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

Assessment Report for Academic Year 2008-2009

Reported by Debbie Campbell, Instructional Services Coordinator
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Introduction

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. While results from academic year 2008-2009 show a small increase in average scores from the pre- to the post-test, significant improvement was seen on individual questions. Modifications to the Information Literacy pre- and post-tests are needed to bring the assessment up-to-date and in-line with current instruction activities. Overall, the student learning in the research instruction program continues to be strong.

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 2008-2009 academic year, the librarians conducted 85 sessions for 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 Cindy Fuller, Denise Green, Joe Hardenbrook, and Amanda Pippitt. The Instructional Services Coordinator, as with the other librarians, reports to the Library Director.

The Learning Story
The Millikin student's introduction to college-level research begins in his/her first year through CWRR. The librarians play an integral part in preparing students to become information-savvy. 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 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.

Assessment Methods
The 2008-2009 academic year was the third complete year of data collected from the Moodle-housed, 15 question pre-and post-test results for IN150/IN151. Data from off-sequence and PACE CWRR sections was disregarded due to the small survey sample.

Assessment Data

Information Literacy Skills Assessment (IN150 pre-test)

- Skills Assessment consisted of 15 questions. Results (n=305) from the Fall 2008 sections of IN150 show that the average score was **10.33** out of **15** points, or **69%**. The Fall 2008 semester is the third semester in which this pre-test was fully implemented. See Appendix A for a full list of results.

Information Literacy Assessment Quiz (IN151 post-test)

- Quiz consisted of 15 questions. Results (n=132) from the Spring 2008 sections of IN151 show that the average quiz score was **11.15** out of **15** points, or **74%**. Students improved their score on average by 0.82 points on the post-test, when compared with the pre-test overall. See Appendix A for a full list of results.

Analysis of Assessment Results
Comparison of Academic Year 2008-2009 Pre- and Post-Tests

For the post-test in spring 2009, 132 students completed the assessment, representing 10 out of 24 CWRR sections. Out of these 10 represented CWRR sections, four sections had five or less post-test completions. The currently used method of "outside of class post-test completion" is no longer providing a suitable representative sample of student learning. See the "Improvements" section of this report for future assessment implementation changes.

Although the average score from the pre-test (10.33/15 pts.) to the post-test (11.15/15 pts.) is not particularly significant, large scale improvement is seen on several individual questions. For example, the percentage of students correctly answering question numbers 1, 4, 6, 9, 10, 13, and 14 improved by at least 10 percent from the pre-test to the post-test (see table below):

	% of Students Correct Pre-Test	% of Students Correct Post-Test
Question 1	53%	70%
Question 4	71%[1]	87%[1]
Question 6	39%	75%
Question 9	59%	73%
Question 10	42%	52%
Question 13	50%	65%
Question 14	79%[1]	88%[1]

Overall, students improved their scores on nine questions (numbers 1, 2, 4, 6, 9, 10,12,13, & 14). Question number 3 demonstrated no change, while five questions (numbers 5, 7, 8, 11, & 15) showed a decrease in correct responses from the pre- to the post-test.

Question 15 requires a written response; if a student failed to provide a written response, then this question was counted as incorrect. Because fewer students provided an answer to question number 15 on the post-test, the average score for this question was lower on the post-test. See Appendix B.

While the pre-test and post-test questions have remained consistent since Spring 2006, some of the content covered/emphasized and the activities of the library's instruction program have changed. As a result, some of the skills emphasized during library sessions are not currently measured by an assessment question, and several questions assessed are no longer emphasized. These changes over time may have affected demonstrated student learning on assessment questions (2, 5, & 8). See the "Improvements" section of this report for future plans to modify assessment.

Grouping each of the quiz questions with the corresponding Staley Library learning goal(s) allows the librarians to measure the effectiveness of instruction. For the 2005-2006 and 2006-2007 academic years, the librarians concluded that scores above 70% were at an acceptable level, thus a green rating. Beginning with academic year 2007-2008, the ratings changed to 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 (Question Numbers: 1, 2, 3, 4, 8, 10, 15)	Percent of students correct on Pre-Test[1]: 67% (63%)[2] Percent of students correct on Post-Test[1]: 71% (69%)[3] Since the lessons pertaining to questions 2 & 8 are no longer heavily emphasized during library instruction	**Yellow**

[1] For a complete explanation of how the percentages for questions 2, 4, 11, and 14 were calculated and compare to other questions, see Appendix A.
[2] The number in parentheses represents the percentage on the pre-test, excluding question #15.

