Library Instruction Assessment and Survey Report

Library Survey Committee – University of Missouri-Saint Louis, 2008

By

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Introduction:

The mission of the University of Missouri-St. Louis Libraries is to “support the educational objectives of the university and meet the teaching, research, and informational needs of the campus community.” Library instruction has long been considered a critical component of the Libraries’ mission. The teaching function of the Libraries is supported in many ways including: formal classroom instruction; reference help at the Thomas Jefferson, Ward E. Barnes and St. Louis Mercantile Libraries; subject specific research guides; library websites; and the Research Consultation program at the Thomas Jefferson and Barnes Libraries.

Assessment of current instruction is recognized as one way to diagnose problems, improve learning outcomes, and better meet the information literacy needs of UM – St. Louis students. Knowledge gained from assessment can be used to help librarians prioritize and define content for library instruction. In addition, assessment results can be used to provide recommendations to faculty.

The Library Instruction Survey Committee first developed and executed a Survey for Students and Faculty in the Spring Semester – 2003. In 2006, the Library Instruction Survey Committee was reconvened because of the recognition that evaluation and assessment of learning should be an ongoing process.

The Student and Faculty Library Instruction Surveys administered in the Fall Semester of 2007 were loosely based on the 2003 Surveys. The goal of the surveys in both 2003 and 2007 was to determine students’ impressions about the instruction that they received. In 1998 the Association for College and Research Libraries (ACRL) completed the Task Force on Academic Library Outcomes Assessment Report. This report states: “Library Instruction on the part of a user is an outcome. So is dissatisfaction. The Task Force considers simple satisfaction a facile outcome however, too often unrelated to more substantial outcomes…”

The more substantive assessment outcomes that the ACRL Task Force recommended were to measure the “ways in which library users are changed as a result of their contact with the library’s resources and programs.” Therefore, a second and more important goal of the current Library Instruction Survey Committee was to develop and administer a pre and posttest, the Library Instruction Assessment (LIA). The goal of the LIA was to record measureable gains in student library information literacy following approximately one hour library instruction session.

Library Instruction Survey Committee Members:

Thomas Jefferson Library:
Chair, Chris Niemeyer - Library Instruction Coordinator
Reference Librarians - Mary Doran, Clinton Berry, and Lindsay Schmitz

Ward Barnes Library:
Reference Librarian - Helen Shaw

Acknowledgements:

We wish to thank the English 3100 faculty whose classes participated in the three semesters required for the Library Instruction Assessment study. We also thank all faculty who participated in the Faculty Library Instruction Survey and whose classes participated in the Student Library Instruction Survey (Fall 2007). We appreciate faculty efforts in distributing the surveys to students and in returning the completed forms to the library.
We also wish to acknowledge our colleague, Mary Doran, for her major contribution to organizing and providing a structure for the Library Instruction Assessment.

**Library Instruction Assessment (LIA) Pre and Posttests:**

**Information Literacy Standards:**

Teresa Y. Neely in *Information Literacy Assessment: Standards-Based Tools and Assessments* writes that “[t]he library profession has long recognized the importance of standards in all aspects of library work.” Further she notes that, “[t]he development and widespread acceptance and use of standards is critical in the assessment of student outcomes.” The LIA was developed using the standards recommended by the ACRL in *Information Literacy Competency Standards for Higher Education (2000)* and the *Objectives for Information Literacy Instruction: A Model Statement for Academic Librarians (IS Objectives)*, as the framework. The goal was to develop a pre and posttest designed to record *measurable learning outcomes* for library instruction. When choosing the objectives for the LIA the following criteria were considered: learning that was “appropriate for the instruction area”, “logical learning outcomes” for library instruction, and the amount and difficulty of learning that was attainable by students in a library instruction session. (See Appendix A for the complete Goals and Objectives)

Considerable attention was given to the structure of a library instruction session and how much information a student could learn in this limited amount of time. The Committee decided that the following library skills would be emphasized in all instruction:

- Students demonstrate knowledge of the types of help available from reference librarians including reference help and research consultations
- Students demonstrate they understand the differences between library databases and 'the Web'
- Students demonstrate they understand the differences between scholarly and popular literature
- Students recognize when to use the library catalog and MOBIUS catalog
- Students recognize the ways to obtain journal articles for free while searching in a database
- Students modify their search strategies using keywords, truncation, and Boolean “AND”
- Students can correctly identify parts of a journal citation
- Students recognize the Libraries’ homepage is a gateway to diverse amounts of information

**Control Factors:**

*Librarian Instructor:* To insure consistency in instruction styles and content, the same librarian taught all of the classes included in the LIA population.

*Population:* Instruction was limited to students enrolled in English 3100 (Advanced Expository Writing) in the Spring Semester 2007, Fall Semester 2007, and Spring Semester 2008. Pre and posttest scores were kept confidential.
Database: The decision was made to teach one database, Academic Search Premier, for all English 3100 sessions. All questions regarding databases on the LIA referred to searching in Academic Search Premier.

Test Variables:

Students enrolled in English 3100 varied in status from sophomore to senior. In addition, students enrolled in English 3100 had varying levels of information literacy skills. For some, the session was their introduction to library services, while others may have attended one or more library instruction sessions in other courses or at other colleges/universities.

One variable which the Library Instruction Survey Committee could not control was the timing of instruction. While hopefully most instruction occurred at the point of need (an assignment had been given which required library skills), the timing of each session depended on the class instructor.

