Source Cookin’, Learning to Search Using Boolean

(Boolean Instruction Unit)

Revised December 17, 2008
Hanalei Abbott, Frans Albarillo, & Amanda Hahn
LIS 665 Teaching Information Technology Literacy
Professor Diane Nahl
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Overview

As a part of Dr. Diane Nahl’s Fall 2008 Teaching Information Literacy course, Hanalei Abbott, Frans Albarillo, and Amanda Hahn planned, designed, taught, and assessed a 70-minute lesson on Boolean searching to 14 freshmen. The freshmen were part of a semester long LIS 100 class taught by a regular faculty librarian. The purpose of this paper is to give the audience the ability to replicate this lesson by describing our lesson, ideas and theories behind its design, and the materials that were needed to implement it.

Introduction

The first part begins with our teaching goals, which are based on national information literacy standards established by Association of College and Research Libraries or ACRL. Out of the five “Standard, Performance Indicators, and Outcomes” (SPIOs) and we focused on the second standard “the information literate student accesses needed information effectively and efficiently” (American Library Association, 2000). The theoretical aspects of our lesson were explored in Dr. Nahl’s class in a workshop environment. With feedback from group work and Dr. Nahl, we applied the Nahl-Jakobovits (1993) ACS taxonomy, which is a behavioral framework that adds affective (A), cognitive (C), and sensorimotor (S) dimensions to the instructional design process. In this paper, we outline the affective, cognitive, and sensorimotor dimensions for all three SPIOs and explained how we intended to measure them.

There is a detailed section on needs assessment. This part was crucial in integrating our lesson with the LIS 100, which is a semester long course. Also in this paper, we include our lesson plan, a list of class materials, and a brief evaluation of the lesson. The conclusion is a memo that informs administrations of the importance of information literacy. It defines what information literacy is and how our lesson works to support information literacy at various levels, including institutional, departmental, library missions, and course work requirements at the University of Hawai‘i system. The appendices include our assessment questions, worksheets, and handouts.
1. Specific Goals of the Lesson:

a. LIS 100 students will learn to develop appropriate search strategies that will allow them to;

b. query Academic Search Premier via EBSCOhost and MLA (Modern Language Association) International Bibliography via Cambridge Scientific Abstracts (CSA);

c. create, modify, and reformulate search queries according to their information needs;

d. compile a list of highly relevant sources that will help them in the final stages of a literature review about student-teacher relationships.

1.1 ACRL Performance Indicator 2: The information literate student constructs and implements effectively designed search strategies.

1.1.1 Outcome (ACRL 2.2.b): Students will identify keywords, synonyms and related terms based on the lesson's focusing question.

Cooperating with their (affective) group members students will perform concept analysis on their focusing question, formulate (cognitive) lists of keywords, synonyms, and terms to find materials related to the topic, and then write (sensorimotor) a list of possible search terms for MLA and Academic Search Premier.

Task: Lesson 1/Activity 1 – students brainstorm key words, synonymous terms, and related concepts and write down on worksheet. For activity 1 instructions see appendix B.

Description:

1) Amanda presents lesson. Amanda's objective will be to teach the students how to perform concept analysis on their search question (whatever it may be) and develop lists of keywords, synonyms, and related terms from that question.
   a) PowerPoint
   b) helping video - http://www.youtube.com/watch?v=av5PKePIkcE
2) Students work together to form a list of keywords, synonyms and related terms that have to do with their research question.
3) Students announce their keywords, synonyms, and related terms to the class.

1.1.2 Affective Outcome: Students will cooperate with their own group to perform concept analysis on the topic of student-teacher relationships.

Assessment Item: Each instructor will sit in on one group and evaluate each student's group cooperation by watching and listening the students' interactions.
They will rate each student on an observation form based on a three-point scale (1 = low participation [sits there, rarely speaks], 2 = moderate participation [somewhat engaged, speaks occasionally] 3 = high participation [actively engaged, contributes ideas to discussion]).