	sessions, the librarians will review the current instruction activities and evaluate the corresponding assessments.	
2. Plagiarism/Citing Sources (Question Numbers: 9, 14, 15)	Percent of students correct on Pre-Test[1]: 78% (69%)[2] Percent of students correct on Post-Test1[1]: 82% (80%)[3] The highest score (by 6%) among the four learning goals this year, most likely because the strategies for the proper citation of sources and how to avoid plagiarism are emphasized throughout the first-year core curriculum. The Instructional Services Coordinator will talk with the CWRR Director to learn how plagiarism/citation is discussed in the various CWRR classes.	**Green**
3. Retrieval of Information (Question Numbers: 1, 2, 3, 6, 7, 10, 15)	Percent of students correct on Pre-Test[1]: 66% (61%)[2] Percent of students correct on Post-Test[1]: 74% (72%)[3] Even though this third goal's rating has moved into the yellow, students showed an 8% improvement from pre-test to post-test in this category. The Instructional Services Coordinator will talk with the CWRR Director to learn more about how the topic planning process is covered in the majority of CWRR classes.	**Yellow**
4. Evaluation of Information (Question Numbers: 5, 6, 9, 11, 12, 13, 15)	Percent of students correct on Pre-Test[1]: 71% (67%)[2] Percent of students correct on Post-Test[1]: 76% (75%)[3] The second highest score among the four learning goals, the students are beginning to learn the importance of evaluating the information they find. Instructional Services Coordinator will consider the scope of adding an additional hands-on activity to cover the usage characteristics of resources (i.e. when to use magazines vs. internet vs. books, etc.).	**Green**

Comparison of the Spring 2006 - Spring 2009 Post-Tests

The research instruction program now has four 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 four years of data.

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

For a question-by-question comparison of the Spring 2006-Spring 2009 Post-Tests, see Appendix C and E.
For a question-by-question comparison of the Fall 2006 - Fall 2008 Pre-Tests, see Appendix D and E.

Improvement Plans

Four years of pre- and post-test data indicate that research instruction remains an important component of the first year core curriculum. The librarians will continue to incorporate hands-on activities, student presentation, and group discussions into the library instruction sessions, while making connections between the library instruction activities and CWRR coursework. Upon review of current teaching practices, the librarians will discuss the library goals for CWRR Instruction. The Instructional Services

[3] The number in parenthesis represents the percentage of the post-test, excluding question #15.

Coordinator will continue to streamline the handouts and worksheets used in all CWRR library instruction sessions.

After four years of successful data collection, for the 2009-2010 school year, the 15 question Information Literacy pre- and post-test assessments will be evaluated and revised to reflect the learning activities currently used for each instruction session. For the Fall 2009 semester, the pre-test will continue to be administered using the Moodle course management system. In response to the declining post-test completion rates and in order to allow for more efficient collection of assessment data, the assessment questions will also be modified to allow the post-test questions to be asked in-class via Clickers, starting Spring 2010.

The Library Instructional Services Coordinator will continue to collaborate with the CWRR Director. During the summer of 2009, the discussion will include how topic planning and plagiarism are commonly taught in the various CWRR sections. Furthered knowledge of CWRR classroom content will assist the librarians in making timely connections between library instruction and course assignments/activities, and may lead to changes in the in-class library session activities. The librarians continue to emphasize that giving credit for the library assignments and session attendance helps 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 colleagues again during the 2009-2010 academic year.

Appendix A

Academic Year 2008-2009 Staley Library CWRR Information Literacy Skills Assessment

Number of Questions	Possible Points	Number of Participants PRE-TEST (IN150, Fall 2007)	Number of Participants POST-TEST (IN151, Spring 2008)	Average Score PRE-TEST	Average Score POST-TEST
15	15	305	132	10.33/15 points or 69%	11.14/15 points or 74%

Question 1: Books in Millikin University's Staley Library are organized by: (choose one)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
Author	39%	22%	53%	70%	1,3
Title	8%	5%			
Subject	53%	70%			
Color	0%	0%			
Unanswered	0%	0%			

Question 2: MILLINET, the Millikin University Library catalog, contains records for: (choose all that apply)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
CDs, Videos	74%	85%	59%[4]	64%[4,5]	1,3
Books	86%	90%			
Journals, Magazines, Newspapers	86%	88%			
Individual Articles	72%	73%			
Unanswered	0%	0%			

Question 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)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
"Any Word Anywhere" search	0%	2%	96%	96%	1,3

“Browse Author” search	96%	96%			
“Journal/Magazine Title” search	2%	0%			
“Boolean” search	1%	0%			
Unanswered	0%	0%			

Question 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.)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
A. Brief summary of an article	57%	80%	71%[4]	87%[4,5]	1
B. Basic information about a source	61%	81%			
C. Requesting items not owned by Staley Library	91%	97%			
D. The entire article is available online from a database	56%	80%			
E. Use this to find a book on the shelf in the library	95%	94%			
Unanswered	0%	0%			

Question 5: An encyclopedia: (choose one)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
Can give you all possible information on the subject your are researching	7%	8%	86%	80%	4
Is useful for getting background and introductory information on a topic	86%	80%			
Should only be consulted after you have looked at other resources	4%	6%			
Never includes a bibliography or a list of additional resources for further reading	3%	6%			
Unanswered	0%	0%			

Question 6: All of the following apply to scholarly journals, EXCEPT: (choose one)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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 works cited list	15%	6%	39%	75%	3,4
Scholarly journals are written for an informed, knowledgeable audience	16%	8%			
Scholarly journals are often published only a few times a year	30%	14%			
Scholarly journals contain short articles written by journalists	39%	75%			
Unanswered	0%	0%			
Question 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)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
Drugs	3%	4%	80%	77%	3
Athletes	1%	2%			
Steroids	4%	3%			
Problems	80%	77%			
Sports	13%	12%			
Unanswered	0%	1%			

Question 8: The library periodical databases are freely accessible on the web to anyone from anywhere. True or False? (choose one)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
True	45%	52%	55%	46%	1
False	55%	46%			
Unanswered	0%	2%			