Test Construction:

A seventeen question assessment (LIA) was constructed based on the chosen ACRL goals and objectives. A terminal objective was selected from the IS Objectives for each learning outcome (see Appendix A).

“The learning outcomes to be measured by a test are most useful … when they are stated as a terminal performance that is observable. That is, they should clearly indicate the student performance to be demonstrated at the end of the learning experience.”

Test Item Review:

Considerable time was spent revising the LIA questions to meet the criteria outlined by Gronlund in How To Make Achievement Tests and Assessments. He stresses that each “item type [should be] appropriate for the particular learning outcome to be measured” and that “the difficulty of the item [is] appropriate.”

The construct of Question 4 was a particular concern to the Committee. Hernon and Dugan caution against “faulty wording of a question” saying that clues within answer choices could help students choose the correct response. Question 4 asked students what resource they would use to locate books in the UMSL Libraries. The UM-St Louis Library Catalog is referred to on both the UMSL Libraries’ homepage and in library instruction sessions as the “library catalog.” However, the committee felt that by including the answer choice “library catalog” that students that were unsure of where to locate books would be tipped off by the term library. The answer choice “online catalog” was used instead.

Methodology:

Each pretest was administered during the class period preceding library instruction. The follow-up posttest was administered near the end of the semester. It was important to leave sufficient time between instruction and the posttest to determine students’ understanding, application, and retention of instruction. Results of the pre and posttests were compared to find areas that needed more instruction and areas where improvements had been made.
**LIBRARY INSTRUCTION ASSESSMENT (LIA) RESULTS:** *(LO = Learning Objective)*

Knowledge of Reference Services:

**LIA Question 1 (LO1) & Question 14 (LO1, LO5):** The Survey Committee recognized that perhaps the most essential elements of all library instruction is that students identify the Reference Desk/Reference Librarians as a resource for obtaining research help.

![Bar chart showing knowledge of reference services](chart)

The great majority of students in both pre and posttests demonstrated knowledge of where to find reference help.

Knowledge of Database Use:

**LIA Questions 8 (LO2):** Students identified the best source for finding a scholarly article. Choices included: Web search engine, Wikipedia, Google, Library database and Library catalog. There was an 11% increase of students who chose the option “Library database” following library instruction. (Pretest 83% / Posttest 94%)

![Bar chart showing knowledge of database use](chart)

**LIA Question 3 (LO6):** Pre and posttest results showed that students were informed about finding journal articles in print on the Libraries’ shelves, full text in a library database, and awareness of Interlibrary Loan increased by 14%. However, 40% of students still thought they could “buy” articles through the UM system.
Library Catalog and MOBIUS:

**LIA Questions 4 (LO4) and 14 (LO9):** As discussed in the aforementioned Test Construction: Test Items Review, confusion about the substitution of the words 'online catalog' for the more common term 'library catalog' may have skewed the Question 4 final results. Before library instruction only 17% of students identified the ‘online catalog’ as the place to search for books but that number improved after library instruction to 33%. The committee felt that this percentage did not reflect students’ actual knowledge of where to search for books, especially when the results for Question 4 were compared with the results for Question 14. (When referred to the UMSL Libraries’ homepage, 90% of pretest and 93% of posttest responses correctly identified the “Library Catalog” as the place to find “Books available in our campus Libraries.”) In retrospect, Question 4 should have been worded differently. The results of Question 4 show the importance of using consistent terminology.

**LIA Question 7 (LO4):** An additional goal of instruction was to inform students about MOBIUS, the statewide consortium of academic libraries in Missouri. Posttest results show that significantly more students knew when to use the MOBIUS library catalog. In addition, the number of students who said they didn’t know when to use MOBIUS decreased by 21%.

**LIA Questions 2(LO2), 6 (LO3), and 11 (LO8):**

**Q.2, Q.6, Q.11:** Pre and posttest results support that students both, before and after instruction, had a good grasp of the following concepts: understanding the differences between library databases and 'the Web' (Question 2), understanding the differences between scholarly and popular literature (Question 6), and correctly identifying parts of a journal citation (Question 11).
Questions Requiring Students to Apply Concepts:

Three key search strategies: *keywords*, *truncation*, and *Boolean “AND”* were emphasized in the library instruction sessions. These strategies help students search more efficiently and maximize search results. While most of the questions on the LIA required students to *recall* information presented in the library session, four of the LIA test questions were designed to assess students’ ability to *apply* the above search strategies to obtain the best search results. “Apply” is identified as one of the five cognitive processes which require transfer of knowledge.\(^{\text{xii}}\)

“Two of the most important educational goals are to promote retention (*recall*) and to promote transfer (which, when it occurs, indicates meaningful learning). Retention is the ability to remember material at some later time in much the same way as it was presented during instruction. Transfer is the ability to use what was learned to solve new problems, to answer new questions, or to facilitate learning to new subject matter.”\(^{\text{xiii}}\)

**LIA Questions 5, 9, 10, 12, 13 (LO7):**

![LIA - Knowledge of how to use Truncation, Keywords and Boolean "AND"
(% rounded to nearest whole number, n=242)](chart1)

<table>
<thead>
<tr>
<th>Question</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q.13 (Recall) - Results of using truncation</td>
<td>67%</td>
<td>82%</td>
<td>14%</td>
</tr>
<tr>
<td>Q.10 (Apply) - Identify Keywords</td>
<td>94%</td>
<td>94%</td>
<td>0%</td>
</tr>
<tr>
<td>Q.9 (Apply) - Boolean &quot;AND&quot;</td>
<td>87%</td>
<td>87%</td>
<td>0%</td>
</tr>
<tr>
<td>Q.12 (Apply) - Boolean &quot;AND&quot;</td>
<td>41%</td>
<td>61%</td>
<td>20%</td>
</tr>
</tbody>
</table>