**Measurement Objective:** 90% of students will achieve a score of 3 based on the instructors' rating of their performance.

1.1.3 **Cognitive Outcome:** Students will formulate a list of multiple keywords, synonyms, and related terms for their focusing question about student-teacher relationships.

**Assessment Item:** (Pre/post test question):

1.) If your teacher wanted you to find scholarly information and write a paper on Japanese tea ceremony, what would you do first?

   a) go to Google and type in "Japanese tea ceremony"
   b) go to Academic Search Premier and type in "Japanese tea ceremony"
   c) think of different search terms that would have to do with my topic  
      (correct answer)
   d) go to Yahoo and type in "Japanese tea ceremony"

**Measurement Objective:** To have 90% of students answer "c" in the post test.

**Assessment Item:** (Pre/post test question):

2.) What term would be the best synonym for wheat bread:

   a) rye bread
   b) toast
   c) muffin
   d) brown bread (correct answer)

**Measurement Objective:** To have 90% of students answer "d" in the post test.

1.1.4 **Sensorimotor Outcome:** Students will write a list of possible search terms for Academic Search Premier and MLA.

**Assessment Item:** Students will work together to write keywords, synonyms, and related terms on the worksheet. They will report some of their results to the class and instructors will evaluate whether they understood the assignment and successfully completed the task. Instructors will collect the worksheets in order to further evaluate them.

**Measurement Objective:** 90% of the students complete their worksheet and create a word list of keywords, synonyms, and related terms.
1.2 ACRL Performance Indicator 2: The information literate student constructs and implements effectively designed search strategies.

1.2.1 Outcome (ACRL 2.2.d): Students construct a search strategy using appropriate Boolean and truncation commands for Academic Search Premier via EBSCOhost and MLA via CSA.

Selecting (affective) from their list of keywords, synonyms and related terms, students will develop (cognitive) search strings, and apply (sensorimotor) Boolean operators AND/OR/NOT and simple truncation.

Task: Lesson 2/Activity 2 - creating search queries  For activity 2 instructions see Appendix B.

Description:

1) Frans presents Boolean Operators AND OR NOT and Simple Truncation. Frans' objective will be to show students how to combine terms using Boolean and turn them into search strings.
   a) PowerPoint on Venn Diagram Animation and Simple Truncation Slide
   b) YouTube Video: http://www.youtube.com/watch?v=xSZps3NH-M

1.2.2 Affective Outcome: Students will select search terms from their list of previously generated keywords, synonyms and related terms.

Assessment Item: Instructors will observe students select keywords, synonyms, and related terms from Activity 1 and use these terms in Activity 2.

Measurement Objective: 90% of the search queries generated in Activity 2 will contain keywords, synonyms and related terms from Activity 1.

1.2.3 Cognitive Outcome: Students will develop numerous search strings.

Assessment Item: Instructors will observe students develop numerous search strings in Activity 2.

Measurement Objective: 90% of the students will develop at least 3 search strings and write them on their worksheets.

1.2.4 Sensorimotor Outcome: Students will correctly apply Boolean AND/OR/NOT and simple truncation in their search terms in Exercise 2.

Assessment Item (Pre-post test question):

3.) If you were looking for articles in Academic Search Premier or MLA about Washington cherries, choose the best Boolean search:
a) Washington AND Cherries (**correct answer**)  
b) Washington OR Cherries  
c) Washington NOT Cherries  
d) What are Washington cherries?

**Measurement Objective:** 90% or more of students will answer "a” in post test.

4.) In Academic Search Premier, you are looking for information about different ways to eat apples. Choose the best search strategy that effectively uses simple truncation:  
   a) eat* AND appl* (**correct answer**)  
   b) eat* OR apple  
   c) eating NOT appl*  
   d) eats AND apple*  

**Measurement Objective:** 90% or more of students will answer "a” in the post test.

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**1.3 ACRL Performance Indicator 4:** The information literate student refines the search strategy if necessary.