Question 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)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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	30%	17%	59%	73%	2,4
It is a journal article	59%	73%			
It is a newspaper article	8%	5%			
It is music recording	3%	3%			
Unanswered	0%	0%			

Question 10: Your professor gives you an assignment to find journal articles about global warming. What should you do? (choose one)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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 library periodicals database for journal articles about global warming	42%	52%	42%	52%	1,3
Browse the journals in the current periodicals section of the library until you come across an article about global warming	7%	6%			
Search MILLINET, the Library catalog	44%	36%			
Use an Internet search engine (such as Google or Yahoo)	6%	5%			
Unanswered	0%	0%			

Question 11: If you were looking for current information on U.S. gasoline prices, which TWO sources would be the best? (choose two)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
Encyclopedia	1%	1%	84%[4]	72%[4,5]	4
Book	0%	1%			
Journal Article	15%	25%			
Newspaper Article	97%	94%			
Internet	86%	76%			
Unanswered	0%	0%			

Question 12: The website www.feedthechildren.org/ likely belongs to a: (choose one)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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	7%	8%	84%	86%	4
U.S. government agency	5%	4%			
Non-profit Organization	84%	86%			
Educational institution	4%	1%			
Unanswered	0%	0%			

Question 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)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
Bias/Objectivity/Accuracy	50%	65%	50%	65%	4
Currency/Timeliness	26%	20%			
Functionality/Website easy to navigate	2%	1%			
The website's domain (does the web address end in .com, .org, .edu, .net)	22%	12%			
Unanswered	0%	0%			

Question 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)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
When you copy a whole paragraph from the article	84%	81%	79%[4]	88%[4,5]	2
When you write it over in your own words	60%	74%			
When you quote one sentence from the article	94%	95%			
None of the above	1%	0%			
Unanswered	0%	0%			

Question 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...)					
Choices (correct answers highlighted)	Percent of Students Choosing Each Answer Choice (PRE-TEST)	Percent 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
Note: Credit given for most written responses.			96%	84%	1,2,3,4
Correct	96%	84%			
Incorrect	0%	0%			
Unanswered	4%	16%			

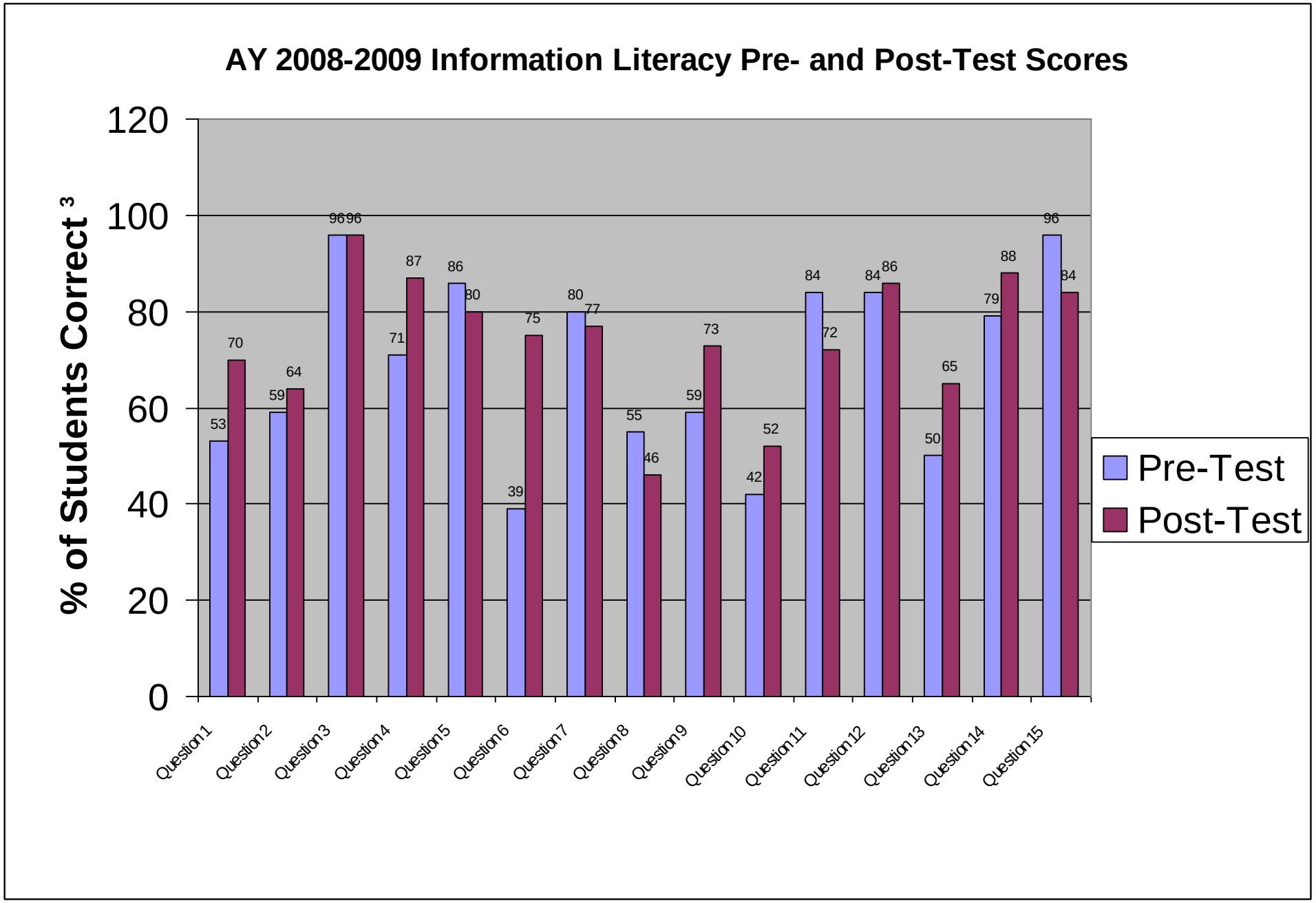
[4]For the 2007-2008 academic year, the Information Literacy Pre- and Post-Tests switched from being hosted in the Blackboard Course Management System to the Moodle Course Management System. Due to the way results are made available in Moodle, this academic year for questions 2, 4, 11, and 14, it was not possible to find the actual "Percent of Students Answering Entire Question Correctly."