**LIA Q. 15, 16, 17 - Students’ Perception of Skill Using KEYWORD, Boolean "AND", and TRUNCATION**

<table>
<thead>
<tr>
<th>Question</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q.15 - Identify Keywords</td>
<td>75%</td>
<td>86%</td>
<td>11%</td>
</tr>
<tr>
<td>Q.16 - Combine with “AND”</td>
<td>90%</td>
<td>90%</td>
<td>0%</td>
</tr>
<tr>
<td>Q.17 - Use Truncation</td>
<td>58%</td>
<td>77%</td>
<td>19%</td>
</tr>
</tbody>
</table>

*NO Strongly Disagree Posttest Results*

**LIA Q. 15, 16 and 17** asked students to rate the perception of his/her ability to use the following concepts: *keyword searching*, combining terms using Boolean “AND”, and *truncation*, respectively. In general, the results from the pre and posttests indicated that students felt that their understanding of these concepts had greatly increased following the library instruction session.
**Student Library Instruction Survey: (SLIS)**

The *Student Library Instruction Surveys* were sent to all classes receiving library instruction during the Fall Semester 2007. This survey focused on how students *perceived* their library skills following library instruction. Did students feel that their library skills were enhanced after attending a library session? In addition, did students think they could retain the knowledge and use it in the future on a project requiring research?

All of the Surveys were administered at the end of the semester. The Committee felt it was important to determine if students not only learned something during the session, but if they also retained knowledge which could be used on a project requiring research.

**Student Survey Variables:**

*Instructor:* All UM-St. Louis librarians at the Thomas Jefferson or Ward Barnes Libraries who taught library instruction sessions during the Fall 2007 sessions.

*Population:* Student status ranged from freshmen to PhD level. Of the 807 students who completed the survey 15% were freshman, 9% Sophomores, 40% Juniors, 27% Seniors, 8% Graduate, and less than 1% Other. Students ranked the number of previous instruction sessions they had attended. The percentages are as follows: 50% - None, 41% - 1-2 sessions, 8% - 3-4 sessions, 1% - 5 or more sessions.

*Databases:* A wide variety of databases were taught from a general database such as *Academic Search Premier* to subject specific databases such as *ERIC* and *PsycINFO*.

*Timing of instruction:* Faculty determined the timing of instruction. Some faculty requested instruction the first day of class, while other faculty waited until students had an assignment requiring research.

*Instructional Setting:* Instructional settings varied from lecture and demonstration by a librarian in a classroom equipped with a computer / projector / screen to an interactive demonstration with hands-on practice for students in a computer lab.

**Results of Student Survey:** The SLIS required all students to enter their academic status and number of previous library instruction sessions attended. Students who *did not attend* a Fall Semester 2007 instruction session were requested to stop at this point.

### SLIS Q. 3 & 4 Rank Knowledge of Doing Research In a Library Before and After Library Instruction

<table>
<thead>
<tr>
<th></th>
<th>Before Library Instruction</th>
<th>After Library Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginner</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Intermediate</td>
<td>45%</td>
<td>22%</td>
</tr>
<tr>
<td>Advanced</td>
<td>46%</td>
<td>67%</td>
</tr>
</tbody>
</table>

(% rounded to nearest whole number, n=807)

**SLIS Questions 3 & 4:** Significantly, the total number who considered themselves at the *Intermediate* or *Advanced* level following library instruction was 89%.
Results for **SLIS Questions 5-8**: (% rounded to nearest whole number, n=807)

**Q 5.** *The library instruction session was helpful for my class assignment?*

77% **Strongly Agree/Agree**

**Q 6.** *I learned about library resources that may help me with other classes?*

86% **Strongly Agree/Agree**

**Q 7.** *Did the library session introduce you to new concepts for finding information?*

82% **YES**

**Q 8.** *After attending the instruction session are you still having problems in the library?*

75% **NO** 25% **YES**

*Only* the 25% of students who replied **YES** to Question 8 were asked to complete six additional questions (**SLIS Questions 9-14**) to pinpoint areas where they perceived they were still having difficulties.

### SLIS Q. 9-14 After attending the instruction session are you still having problems in the library?

*Students could choose more than one problem area*

<table>
<thead>
<tr>
<th>Problem Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q. 9 Knowing where to get help in the library</td>
<td>9</td>
</tr>
<tr>
<td>Q. 10 Understanding how to identify and combine search terms when doing research</td>
<td>16</td>
</tr>
<tr>
<td>Q. 11 Finding books related to your topic</td>
<td>12</td>
</tr>
<tr>
<td>Q. 12 Finding articles related to your topic</td>
<td>13</td>
</tr>
<tr>
<td>Q. 13 Using electronic databases to locate articles</td>
<td>14</td>
</tr>
<tr>
<td>Q. 14 Obtaining library materials not owned by UMSL</td>
<td>13</td>
</tr>
</tbody>
</table>

*(% rounded to nearest whole number, n=807)*

**Student Comments:**

All Students who attended a library instruction session were asked to complete the **Comment Section**. The request for comments was open ended. Students and faculty could comment on any aspect of instruction. The comments and the results for **SLIS Q. 9-14** are considered significant for making recommendations for future library instruction.
**Comment Codes:**