**1.3.1 Outcome (ACRL 2.4.a):** Students will assess the quantity, quality, and relevance of their search results to determine whether alternative information retrieval systems or investigative methods should be utilized.

*Picking* (affective) pertinent search strings likely to yield items relevant to their research question, students will *analyze* (cognitive) the results of their queries in Academic Search Premier and MLA databases, *modifying* (sensorimotor) their search queries to increase the relevancy of items they retrieve.

**Continued Task: Lesson 2/Activity 2 - refining/evaluating search queries.** For activity 2 instructions see appendix B

Description:

1) Hanalei presents how to evaluate and refine search queries so students can find results that are relevant to their research question.  
   a) PowerPoint (on number of results, determining relevancy, orientation to layout of Academic Search Premier and MLA)

**1.3.2 Affective Outcome:** Students will pick pertinent search strings from the previous exercise likely to yield items relevant to their research question.
Assessment Item: Instructors will observe students choosing 3 different germane search strings and applying them in both databases in Activity 2.

Measurement Objective: 90% of the search queries utilized in Activity 2 will employ terms generated as a result of Lessons 1 and 2 and Activity 1.

1.3.3 Cognitive Outcome: Students will analyze the results of their queries in the Academic Search Premier and MLA databases in terms of both number of results returned and the relevancy of the items.

Assessment Item: Students should be able to list on the worksheet reasons why they determined the search results to be relevant or not, and explain this reasoning to the class.

Measurement Outcome: 90% of the students should be able to demonstrate an understanding of the concept of relevancy as evidenced in the pre-post test questions, group presentations and worksheets.

Additional Assessment Items: (Pre/post test questions):

5.) If you searching a database like Academic Search Premier, which number of results would be the best?
   a) 0
   b) 100
   c) 1,000
   d) It depends (correct answer)

Measurement Objective: 90% of students will select “d” in the post test.

6.) If you are searching for information about the history of pizza, which item would be the most relevant?

   a) An Italian cookbook
   b) A newspaper article about the rising cost of anchovies
   c) A book about food in 19th century Italy (correct answer)
   d) A Pizza Hut menu

Measurement Objective: 90% of students will answer "e" in the post test.
1.3.3 Sensorimotor Outcome: Students will modify their search queries to increase the relevancy of items they retrieve.

**Assessment Item:** Students will work in groups to apply the search strings they have created in the Academic Search Premiere and MLA databases. They will keep track on the worksheet of the number and relevancy of results for each search string. They will report back to the class about which search strings they think were the best and why. The worksheet will be collected after the lesson so that the instructors can further evaluate the student’s efforts.

**Measurement Objective:** 90% of the students will complete their worksheets and demonstrate that they have performed multiple different search queries in various databases. The ratings and explanations of relevancy they provide should reveal that they understand that the usefulness of an adaptive search strategy.
2. Needs Assessment Results

There were three forms of needs assessments conducted prior to designing our lesson. The first was a formal needs assessment form, handed out by the LIS 100 instructor. The form asked the following questions:

i. When you needed information for anything, how did you decide what kind and how much information you needed?
ii. How did you find the information you needed (describe the process in detail)?
iii. Once you find information how do you decide which information is the best information?
iv. Describe a situation where your use of information changed your opinion or perspective about something
v. What do you need to do to communicate information effectively so that the others understand what you have learned from the information you have gathered
vi. Are there legal and ethical issues about using information? If so, what are they?

The second and more informal needs assessment was an in-class observation conducted by one of our group members on September 24, 2008. The third assessment, also informal, occurred when we spoke with the instructor group that preceded us. We will only discuss the first two assessments here - aspects of the third conversation can be found in Frans' individual report.

