
     c. It is a newspaper article.
     d. It is a video.

5. You are asked to write a three-page research paper on the following question: <u>"Should colleges be allowed to restrict student speech?"</u> You have decided to enter two keywords into a Web search engine (Google).  Which **two keywords** will get the best results?
     a. college and censorship
     b. college and student
     c. college and speech
     d. college and restriction

6. Millikin Staley Library's Online Catalog DOES NOT contain information about finding (choose one):
     a. CDs and videos
     b. Articles
     c. Books
     d. Magazines, Journals, & Newspapers

7. In the Library's Online Catalog, what type of search lets you combine search terms with the words "and, or, not"?
     a. Author search
     b. Any Word Anywhere search
     c. Boolean search
     d. Title search

8. Choose one statement that is NOT TRUE about Scholarly Articles.
     a. Scholarly journals contain references or a works cited
     b. Scholarly journals are written for an informed audience.
     c. Scholarly journals are published only a few times a year.
     d. Scholarly journals contain short articles written by reporters/journalists.

9. Your professor gave you an assignment to find journal articles about global warming.   What should you do? (choose one).
     a. Search a database for journal articles about global warming.
     b. Search Staley Library's Online Catalog.
     c. Browse the journals in the current periodicals section of the library until you find an article about global warming.
     d. Use an internet search engine (such as Google or Yahoo).

10. The website www.feedthechildren.org likely belongs to a: (choose one).
     a. Commercial or for-profit business.
     b. U.S. government agency.
     c. Non-profit organization.
     d. Educational Institution

11. Say you are writing a paper about gun violence, and you use information from the National Rifle Association (NRA) website, www.nra.org.  In this example, which website evaluation criterion do you need to pay attention to the most? (choose one).

     a. Currency/timeliness
     b. Bias/objectivity/accuracy.
     c. Functionality of the website.
     d. Number of visitors to the website.

12. Let's say you are looking for CURRENT information on U.S. gasoline prices, which TWO sources would be the best? (choose two).

     a. Encyclopedia
     b. Journal Article
     c. Book
     d. Newspaper Article
     e. Internet

13. Encyclopedias and other reference works (including wikipedia.org) are useful because they often provide:  (choose all that apply)

     a. A bibliography or a list of additional resources for further reading.
     b. An overview of the topic, including background and introductory information.
     c. Entries written by the foremost expert on the topic in the world.
     d. All of the possible information about a topic.

14. 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?

     a. Report from an automobile manufacturer association.
     b. Survey from a tire company.
     c. Article in a consumer reporting magazine.
     d. Article in a sports magazine.

15. Suppose you are writing a paper and you read an article on your topic that you want to include in your paper. In which of the following scenarios would you cite the article? (choose all that apply).

     a. When you copy a whole paragraph from the article.
     b. When you write it over in your own words.
     c. When you quote one sentence from the article.
     d. None of these.

16. When is the BEST time in the research process to record the citation information for a source?

     a. The first time you access a source you might want to use.
     b. After you have finished writing the section of the paper that uses information from a source.
     c. When the teacher asks for proof that you did not plagiarize the information in the paper.
     d. When you are getting ready to print you final draft.

1. What is a CITATION?
   a. Brief summary of an article.
   b. Use this to find a book on the shelf.
   c. When the entire article you need is available online.
   d. Requesting an item not owned by Staley Library
   e. The basic information about a source.

2. What does FULL TEXT mean?
   a. Brief summary of an article.
   b. Use this to find a book on the shelf.
   c. When the entire article you need is available online.
   d. Requesting an item not owned by Staley Library
   e. The basic information about a source.

3. What is an ABSTRACT?
   a. Brief summary of an article.
   b. Use this to find a book on the shelf.
   c. When the entire article you need is available online.
   d. Requesting an item not owned by Staley Library
   e. The basic information about a source.


4. What type of material is the following citation? (choose one)Holland-Toll, Linda J. "Bakhtin's Carnival Reversed: King's *The Shining* as Dark Carnival." **Journal of Popular Culture** 33.2 (1999): 131-146. Print.
   a. It is a book.
   b. It is a journal article.
   c. It is a newspaper article.
   d. It is a video.

5. 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 enter two keywords into a Web search engine (Google).  Which **two keywords** will get the best results?
   a. college and censorship
   b. college and student
   c. college and speech
   d. college and restriction


6. If you want to find a magazine article on your topic, which library resource should you search?
   a. Millikin's Online Catalog
   b. An Article Database

7. If you want to find a book, cd, or video on your topic, which library resource should you search?
    a. Millikin's Online Catalog
    b. An Article Database
8. Choose one statement that is NOT TRUE about Scholarly Articles.
    a. Scholarly journals contain references or a works cited
    b. Scholarly journals are written for an informed audience.
    c. Scholarly journals are published only a few times a year.
    d. Scholarly journals contain short articles written by reporters/journalists.
9. Your professor gave you an assignment to find journal articles about global warming.   What should you do? (choose one).
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    b. Search Staley Library's Online Catalog.
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    d. Educational Institution
11. Say you are writing a paper about gun violence, and you use information from the National Rifle Association (NRA) website, www.nra.org.  In this example, which website evaluation criterion do you need to pay attention to the most?
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    a. Currency/timeliness
    b. Bias/objectivity/accuracy.
    c. Functionality of the website.
    d. Number of visitors to the website.
12. Let's say you are looking for CURRENT information on U.S. gasoline prices, which TWO sources would be the best?
(choose two).
    a. Encyclopedia
    b. Journal Article
    c. Book
    d. Newspaper Article
    e. Internet
13. Encyclopedias and other reference works (including wikipedia.org) are useful because they often provide:  (choose all that apply)
    a. A bibliography or a list of additional resources for further reading.
    b. An overview of the topic, including background and introductory information.
    c. Entries written by the foremost expert on the topic in the world.
    d. All of the possible information about a topic.

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Which would be the most trustworthy because of the likelihood of having unbiased, factual information?
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    c. Article in a consumer reporting magazine.
    d. Article in a sports magazine.
15. You can help yourself to avoid plagiarism by: (choose all that apply).
    a. Using quotation marks when including another person's exact words in your paper.
    b. Using the ideas of others only to support your own argument, and citing them properly when you do include them.
    c. Keeping good records of the citation information for any source that you might use; even from the internet.
    d. Allowing yourself plenty of time to complete an assignment.
16. When is the BEST time in the research process to record the citation information for a source?
    a. The first time you access a source you might want to use.
    b. After you have finished writing the section of the paper that uses information from a source.
    c. When the teacher asks for proof that you did not plagiarize the information in the paper.
    d. When you are getting ready to print you final draft.