<table>
<thead>
<tr>
<th>Positive:</th>
<th>Negative:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor: Easy to pay attention to, well organized, professional, dynamic, speaker enthusiastic</td>
<td>Boring, went on tangents</td>
</tr>
<tr>
<td>Session: Overall session helpful</td>
<td>Overall session not helpful</td>
</tr>
<tr>
<td>Databases: Learned how to find information using UMSL Databases, learned which Databases to use</td>
<td>Confusing, wanted to know more about other databases</td>
</tr>
<tr>
<td>Repeat Session: Information repeated but still useful, good refresher class</td>
<td>Session required too often</td>
</tr>
<tr>
<td>Handouts: Handout useful, handout would be used in the future</td>
<td>Handout not helpful or no handout</td>
</tr>
<tr>
<td>Length of Session: Students either needed more instruction time or the session was too long, boring</td>
<td></td>
</tr>
<tr>
<td>Hands On: Would have learned better if the session had been hands-on</td>
<td></td>
</tr>
<tr>
<td>Pacing: Presentation was too fast, speaker talked too fast</td>
<td></td>
</tr>
<tr>
<td>Retention: Students had difficulty remembering how to use library resources (databases, library catalog) when researching a paper</td>
<td></td>
</tr>
<tr>
<td>Timing of Session: Session was too early or too late in the semester to help with assigned research paper, students wish a session had been offered earlier in college career (freshman year)</td>
<td></td>
</tr>
<tr>
<td>Already Knows: Felt session repeated information from previous library instruction sessions</td>
<td></td>
</tr>
<tr>
<td>Overload: Felt overwhelmed by the amount of information presented, too many examples, confusing</td>
<td></td>
</tr>
<tr>
<td>Catalog: Felt could use the library catalog after session</td>
<td></td>
</tr>
<tr>
<td>Library Use: Learned how to better use the library resources, learned how to access library resources from home</td>
<td></td>
</tr>
<tr>
<td>Relevant Session: Information presented helped with research paper for this class or with other class papers</td>
<td></td>
</tr>
</tbody>
</table>
Results of the Faculty Library Instruction Survey (FLIS):

In addition to the Student Library Instruction Surveys, the faculty members were also given surveys to complete. Compared to the large number of student surveys, the number of faculty surveys completed was relatively small. As a result of the small number, the faculty surveys were distributed over two semesters. During the Spring and Fall semesters in 2007, 25 and 38 faculty surveys were completed respectively, for a total of 63 faculty surveys.

The faculty survey consisted of 6 questions with a space for written comments at the end of the survey. The first question asked the faculty to indicate which of their classes had attended a library instruction session. Of the 63 completed faculty surveys, 38 of these were for English classes. Other courses included Nursing, Social Work, Sociology, History, Biology, Anthropology, Business, Education, and Psychology.

The second question on the survey asked faculty to indicate where on campus their library instruction sessions were held. The majority of the library instruction sessions, 47 of them, were held in the Thomas Jefferson Library Bibliographic Instruction Room. In addition, 8 sessions were held in South Campus computer classrooms. A few of the sessions were held in various classrooms across Campus.

Below are the results for Questions 3-6 on the survey:

**Question 3:** Was there evidence in assignments handed in after the library instruction session that your students were using more appropriate research sources?

**Question 4:** After the library session, do you feel that your students have a better understanding between a free Web-based resource, such as Google, and a Web-based library database, such as Academic Search Premier (which includes many full-text scholarly journals)?

**Question 5:** The librarian discussed resources that I felt were important for my students.
Question 6 asked faculty members to rank the importance of the following methods of library instruction: hands-on computer instruction at individual work stations; demonstration of online library resources; presentation of print reference materials; and handouts or Web pages created for your class by the librarian. The majority of faculty ranked hands-on computer instruction, demonstration of online resources, and handouts as very important. While the presentation of print reference materials was not ranked as important by many faculty members.

Faculty Comments:

“Thank you so much for all of your help! Not only do the students learn a lot at these sessions, but I learned ways that I can help them. This is a wonderful resource for the students. I hope to bring my writing class for another session in the Fall Semester.”

“I have found the presentations in my class to be extremely valuable. Students, for the most part, are not aware of the difference between the internet and library resources. They also were made aware that the databases are not universally accessible. Finally, the students were encouraged not only to use the print resources in our libraries but also to use the reference librarians as resources.”

“I thought it was well organized, clearly presented, and most helpful to those in attendance. Most had no idea of the quantity of information available.”

 “[Librarian name] is always great! My students enjoyed and learned from the session.”

“Excellent and thorough - even managed to hold their attention - a well-spent hour. This is especially valuable to those who to transfer to UMSL.”

“The presentations by [librarian name] and [librarian name] really make the students understand the passion of research. The students also perceive them as extremely approachable.”

“My students really benefitted from learning about the library databases. They have usually not been exposed to them before and rely on internet sources from Google for ‘scholarly’ information. Learning about the databases really helped them to see the difference and gave them an easy and accessible way to get better sources for their papers.”

“I always appreciate the cooperation and expertise provided by the Barnes Library staff. Thanks to everyone for this service.”

Some of the comments also offered constructive criticism:

“We have not previously used individual work stations but it might be a good thing to try. This class really needs demonstrations and examples tailored to Psychology. [Librarian name] does a great job of this, but other reference librarians don’t always understand the importance of this or exactly how to do this.”