2.1 Formal Need Assessment Forms

The assessment forms have six questions and are designed to test for information literacy competence. A review of the students' responses reveals a wide range of information literacy skills. Some students have only a very basic awareness of how to look for information while others have more advanced skills. Advanced skills can be defined as students that carefully consider their information needs, an ability to search and evaluate multiple sources. About half of the students wrote that they typically look for information before thinking very carefully about the topic. Only a few students showed advanced skills. More basic skills included their ability to search the Internet. More than half of them mentioned the Internet was the first (and sometimes only) place that they look for information and the majority of these specifically mentioned Google. Several also made reference to looking for information at the library, but these comments were often vague. Given the wide spectrum of skill levels displayed in the forms, we decided it was better to teach fundamental concepts.

2.2 Observational Needs Assessment

Amanda performed an in-class needs assessment of the LIS100 class on September 24, 2008, when students presented in groups about Hawaii Voyager, Google, and
EBSCOhost's Academic Search Premier. One group presented for each tool. The students did not have any formal LIS100 instruction about any of these searching tools prior to their presentations. The presentations were about fifteen minutes each, and within them the students illustrated many ideas and skills they had figured out by themselves (or previously known), including:

- use of keywords
- phrasing
- the difference between Google and Google Scholar in the search for scholarly material
- author searches, in that generally one must search last name first
- basic use of Boolean (AND/OR/NOT; no use of parenthesis)
- what kinds of materials are available in a database
- finding full text and saving, printing, or emailing citations in databases.

They did not seem to have a full grasp on truncation or stemming, as they searched for "mayan people" in Academic Search Premier, which could be stemmed. They indicated they understood the use of AND and OR, but did not actually test out a Boolean query or use a combined Boolean query with parenthesis. They had figured out basic functions of databases, but did not notice that a user can access PDF or HTML versions of an article from the results page, or the function of the "find it" button. They did not mention or illustrate the thesaurus in Academic Search Premier, and made up a meaning for the "Request" button in Hawaii Voyager that was creative, but did not have to do with the button's actual function of requesting videos or other restricted materials.

On the whole, their exploratory learning introduced them to certain important parts of Academic Search Premier, Google and Hawaii Voyager, but not all. It seemed they were not in the habit of reading help files, as a pass-through of the help files would have explained some of the issues that they missed such as truncation and the thesaurus.

2.3 Integrating the Results of the Needs Assessment

After this needs assessment, our group chose to focus on database searching in our teaching session. To integrate the session further into the instructor’s overall class plan, we decided to spend part of the class having students search for articles related to their future literature review theme of student-teacher relationships. In our needs assessment, students showed that they only had introductory knowledge of database searching and Boolean. They knew truncation existed and where to find it in the advanced search options but did not know how to implement it, as proven by the sample search of "mayan people". Given the students’ illustration of their knowledge level, we decided to instruct them on concept analysis and Boolean searching, with slight mentions of truncation and stemming. Their group searching activity would focus on two databases - Academic Search Premier, which they had already presented on, and CSA's MLA.
3. Lesson Plan

Instructors:  Hanalei Abbott, Frans Albarillo, Amanda Hann

Note on notation: T = teacher S = student so that $T=>S$ means a lecture, $S$ alone means the student is doing something alone (like a test) $S=>S$ means students doing something with other students (usually group work)

<table>
<thead>
<tr>
<th>Class</th>
<th>Activity and Time</th>
<th>Materials/Activity</th>
</tr>
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<tbody>
<tr>
<td>$T =&gt; S$</td>
<td>Introduction</td>
<td>Tell class what we’re going to do, Introduce Pre-Test</td>
</tr>
<tr>
<td>$S$</td>
<td>Pre-Test</td>
<td>Clicker PowerPoint Test</td>
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<tr>
<td>$T=&gt;S$</td>
<td>Lesson One</td>
<td>Amanda’s lecture on search terms</td>
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<td>$S=&gt;S$</td>
<td>Activity One</td>
<td>Worksheet One</td>
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<td>Observation Sheet (Instructors)</td>
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<tr>
<td>$S=&gt;T$</td>
<td>Present Results</td>
<td>Worksheet One</td>
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<tr>
<td>$T=&gt;S$</td>
<td>Boolean</td>
<td>Frans’ lecture on Boolean</td>
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<tr>
<td>$T=&gt;S$</td>
<td>Refining Results</td>
<td>Hanalei’s lecture on Refining Searches</td>
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<td>Introduces Activity Two</td>
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<tr>
<td>$S=&gt;S$</td>
<td>Activity two</td>
<td>Observation Sheet (Instructors)</td>
</tr>
<tr>
<td>$S=&gt;T$</td>
<td>Presenting Results</td>
<td>Computer with MLA and Academic Search Premier Loaded on so that students can show searches</td>
</tr>
<tr>
<td>$S$</td>
<td>Post-Test</td>
<td>Clicker PowerPoint Test, Wrap up, email instructors search histories</td>
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3.1 Additional Materials for Class