Instead, the percentages for these questions are found by averaging the "Facility Index (% Correct)," defined by Moodle as "a measure of how easy or difficult is a question for quiz-takers. It is calculated as: FI = ($X_{average}$) / X_{max} where $X_{average}$ is the mean credit obtained by all users attempting the item, and X_{max} is the maximum credit achievable for that item. If questions can be distributed dicotomically into correct / uncorrect categories, this parameter coincides with the percentage of users that answer the question correctly."

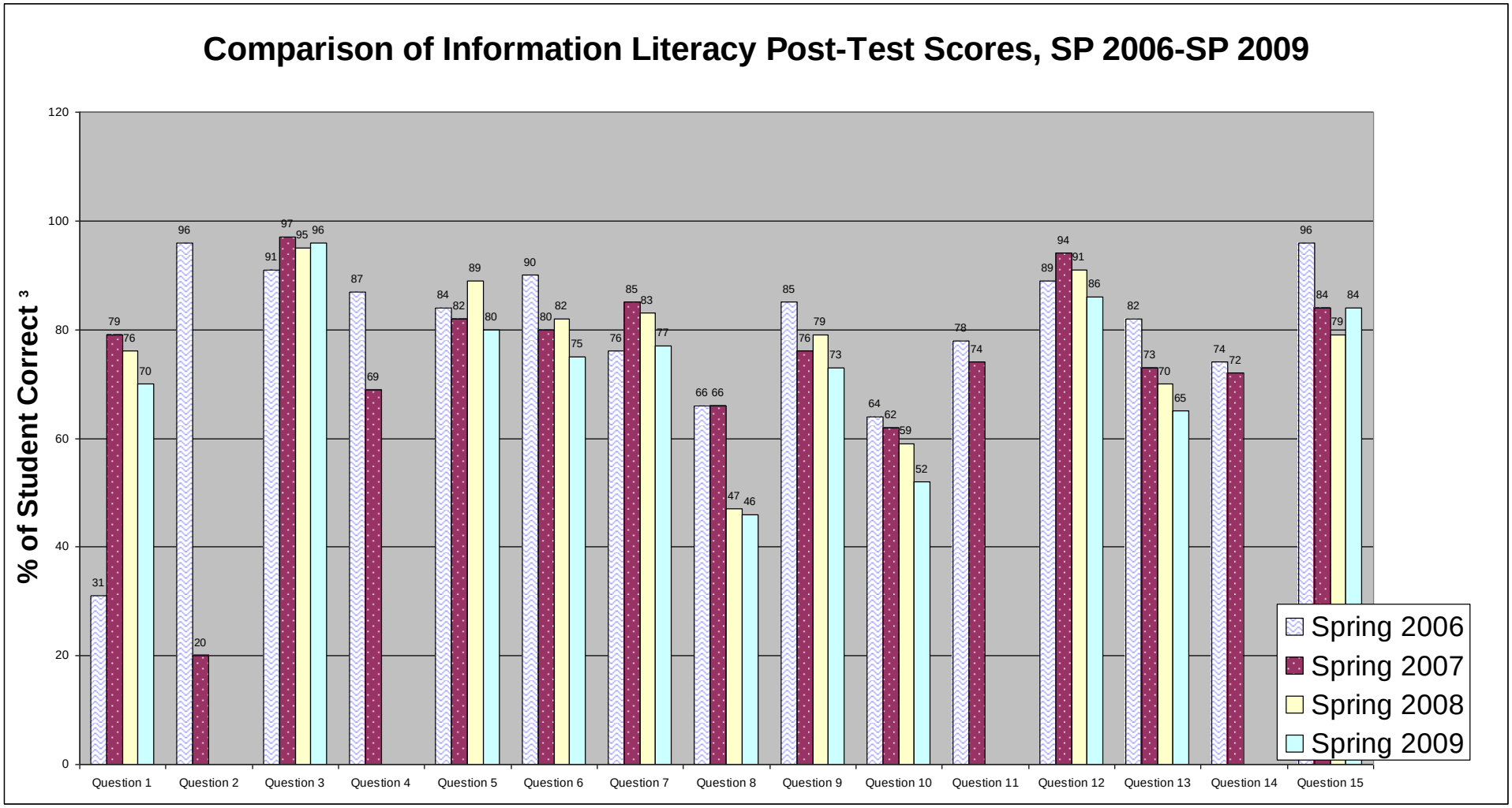
Using the Facility Index does allow us to compare the Pre-Test results to Post-Test results for the 2007-2008 academic year, but it does not provide an appropriate comparison to the 2005-2006 and 2006-2007 academic years' results. Therefore, Questions 2, 4, 11, and 14 will be left out of any Appendices comparing the current year to the previous years' results.