“As a medium-term goal it might be nice to provide some assignments for which students would have to use a variety of library resources (both online and offline). For example, students would have to find a certain article in one of the databases with only a bit of the information provided to them. I guess I’m thinking of a sort of online/offline library treasure hunt, perhaps broadly along disciplines (humanities, social sciences, natural sciences, business, etc.)"
“Timing-wise I think it would be optimal if I could have the library session after students have at least a broad topic idea. Also, I sent my specific assignment to [librarian name] but I'm not sure it was used/referred to during the session.”

Based on the comments provided by faculty members, they seemed to be extremely satisfied with the librarian instruction sessions that were provided for their classes. The overwhelming majority of the comments expressed their positive opinions of the sessions provided by UMSL librarians. A few of the comments also offered constructive suggestions for improving the library instruction sessions. Overall, the FLIS helped us to see which aspects of library instruction sessions faculty members believe are the most effective and also ways in which they could be improved.

Recommendations:

The results the LIA, SLIS, and FLIS revealed much about the information literacy of our students and the ways that students benefitted from our instruction efforts. Students showed noticeable improvement after the library instruction sessions on most test questions. These improvements occurred even for questions that had low scores on the pretests. However, after analyzing the tests, we did identify some concepts that still seemed confusing or problematic to a significant percentage of students. As a result, the Committee has compiled a list of important points to emphasize in library instruction sessions:

- Students need more instruction with Boolean “AND” and truncation. Librarians need to teach both concepts with more detail in library instruction sessions and perhaps come up with supplemental exercises or provide examples and explanations in class handouts.
- Students need to understand when they should use the UMSL and MOBIUS library catalogs.
- Librarians should continue to emphasize all the ways to access journal articles through the UMSL Libraries.
- Librarians should also use consistent terminology when referring to the library catalog and databases.
- Most students appeared to be informed about the help they can receive at the Reference Desk or through the Research Consultation Program. This point still, however, needs to be stressed in library instruction sessions.
- Librarians should provide handouts as needed that cover the points discussed in the library instruction session.

Conclusion:

This assessment process has provided us with much to consider. In addition to the aforementioned recommendations, student and faculty comments on the SLIS and FLIS provided the Committee with additional goals that we feel should be considered for future library instruction. The students’ comments were overwhelmingly positive; many indicated how helpful the library instruction sessions were to their research projects. A significant number, however, wrote that they wished they had attended a library instruction session in other classes or earlier in their college careers. Making the Libraries part of any future University retention initiative, would increase students' awareness of and exposure to the resources available in the University Libraries. Students also commented that their library instruction sessions did not correspond with the due dates of their assignments. Many felt that the sessions were either too close to their due dates or were attended several weeks before their assignments were due. Librarians should continue to communicate with faculty about the importance of timing of the sessions. A
significant number of students and faculty also commented that they would like some sort of active learning during their library instruction sessions. Many felt this would help them retain the information they learned and enable them to apply the concepts that were taught during the session. We recognize, though, that time constraints and class sizes may make hands-on learning difficult, if not impossible.

The results of the LIA, SLIS, and FLIS will have an impact on our future teaching. In addition, the Committee also recognizes the value of basing the LIA on the Information Literacy Competency Standards for Higher Education. The terminal objectives provided us with a valuable foundation for constructing the learning objectives and the LIA test questions. We feel that the majority of our questions accurately assessed students’ knowledge and provided us with the data we need to improve our library instruction. In the future, these tests may need to be revised to meet potential changes in technology and information literacy. However, for the most part, we felt that the LIA, SLIS, and FLIS results accurately reflected the students’ knowledge of library and information literacy and their satisfaction with the instruction they received.

Overall, the LIA, SLIS, and FLIS have revealed much about the information literacy of our students and ways that students benefitted from our instruction efforts. The challenge for the UMSL Libraries is to see how we can improve our library instruction efforts with what has been learned from this assessment process.

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iv Ibid.


vi Ibid.

vii Ibid.


x Gronlund, (1993), 20.

xi Gronlund, (1993), 95.


xiii Lorin W. Anderson and David R. Krathwohl (Eds.), *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom’s Taxonomy of Educational Objectives*, (New York: Longman, 2001), 64.
Appendix A:

*LIA LEARNING OBJECTIVES AND LIA QUESTIONS BASED ON:*

(ACRL), *Information Literacy Competency Standards for Higher Education (2000) & Objectives for Information Literacy Instruction; A Model Statement for Academic Librarians (IS Objectives)*

1) Librarians should always encourage students to ask for help at the reference desk if they are having trouble with their information needs. This is the most important point students can learn from any BI session. The role of the librarian in providing research help will be described.

- **Standard One:** The information literate student determines the nature and extent of the information needed.
  - **Performance Indicator One:** 1.1 The information literate student defines and articulates the need for information.
    - **Outcome d:** 1.1.d. Defines or modifies the information need to achieve a manageable focus
  - **Terminal Objective 6th bullet:** Consists with the course instructor and librarians to develop a manageable focus for the topic.

**Learning Objective 1: LIA Question #1**

Given an overview of services offered by reference librarians, (c), students (a) will choose 2-3 types of services available from reference librarians (reference help, help identifying an appropriate database for a topic, possible search strategies, and Research Consultations) (d), in order to show they understand the types of help available from reference librarians. (b)

2) Emphasize the differences between library databases and 'the Web'.