A backup presentation handout was created in the event our PowerPoint failed to work. This is attached as appendix D. Also candy was brought and given to the students at the end of the lesson. We created a backup data sheet for recording pre- and post-test results in the event that our Turning Point data might be lost. This is attached as Appendix C. This document also served as an answer key.
4. Learner's Session Evaluation

The LIS 100 instructor had his students evaluate us on the same oral presentation criteria that he and the students evaluated with during student presentations. The 30-point rubric covers six topics: clarity, coherence, creativity, correctness, use of voice, use of body, and use of support. While their rating of our lesson was appropriate in that it used the same criteria that they were using all along in their class, it was difficult for us to gather their perceptions of our lesson from their ratings. We only received three evaluation sheets: one from each group - the same groups that they had been in all along in their class. Numerically, all groups gave us almost the full 30 points. More interesting are the brief justifications each group of students wrote under each evaluation category.

All three groups remarked in their evaluations that they enjoyed our use of food as a theme, indicating that something that they can relate to and deal with in their daily lives. Their responses indicated that they were affectively engaged in the parts of our presentation that mentioned food. One group mentioned that the use of YouTube was a plus in the "creativity" category, and other groups mentioned PowerPoint, clickers, and group activities as a positive under "use of support". This feedback indicates students were affectively engaged as stated in our outcome of "students will cooperate with their own group to perform concept analysis on the topic of student-teacher relationships".

Another group remarked that all aspects of the lesson related to each other, something that we strived for - providing enough activities for the students not to feel bored, integrating aspects of the lesson into each other so students had a coherent sense of what they were learning.

Another positive comment was that our lesson was "very helpful, in doing our own searches we could see that what they taught us was true". This was another goal we strove for, as outlined in our cognitive outcome "Students will develop numerous search strings" and sensorimotor outcome "students will correctly apply Boolean AND/OR/NOT and simple truncation in their search terms in Exercise 2.\" The groups had to actually complete the exercises to feel as if they were helpful, therefore accomplishing our outcomes.

As to weaker portions of the lesson, students commented that we "stood behind the computer a lot instead of coming out and interacting with [the] audience". This comment refers to the portion of the lesson where we were all teaching from PowerPoint, as when the students were working in groups we did each go to one group and interact with them. Our PowerPoints were short, which indicates that this audience would not be engaged with a longer lecture. Students also commented in the “coherence category” that there were "some glitches", but this is a little too vague to understand or address.

Unfortunately, most of the written justifications of their rankings were not very substantial, and many were vague so we could not get a full view of how the students felt without a
focus group or more lengthy survey. It was additionally difficult to link up the students’
more nebulous comments to our original lesson outcomes. However, the students'
evaluations did show that they were not just favorably inclined toward the lesson but that
they understood why it would be useful to them, as indicated by the comments "[the
lesson was] very helpful, in doing our own searches we could see that what they taught us
was true" and "info and topics discussed were clear and helpful".
5. Conclusion: A Memo to the Administration on the Importance of Teaching Boolean Searching