[5]Due to the way that data is currently compiled by Moodle, when calculating the average "Facility Index (% Correct)" for the Post-Test, the results from two CWRR sections totaling three test completions (three students) were omitted to prevent an unbalanced averaging of data.

Appendix B


AY 2008-2009 Information Literacy Pre- and Post-Test Scores
% of Students Correct [3]
120
100
80
60
40
20
0
53
70
59
64
96
96
71
87
86
80
39
75
80
77
55
46
59
73
42
52
84
72
84
86
50
65
79
88
96
84
Question 1
Question 2
Question 3
Question 4
Question 5
Question 6
Question 7
Question 8
Question 9
Question 10
Question 11
Question 12
Question 13
Question 14
Question 15
Pre-Test
Post-Test

Appendix C


Comparison of Information Literacy Post-Test Scores, SP 2006-SP 2009
% of Student Correct [3]
120
100
80
60
40
20
0
Question 1
Question 2
Question 3
Question 4
Question 5
Question 6
Question 7
Question 8
Question 9
Question 10
Question 11
Question 12
Question 13
Question 14
Question 15
Spring 2006
Spring 2007
Spring 2008
Spring 2009
31
79
76
70
96
20
91
97
95
96
87
69
84
82
89
80
90
80
82
75
76
85
83
77
66
66
47
46
85
76
79
73
64
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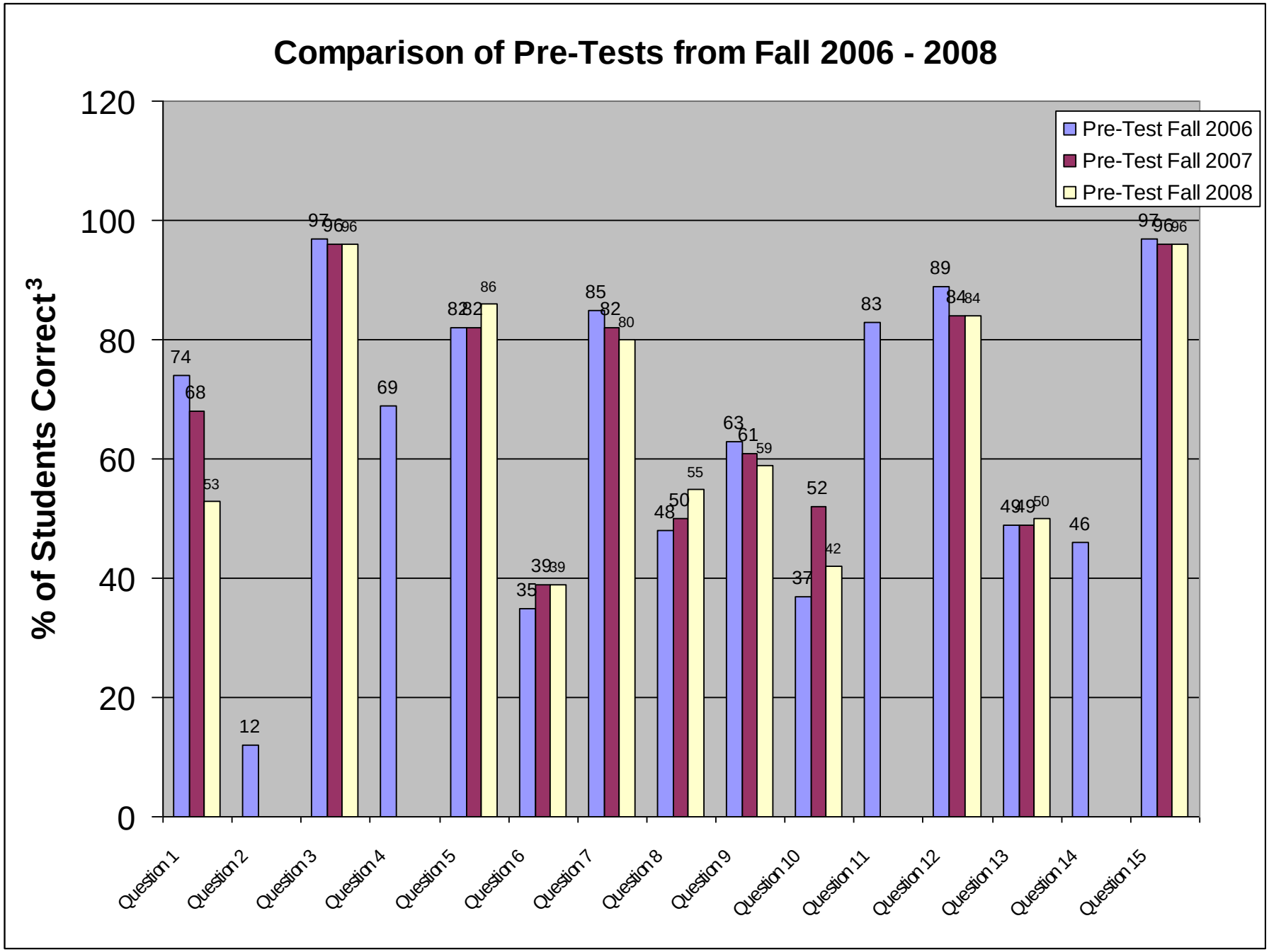
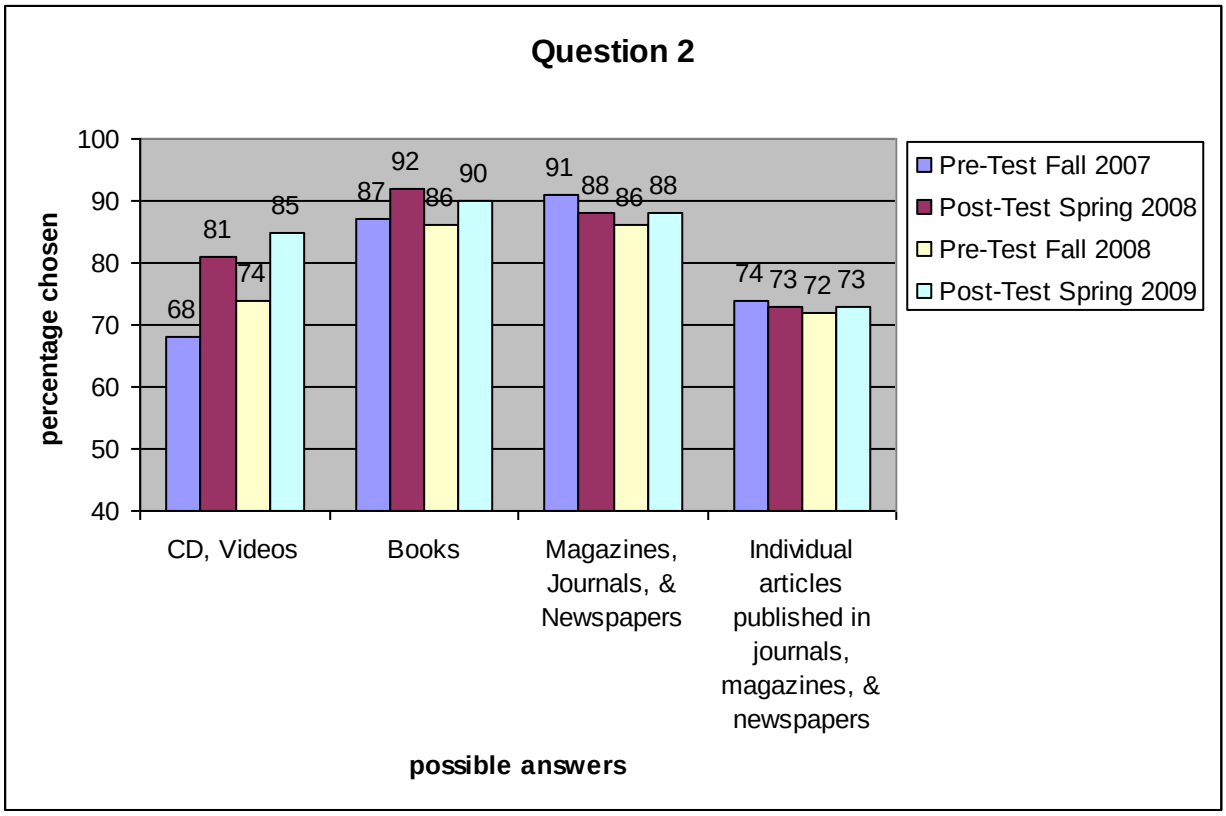
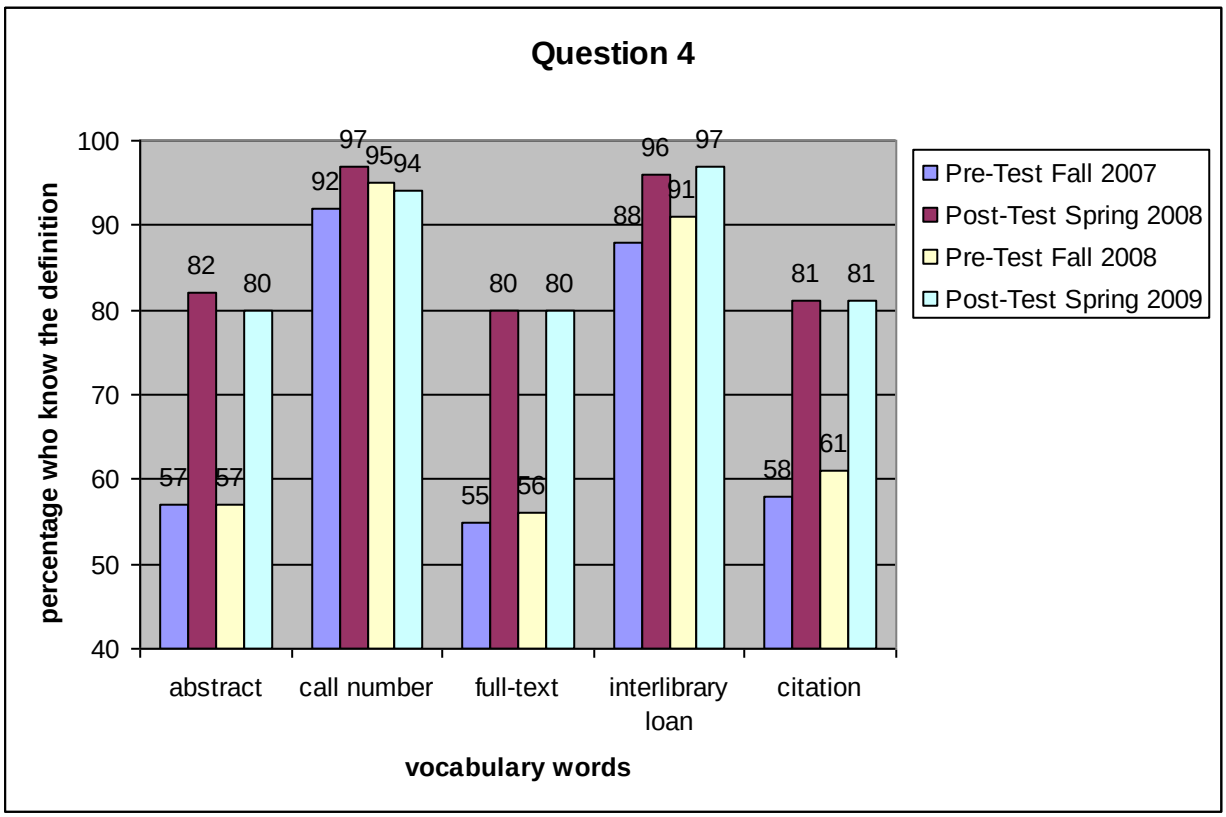
79
84