- **Standard Two:** The information literate student accesses needed information effectively and efficiently.
  - **Performance Indicator One:** 2.1: The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.
    - **Outcome c:** 2.1.c. Investigates the scope, content, and organization of information retrieval systems
  - **Terminal objective 6th bullet:** Identifies the differences between freely available Internet search tools and subscription or fee-based databases.

**Learning Objective 2: LIA Question #2 & Question #8**

Given an overview on the types of information sources available in the *Academic Search Premier* database contrasted with the Web, [c] students [a] will choose three matching responses showing material type available through this database—peer-reviewed, authoritative—and the World Wide Web [d] to show they can distinguish between articles available in the library databases versus materials on the Web.[b]

3) Emphasize the differences between scholarly and popular literature.

- **Standard One:** The information literate student determines the nature and extent of the information needed.
  - **Performance Indicators 2:** 1.2: The information literate student identifies a variety of types and formats of potential sources for information.
    - **Outcome d:** 1.2.d. Identifies the purpose and audience of potential resources (e.g., popular vs. scholarly, current vs. historical)
  - **Terminal objective 1st bullet:** Distinguishes characteristics of information provided for different audiences.

**Learning Objective 3: LIA Question #6**

Following participation in an instruction session covering the *Academic Search Premier* database, [c] students [a] will match 3 phrases and definitions [b] to show they can differentiate between scholarly and popular periodical literature. [d]
4.) Always tell students about MOBIUS.

- **Standard Two**: The information literate student accesses needed information effectively and efficiently.
  - **Performance Indicator Three**: 2.3. The information literate student retrieves information online or in person using a variety of methods.
    - **Outcome c**: 2.3.c. Uses specialized online or in person services available at the institution to retrieve information needed (e.g., interlibrary loan/document delivery, professional associations, institutional research offices, community resources, experts and practitioners)
  - **Terminal Objective 2nd bullet**: Describes various retrieval methods for information not available locally

<table>
<thead>
<tr>
<th>Learning Objective 4: <strong>LIA Question #7</strong></th>
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<tbody>
<tr>
<td>Following participation in an instruction session explaining the use of the library catalogs, [c] students [a] will correctly choose from 2-3 structured responses [b] to show they can recognize when to use the MOBIUS catalog [d]</td>
</tr>
</tbody>
</table>

5.) Always tell students about the research consultation program.

- **Standard One**: The information literate student determines the nature and extent of the information needed.
  - **Performance Indicator One**: 1.1 The information literate student defines and articulates the need for information.
    - **Outcome d**: 1.1.d. Defines or modifies the information need to achieve a manageable focus
  - **Terminal Objective 6th bullet**: Consults with the course instructor and librarians to develop a manageable focus for the topic

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<tr>
<th>Learning Objectives 5: <strong>LIA Question #14</strong></th>
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<tbody>
<tr>
<td>Given an overview of services offered by reference librarians, (c), students (a) will choose four types of services available from reference librarians (reference help, help identifying an appropriate database for a topic, possible search strategies, and Research Consultations) (d), in order to show they understand the types of help available from reference librarians. (b)</td>
</tr>
</tbody>
</table>

6.) Always mention that students can usually acquire any item, whether book or article that they see referenced in library databases with the caveat that it may take awhile for them to receive the item(s). Tell students to ask at the reference desk and a librarian will show them the process for acquiring such materials. Demonstrate Interlibrary Loan if appropriate (i.e., to upper division students, graduate students, etc.).

- **Standard One**: The information literate student determines the nature and extent of the information needed.
  - **Performance Indicator Three**: 1.3. The information literate student considers the costs and benefits of acquiring the needed information.
    - **Outcome a**: 1.3.a. Determines the availability of needed information and makes decisions on broadening the information seeking process beyond local resources (e.g., interlibrary loan; using resources at other locations; obtaining images, videos, text, or sound)
  - **Terminal Objective 2nd bullet**: Uses available services appropriately to obtain desired materials or alternative sources

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<tr>
<th>Learning Objective 6: <strong>LIA Question #3</strong></th>
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<tr>
<td>Following attendance at an instruction session covering Article Linker and mentioning ILL, (c) students (a) will recognize three sources to obtain journal article for free while searching in a database (“Go To” Article or Journal link to the left of a database name, available in print in the UMSL libraries, or through ILL) (d) in order to demonstrate that they can obtain journal articles which are freely available through the UMSL libraries.(b)</td>
</tr>
</tbody>
</table>

7.) Students learn how to review their search results and to modify their search strategy using keywords, truncation, and Boolean “AND”.

- **Standard Two**: The information literate student accesses needed information effectively and efficiently.
Performance Indicators Two: 2.2: The information literate student constructs and implements effectively-designed search strategies.

- **Outcome d: 2.2.d.** Constructs a search strategy using appropriate commands for the information retrieval system selected (e.g., Boolean operators, truncation, and proximity for search engines; internal organizers such as indexes for books)
  - **Terminal objective 6th bullet:** Demonstrates an understanding of the concept of keyword searching and uses it appropriately and effectively.

---

Learning Objective 7: *LIA Question #9*

Following attendance in an instruction session on keyword searching in the library catalog and the Academic Search Premier database, (c) the student (a) will choose two keywords appropriate for a topic (d) to demonstrate that they understand the concept of keyword searching and can use it appropriately and effectively. (b)

- **Terminal objective 2nd bullet:** Demonstrates an understanding of the concept of Boolean logic and constructs a search statement using Boolean operators.