To: UH Manoa Administration
From: Hanalei Abbott, Frans Albarillo, Amanda Hahn
Re: Need to teach students how to construct searchers using Boolean syntax
Date: November 13, 2008

As next generation librarians, trained by the University of Hawaii Library and Information Science Program, we are writing the administration to express the importance of information literacy in education, and in particular how important it is to teach students how to construct searches in professional subscription databases by applying Boolean syntax to create search queries that allow them to access information that meets their educational information needs. The Association of College and Research Libraries (ACRL) defines information literacy as: “a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.” According to UH Hamilton Library’s 7 year strategic plan teaching information literacy helps strengthen academic partnerships by “integrat[ing] information literacy instruction into the undergraduate and graduate curricula through [which in turn creates] partnerships between librarians and instructional faculty.” Teaching information literacy is a at the core library instruction, an important function for all UH system libraries and librarians.

This instruction unit on Boolean Searching supports the university’s mission statement, as stated in the UH Manoa strategic plan, because it allows students “physical and intellectual access to the world of knowledge.” Furthermore this unit also supports UH’s core commitment to “improve the quality of student life and scholarship by providing effective access to information.” In addition to increasing access, teaching students to apply Boolean search methods fulfills the written communications foundations requirement because it provides students with “experiences in the library and on the Internet and enhances their skills in accessing and using various types of primary and secondary materials.”

Furthermore our Boolean Instruction Unit supports the strategic imperative of creating freshman experience programs because LIS 100 is integrated into the first year experience program. Additionally, by creating standards based lessons, like our Boolean Unit, which follow the ACRL national standards, our librarians, libraries, and instruction units system wide maintain “a culture of evidence” whereby information literacy instructors support every academic program by providing a systematic way to measure evidence that students are “recognizing, locating, and evaluating effectively needed information.”

Finally, in support of the ACRL outcomes our libraries and librarians have a strong commitment to Boolean searching which has been the accepted search method that helps students articulate their questions into search queries that can be understood by a database allowing them to “access the needed information effectively and efficiently.”
References


Appendices
Appendix A: Focusing Question

This was the question we posed to the students to guide them in creating and implementing their search queries:

How do I find results that will help me in my literature search about student-teacher relationships in *Teacher Man* and the *Prime of Miss Jean Brody*?
Main research question for this exercise: How do I find results that will help me in my literature search about student-teacher relationships in Teacher Man and The Prime of Miss Jean Brody?

Name: ________________________
Group: _______________________

Activity 1 Vocabulary:

Keyword Terms: These are terms that are very relevant to your research question. It is important to identify key terms as concepts that are essential to your question.

For example, if your research question is: How does tourism contribute to environmental problems?, your key terms are ‘tourism’ and ‘environmental problems’.

Related Terms: These are terms that are related to your research question. Terms that are related to tourism and environmental problems together are: ‘foreign visitors’ and ‘pollution’, or ‘domestic tourists’ and ‘rubbish’.

Synonyms: These are words that have similar meanings. For example, words that are synonyms for trash are ‘rubbish’ and ‘garbage’.

Worksheet 1 Directions: In your groups, take the research topic that Randy gave you (student-teacher relationships) and identify at least two key terms.

Key Term 1: ____________________________ Key Term 2: ____________________________
Key Term 3 (optional): ____________________________

Please create synonyms/related terms for your key terms - as many as you can. Write them down on the table on the next page.
## Appendix B: Activity 1 Worksheet 1

<table>
<thead>
<tr>
<th>Related Terms</th>
<th>Synonym</th>
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<tbody>
<tr>
<td>Terms related to student: college, high school</td>
<td>Terms that are synonymous with student: pupil, learner</td>
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Appendix B: Activity 2 Information Worksheet 2

Activity 2 Vocabulary:

Boolean: also known as Boolean logic, Boolean search, Boolean operators, Boolean operands, Boolean definition, Boolean searching, Boolean commands.