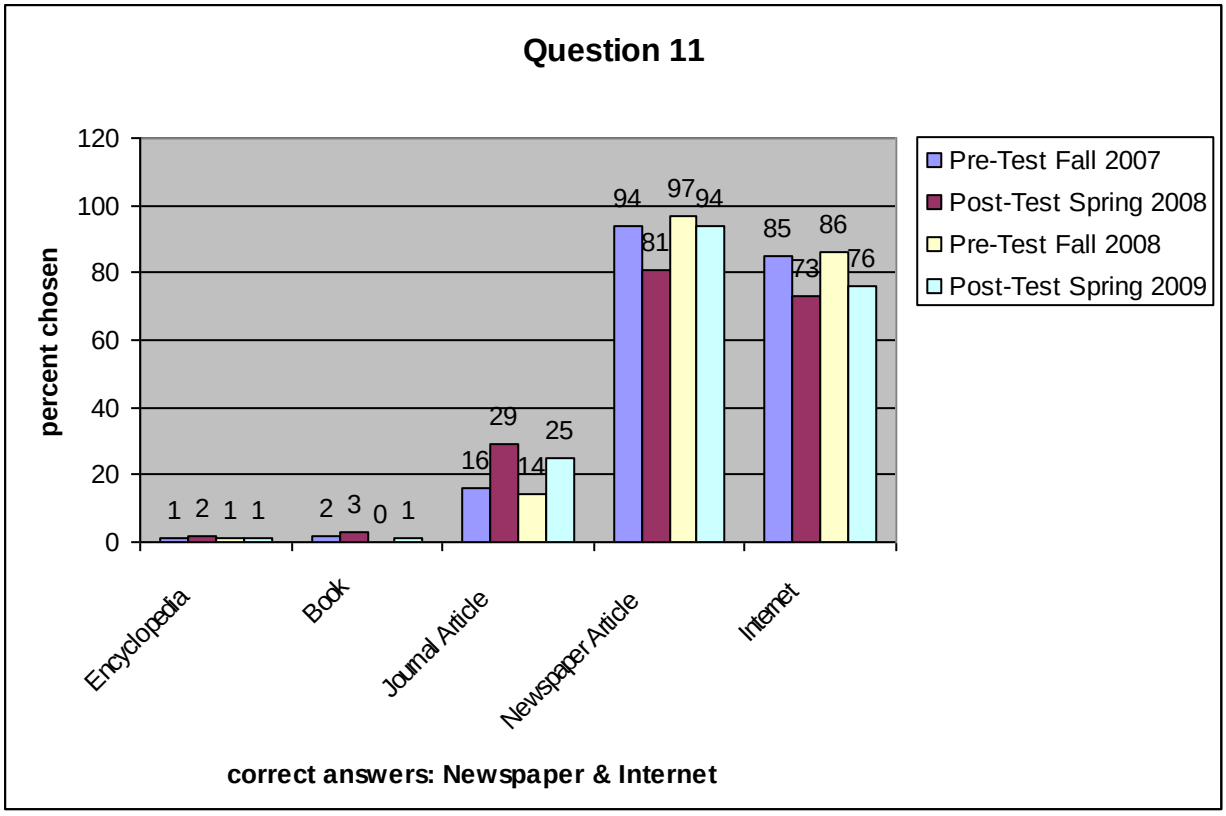
Appendix D

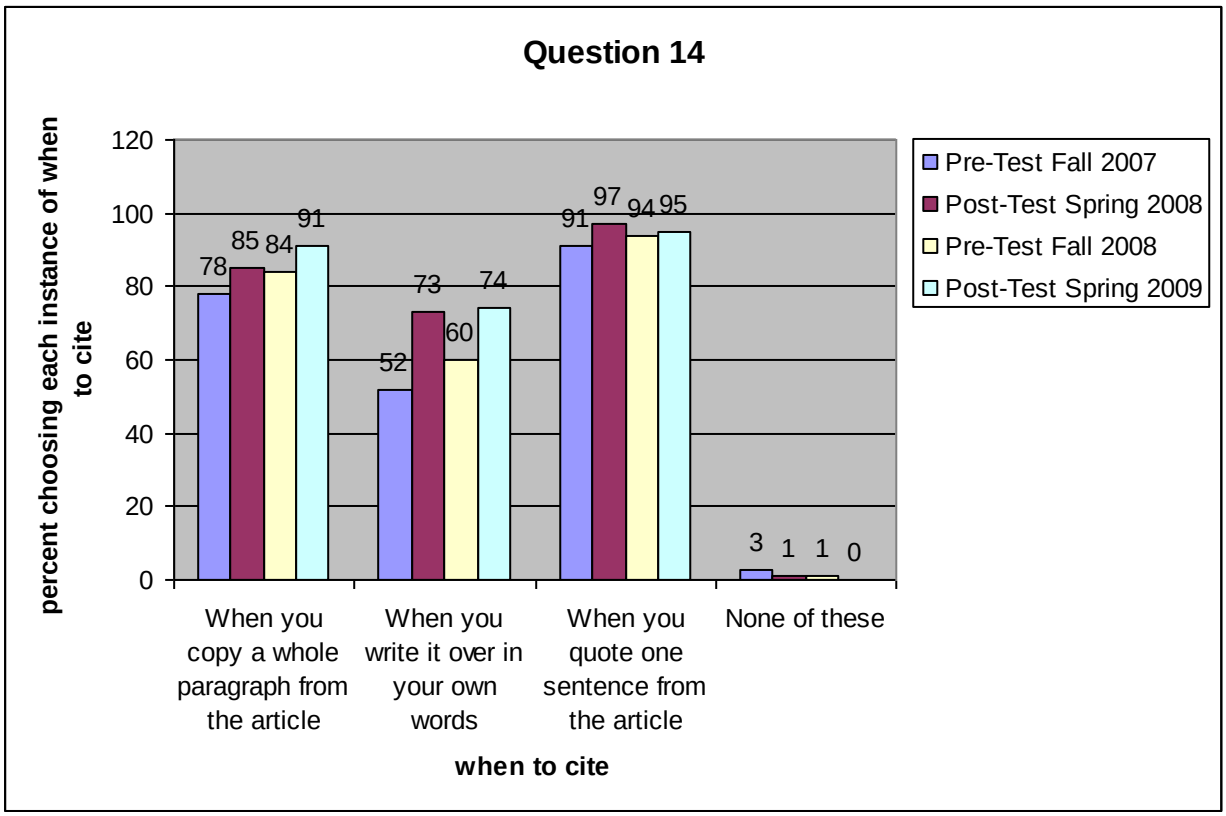

Comparison of Pre-Tests from Fall 2006 - 2008
% of Students Correct[3]
120
100
80
60
40
20
0
Pre-Test Fall 2006
Pre-Test Fall 2007
Pre-Test Fall 2008
74
68
53
12
97
96
96
69
82
82
86
35
39
39
85
82
80
48
50
55
63
61
59
37
52
42
83
89
84
84
49
49
50
46
97
96
96
Question 1
Question 2
Question 3
Question 4
Question 5
Question 6
Question 7
Question 8
Question 9
Question 10
Question 11
Question 12
Question 13
Question 14
Question 15

Appendix E


Question 2
percentage chosen
100
90
80
70
60
50
40
68
81
74
85
87
92
86
90
91
88
86
88
74
73
72
73
CD, Videos
Books
Magazines, Journals, & Newspapers
Individual articles published in journals, magazines, & newspapers
possible answers
Pre-Test Fall 2007
Post-Test Spring 2008
Pre-Test Fall 2008
Post-Test Spring 2009


Question 4
percentage who know the definition
100
90
80
70
60
50
40
57
82
57
80
92
97
95
94
55
80
56
80
88
96
91
97
58
81
61
81
abstract
call number
full-text
interlibrary loan
citation
vocabulary words
Pre-Test Fall 2007
Post-Test Spring 2008
Pre-Test Fall 2008
Post-Test Spring 2009


Question 11
percent chosen
120
100
80
60
40
20
0
1 2 1 1
2 3 0 1
16 29 14 25
94 81 97 94
85 73 86 76
Encyclopedia
Book
Journal Article
Newspaper Article
Internet
Pre-Test Fall 2007
Post-Test Spring 2008
Pre-Test Fall 2008
Post-Test Spring 2009
correct answers: Newspaper & Internet


Question 14
percent choosing each instance of when to cite
120
100
80
60
40
20
0
78 85 84 91
52 73 60 74
91 97 94 95
3 1 1 0
When you copy a whole paragraph from the article
When you write it over in your own words
When you quote one sentence from the article
None of these
Pre-Test Fall 2007
Post-Test Spring 2008
Pre-Test Fall 2008
Post-Test Spring 2009
when to cite