---

Learning Objective 7: *LIA Question #5 & Question #12*

Following attendance at an instruction session explaining the use of the Academic Search Premier database and the library catalog, [c] students [a] through 2 structured response questions, will select the appropriate Boolean operator, “and” [d] in order to demonstrate their ability to recognize the appropriate use of the Boolean operator “and”. [b]

- **Terminal objective 7th bullet:** Demonstrates an understanding of the concept of truncation and uses it appropriately and effectively.

---

Learning Objective 7: *LIA Question #10 & Question #13*

Given an overview of the use of the truncation symbol in the library catalog and Academic Search Premier, [c] students[a] through a structured response, will identify a correct search word using the truncation symbol (asterisk) [d] to demonstrate that they know how to expand a search through truncation. [b]

---

8.) Students recognize the parts of a periodical citation.

- **Competency Standard Two:** The information literate student extracts, records, and manages the information and its sources.
  - **Performance Indicator Five: 2.5:** The information literate student extracts, records, and manages the information and its sources.
  - **Outcome d: 2.5.d:** Records all pertinent citation information for future reference
  - **Terminal objective** Identifies and understands the parts of a bibliographic citation.

---

Learning Objectives 8: *LIA Question #11*

Following participation in an instruction session explaining a journal citation [c] the students [a] will correctly identify, from 2-3 structured, matching responses, the journal title, article title, and volume [d] in order to show they can correctly identify parts of a journal citation.[b]

---

9.) Understands the library homepage is a gateway to diverse amounts of information.

- **Competency Standard Two:** The information literate student accesses needed information effectively and efficiently.
  - **Performance Indicator One: 2.1:** The information literate student selects the most appropriate investigative methods or information retrieval systems for accessing the needed information.
  - **Outcome c: 2.1.c.** Investigates the scope, content, and organization of information retrieval systems
  - **Terminal Objective bullet 3:** Identifies what types of information are contained in a particular system (e.g., all branch libraries are included in the catalog; not all databases are full text; catalogs, periodical databases, and Web sites may be included in a gateway).

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Learning Objective 9: *LIA Question # 4*

Given an overview of the UMSL Libraries homepage, [c] students [a]will correctly identify from a list, 3 information sources or services found on the UMSL Libraries homepage (the library catalog, databases, and research consultation)[d] to show that they are aware of the diverse amounts of information accessible from the UMSL libraries homepage.[b]
Appendix B:

Library Instruction Assessment

Student ID: ___________________________________

Status (circle only one):
  e. Graduate  f. Other

How many Library sessions have you attended for a class at UMSL? (circle only one)
  a. None
  b. 1-2 sessions
  c. 3-4 sessions
  d. 5 or more sessions

All responses will be kept confidential
1. **You can go to the Reference Desk to:** (Circle all that apply)
   - A. Check out books
   - B. Get help in developing a search strategy
   - C. Get help with creating a PowerPoint presentation
   - D. Identify databases to search for articles on your topic
   - E. Get help requesting books and articles not available at the UMSL Libraries

2. Enter the letter of the most appropriate match from the left into the box for EACH of the statements on the right.

   - May allow you to limit your search to peer reviewed (refereed) journals
     - A. Library Databases
   - May lack objectivity or may be biased
     - B. Internet/Web
   - May not be reliable information
   - Easier to get high quality information
   - After making it available, the author can create, change, or delete information

3. **Choose the possible ways an UMSL student can access an article through the UMSL Libraries:**
   (Circle all that apply)
   - A. on the libraries’ shelves
   - B. full text online in a library database
   - C. buy it through the UM system
   - D. use Interlibrary Loan
   - E. if not owned by UMSL, you can’t access it

4. **To locate books in the UMSL Libraries use...**
   (Circle one)
   - A. Amazon.com
   - B. JSTOR
   - C. Academic Search Premier
   - D. Online Catalog
   - E. c and d

5. **For the research question:** “What was the role of women in the Civil War?”
   ... which option will retrieve the best results in a database search?
   (Circle one)
   - A. women in civil war
   - B. what was the role of women in the civil war
   - C. civil war and women
   - D. civil war women
6. Enter the letter of the most appropriate match from the left into the box for EACH of the statements on the right.

| A. Magazine Article              | News events in a timely manner |
| B. Scholarly Article             | Informs and entertains the general public |
|                                 | Bibliography/References        |
|                                 | Peer Reviewed/Refereed         |
|                                 | Written by reporters           |

7. Use MOBIUS when: (Circle all that apply)

   A. an UMSL book is currently checked out of the library
   B. you are trying to find an article
   C. you want to request books that aren’t owned by the UMSL Libraries
   D. you want to go to a local academic library to check out a book
   E. you need research help from a reference librarian
   F. I don’t know

8. Your instructor wants you to find a scholarly article. Circle the best choice to find the article:

   A. Web search engine
   B. Wikipedia
   C. Google
   D. Library database
   E. Library catalog

9. Circle the 2 most important keywords for the research question below:

   How does technology enhance an education program?

   A. program
   B. enhance
   C. technology
   D. how
   E. education

10. Circle the truncated keyword that will retrieve:

    political **but NOT** polite

    (Circle one)

   A. polit*
   B. politic*
   C. pol*
   D. politics*
   E. None of the above
11. Below is a typical journal citation from a database:


Enter the letter of the most appropriate match from the left into the box for EACH of the parts of the citation on the right.