Examples of Boolean:

Using AND narrows a search by combining terms; it will retrieve documents that use both the search terms you specify, as in the example below.
Using OR broadens a search to include results that contain either of the words you type.
Using NOT will narrow a search by excluding certain search terms.

Search Terms: the words used to query a database.

Hits: The number of items returned in a search. Sometimes you might hear people refer to them as results, but hits and results are not necessarily the same.

Relevance: Pertinence to the research question; potential usefulness.

Simple Truncation: Truncation is a search command that utilizes a special symbol that can be substituted in a word and can represent any possible letter or combinations of letters. For example: Walks = Walks, Walked, Walking.
Appendix B: Activity 2 Directions Worksheet

Activity 2 Directions:

Take your list of keywords, synonyms, and related concepts from Worksheet 1 and create three search strings using two search terms each, simple truncation, and Boolean operators.

Test these search strings in both MLA and Academic Search Premier.

Record the number of hits you get for each search.

Look at the titles of your top five results and rank their relevance to your research question by using the following 1 to 5 scale:

1 = all five titles directly relate to my research question
2 = at least three titles directly relate to my research question
3 = fewer than three titles related to my research question
4 = one title directly relates to my research question
5 = useless, I did not get anything relevant to my research question

In the last column, write down the reason you think your search is or is not relevant.

After you have finished, pick the best search string and in three minutes your group will present why they think this particular strategy produced good results:

- If your group didn't get any good results, explain why you think your searches didn't work.
- Conclude by describing how you would improve your search strategy to produce even better results for next time.

Remember to keep in mind your main research question!

Main research question for this exercise: How do I find results that will help me in my literature search about student-teacher relationships in 'Teacher Man' and 'The Prime of Miss Jean Brody'?
### Appendix B: Activity 2 Worksheet 2

<table>
<thead>
<tr>
<th>Database</th>
<th>Search term 1</th>
<th>Boolean</th>
<th>Search term 2</th>
<th># of hits</th>
<th>Relevance</th>
<th>It is relevant (or not) because</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MLA</td>
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<td>2. Academic Search Premier</td>
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### Appendix C: Turning Point Questions, Related ACRL Outcomes, and Answer Key

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<thead>
<tr>
<th>Question</th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>If your teacher wanted you to find scholarly information and write a paper on Japanese tea ceremony, what would you do first?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. go to Google and type in “Japanese tea ceremony”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. go to Academic Search Premier and type in “Japanese tea ceremony”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. think of different search terms that would have to do with my topic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Go to Yahoo and type in “Japanese tea ceremony”</td>
<td></td>
<td></td>
</tr>
<tr>
<td> 1.1.1 Outcome (ACRL 2.2.b)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| What would be the best synonym for wheat bread?                          |         |          |
| a. rye bread                                                            |         |          |
| b. toast                                                                |         |          |
| c. muffin                                                               |         |          |
| d. brown bread                                                          |         |          |

| &nbsp;1.1.1 Outcome (ACRL 2.2.b)                                        |         |          |

| If you were looking for articles in Academic Search Premier or MLA about Washington cherries, choose the best Boolean search: |         |          |
| a. Washington AND cherries                                              |         |          |
| b. Washington OR cherries                                               |         |          |
| c. Washington NOT cherries                                              |         |          |
| d. What are Washington cherries?                                        |         |          |
| &nbsp;1.2.1 Outcome (ACRL 2.2.d):                                      |         |          |
## Appendix C: Turning Point Questions, Related ACRL Outcomes, and Answer Key

In Academic Search Premier, you are looking for information about different ways to eat apples. Choose the best search strategy that uses simple truncation:

- a. `eat* AND apple*`
- b. `Eat* OR apple`
- c. `Eating NOT appl*`
- d. `Eats AND apple*`

If you are searching for information about the **history of pizza**, which item would be the most relevant?

- a. An Italian cookbook
- b. A newspaper article about the rising cost of anchovies
- c. A book about food in 19th century Italy
- d. A Pizza Hut menu

If you searching a database like Academic Search Premier, which number of results would be the best?

- a. 0
- b. 100
- c. 1,000
- d. It depends
# Appendix C: Turning Point Questions, Related ACRL Outcomes, and Answer Key

<table>
<thead>
<tr>
<th>Were these activities helpful for your research in this class?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Very helpful</td>
<td></td>
</tr>
<tr>
<td>2. Somewhat helpful</td>
<td></td>
</tr>
<tr>
<td>3. Neither helpful nor unhelpful</td>
<td>N/A</td>
</tr>
<tr>
<td>4. Somewhat unhelpful</td>
<td></td>
</tr>
<tr>
<td>5. Not helpful</td>
<td></td>
</tr>
</tbody>
</table>
Example Research Question

- What is the history of food in India?*

The first thing you should always do is think about possible keyword terms, related concepts and synonyms!

Keywords

The Keywords for this research question are

- Food
- History
- India

Related Terms

Terms or concepts related to your keywords

- Agriculture
- Food habits

Synonyms

Have similar meanings to your keyword terms

For Food:
- Cuisine, Aliment, Grub, Chow

Sometimes a thesaurus helps with this!
http://www.youtube.com/watch?v=av5PKePlkcE

or How to choose your slice of pizza at the Pizza Buffet.

BOOLEAN SEARCHING: ACTIVITY TWO
Appendix D PowerPoint Backup Slide Handout

GW's Diagram: Pizza Buffet

- Toppings:
  - Pepperoni
  - Sausage
  - Mushroom
  - Broccoli
  - Anchovies
  - Onions
  - Crawfish

GW Buffet is also known for his odd figure-eight shaped pizzas, because he is little careless when placing the pizzas into the oven. So, that makes finding the right slice an additional challenge.

Boolean Operators

- AND
- OR
- NOT

By using "AND" we are requiring both of the search terms (in this case – pizza toppings) to appear somewhere in the document (make that pizza).

In GW's merged pizzas, it is only the middle slice we want. The one with both Pepperoni and Sausage!

By using "OR" we are saying either of the toppings can appear somewhere on the pizza.

In GW's merged pizzas any slice is okay!
Appendix D PowerPoint Backup Slide Handout

"NOT" excludes those search terms (like anchovies) that follow it.

In GW's merged pizzas we don't want any slice of pizza that has anchovies! Just the mushroom side please!

More Examples "OR"

More Examples "AND"  
Mushrooms  
Anchovies  
Sausage

More Examples "AND"  
Mushrooms  
Sausage  
Pepperoni

2 min Movie

- [http://www.youtube.com/watch?v=xZps3NH-M](http://www.youtube.com/watch?v=xZps3NH-M)
- Start at 1:24 (Ends 3:02)

Simple Truncation

Truncate: shorten (something) by cutting off the top or the end

Why do we truncate our search terms?

Allows us to include more terms in the search

Other names for truncation include Wildcards; asterisk "*", pound sign "#"

The "*" means that anything can go there.

For example: bak* includes baker, baked, bakes, baking
Appendix D PowerPoint Backup Slide Handout

11/10/08

Simple Truncation in Academic Search Premier and MLA

Use the "*" at the end of the word to truncate

Walker Walking Walked
Librarian Library Libraries Librarians
Liberal Liberalism Liberalists

Be careful not to truncate too much!

"to judge worthiness"

Searching Databases: Some Things to Consider

- Number of results
- Authority
- Timeliness
- Relevance

What is Relevance?

Relevance: Bearing upon or properly applying to the matter at hand; affording evidence tending to prove or disprove the matter at issue or under discussion

(from Merriam Webster’s Third New International Dictionary, Revised Ed.)

Determining Relevance

Is the item on the same topic?
Could it help solve my problem?

For example, if you’re looking for a spaghetti recipe which item would be more relevant?

a) A literary review of the new children’s book, My Dog Spaghetti
b) An e-book entitled 60 Easy Italian Dishes in 60 Minutes or Less