A. 2006
B. A Form of Child Abuse in Schools
C. 13
D. 30
E. Aluedse, Oyaziwo
F. Bullying in Schools: A Form of Child Abuse in Schools
G. Educational Research Quarterly
H. 22434163

12: What results would you retrieve if you typed the search:

*girls* AND *esteem* AND *education*

(Circle one)

A. Records that contain 2 of the keywords: *girls* *esteem* *education*
B. Records that contain 3 of the keywords: *girls* *esteem* *education*
C. Records that contain 1 of the keywords: *girls* *esteem* *education*
D. None of the above answers

13. Circle the BEST answer that completes the following statement:

“By using the technique of truncation (example: histor*) in a database search, you would:…”

(Circle one)

A. Narrow your search to include less information
B. Combine terms with *and*
C. Broaden your search to include more information
D. Limit your search to include less information
E. None of the above
14. Refer to the UM-St. Louis Libraries’ homepage above. Enter a letter from the left into the most appropriate box on the right below:

A. Books available in our campus libraries

B. An indepth one on one appointment with a librarian

C. Academic Search Premier

15. I can successfully identify the most appropriate keywords when I research a topic.

__ Strongly Agree __Agree __Neutral __Disagree __Strongly Disagree

16. I can successfully combine search terms using AND (also called “Boolean AND”).

__ Strongly Agree __Agree __Neutral __Disagree __Strongly Disagree

17. I can successfully use truncation symbols (e.g., * ) to find variants of search words (e.g., teach, teacher, teaching) when searching in a database.

__ Strongly Agree __Agree __Neutral __Disagree __Strongly Disagree
Appendix C:

STUDENT LIBRARY INSTRUCTION SURVEY

The purpose of this survey is to determine the effectiveness of the library instruction session you attended for this class earlier in the semester.

Please complete and return this brief survey.

For each of the questions below fill in only one choice on the green answer sheet.

1. Status (fill in only one):
   e. Graduate   f. Other

2. How many other Library sessions have you attended for a class at UMSL? (fill in only one)
   a. None
   b. 1-2 sessions
   c. 3-4 sessions
   d. 5 or more sessions

If you did not attend this session, please stop here.

3. BEFORE coming to this library session, how would you have ranked your knowledge of doing research in a library? (fill in only one)
   a. Beginner
   b. Intermediate
   c. Advanced

4. AFTER having attended this particular library session, how would you rank your knowledge of doing research in a library? (fill in only one)
   a. Beginner
   b. Intermediate
   c. Advanced

5. The library instruction session was helpful for my class assignment. (fill in only one)
   a. Strongly agree
   b. Agree
   c. Undecided
   d. Disagree
   e. Strongly disagree
6. I learned about library resources that may help me with other classes. *(fill in only one)*
   a. Strongly agree
   b. Agree
   c. Undecided
   d. Disagree
   e. Strongly disagree

7. Did the library session introduce you to new concepts for finding information?
   a. Yes  b. No

8. After attending the instruction session are you still having problems in the library?
   a. Yes (continue with questions 9-14)
   b. No (jump to the attached, yellow comment sheet)

9. Knowing where to get help in the library
   a. Yes  b. No

10. Understanding how to identify and combine search terms when doing library research
    a. Yes  b. No

11. Finding books related to your topic
    a. Yes  b. No

12. Finding articles related to your topic
    a. Yes  b. No

13. Using electronic databases to locate articles
    a. Yes  b. No

14. Obtaining library materials not owned by UMSL
    a. Yes  b. No

Please give us your comments about the library session:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________
Appendix D:

FACULTY LIBRARY INSTRUCTION SURVEY

The purpose of this survey is to determine the effectiveness of the library instruction session(s). Please complete this survey and return it to the library in the attached self-addressed envelope. We appreciate your cooperation.

Please write your responses on this sheet.

1. For which course was the library instruction session(s) held? _______________________

2. The library instruction session(s) was held at (choose all that apply):
   a. Ward E. Barnes Library:
      _____South campus computer lab, or
      _____South campus classroom
   b. Thomas Jefferson Library:
      _____Library instruction room (#315), or
      _____North campus classroom
   c. Other:
      _____Off-campus location or for a distance education class

3. Was there evidence in assignments handed in after the library instruction session that your students were using more appropriate research sources?
   a. Yes______  b. No______  c. No opinion______  d. Not applicable______

4. After the library session, do you feel that your students have a better understanding between a free Web-based resource, such as Google, and a Web-based library database, such as Academic Search Premier (which includes many full-text scholarly journals)?
   a. Yes______  b. No______  c. No opinion______  d. Not applicable______

5. The librarian discussed resources that I felt were important for my students.
   a. Strongly agree ______  b. Agree______  c. No opinion______
   d. Disagree______  e. Strongly disagree______  f. I was not present______

Please continue on the other side.
6. Please rank the importance of the following methods of library instruction on a scale of 1-5 (1 = most important and 5 = least important).

   Hands-on computer instruction at individual work stations
   _____ 1 _____ 2 _____ 3 _____ 4 _____ 5

   Demonstration of online library resources
   _____ 1 _____ 2 _____ 3 _____ 4 _____ 5

   Presentation of print reference materials
   _____ 1 _____ 2 _____ 3 _____ 4 _____ 5

   Handouts or Web pages created for your class by the librarian
   _____ 1 _____ 2 _____ 3 _____ 4 _____ 5

   Other (please state): __________________________________________
   _____ 1 _____ 2 _____ 3 _____ 4 _____ 5

Please use the space below for any comments about the library instruction session(s):

COMMENTS:________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________