Instructional Unit Collaboration: PSY409a: Searching Google

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Section 2
Purpose and Goal

We presented a one-time 75-minute instructional unit to a class of undergraduate students enrolled in Psychology 409a: Driving Psychology. Students were given a report assignment by their instructor that required them to find relevant information by using a variety of Google search tools. In this context, our overall teaching goal was for PSY 409a students to learn the search skills necessary to search Google effectively for course related research on the topic of driving psychology. Due to time constraints, we limited our instructional unit specifically to the following Google tools: Google Advanced Search, Google Books, Google Scholar, and Google News.

Needs Assessment

Psychology 409a students were given a preliminary needs assessment survey to help us determine their background experience with information technology and to measure their information literacy skills. Out of the 24 enrolled PSY 409a students, 22 students answered the survey covering a variety of topics including database searching, online identity, and searching the web with Google. For our purposes, we will focus our discussion to the survey questions specific to our goal.

Boolean connectors are an essential building block for successful searching in many search interfaces, including Google, so to evaluate student’s knowledge of Boolean, we asked the following multiple choice question: You would like to find all the books on speeding, as well as all those about accidents. Which of the following searches would accomplish this?

Fifty-nine percent (59%) of students choose [speeding AND accidents]. These students may have picked that answer based on the natural language “and” which expresses a group of things together. Five percent (5%) chose the keyword search [speeding accidents] and nine percent choose an exact phrase search ["speeding accidents"]. Only twenty-seven percent (27%) of students chose the correct answer [speeding OR accidents]. Based on these results, seventy-three percent (73%) of students did not recognize or understand Boolean searching.

To determine how students formulate searches on their own, we also asked an open ended question asking students to formulate a search query or strategy: You need to figure out where the nearest regional EPA library is. Explain below how you would do this using Google.

Students gave a variety of responses, but four kinds of answers surfaced. Fourteen percent (14%) of students said they didn’t know or wasn’t sure. Eighteen percent (18%) of students would use Google Maps and enter a search for EPA library. Thirty-two percent (32%) of students used a general keyword search strategy using words taken directly from the survey question: [nearest EPA library] and [EPA library]. Thirty-six percent (36%) of
students also used a general keyword search strategy with terms from the question, but added in their location as a concept block: [EPA library Honolulu], [EPA library Hawaii] and “Type in regional EPA library and my zip code.” None of the students used synonym generation in their search strategies. Also students using “nearest” as a search term, indicate a lack of knowledge that a search engine is looking for term occurrence and does not understand ideas that are relative to the searcher.

Google search tools have a variety of limiters searchers can choose from. Two multiple-choice questions in the survey tested student's knowledge of limiters in specific situations. The first question asks students to find a news article in Google News: You are looking for a newspaper article about speeding laws in Georgia using Google News. Which is the best set of search terms?

Five percent (5%) of students choose the keyword string that uses the plus operator and Boolean OR (which is counterproductive for this question) [speeding+laws OR Georgia]. Twenty-seven percent (27%) of students chose a general keyword search [speeding laws Georgia]. Thirty-two percent (32%) of students chose an exact phrase search with the location abbreviated and expressed with a prepositional phrase ["speeding laws" in ga]. Thirty-six percent (36%) of students chose the correct answer that uses Google News’ location limiter [speeding laws location: ga]. Based on these results, sixty-four percent (64%) of students are either unaware of or do not understand location limiters.

The second search limiter question asks students to find a full text magazine article in Google Books: You are looking for a magazine article on speed limits published in 1985. You need to download/print the full article. How would you search for this using Google Books?

None of the students chose [type in search box: “speed limits” 1985 in magazine]. Nine percent (9%) chose to do a keyword only search [type in search box: speed limits full view magazine 1985]. Five percent (5%) chose a keyword search with a counterproductive Boolean OR with a public domain limiter [visit advanced search; type in search box: speed OR limits 1985; select magazine content and public domain only]. Eighty-six percent (86%) of students chose the correct answer that uses limiters for date and full view only [visit advanced search; type in search box: speed limits; set publication limit to January 1985 to December 1985; select magazine content and full view only]. Based on these results, fourteen percent (14%) of students are either unaware of or do not understand date and/or full view limiters in Google Books.

Part of being a successful searcher is being able to evaluate results. We asked students when evaluating Google results how often (almost always, often, sometimes, rarely, never) do they take into consideration aspects of their search results. The aspects were: URL, domain extension (i.e. .com, .org, .gov, .edu), date of publication, excerpt/summary, title, and ranking in search results.
Fifty-five percent (55%) of students “almost always” considered title in evaluating results. Fifty percent (50%) “almost always” considered the excerpt/summary. Twenty-seven percent (27%) “almost always” considered URL. Both domain extension and page ranking were “almost always” considered by eighteen percent (18%) of students. Only nine percent (9%) of students “almost always” considered the date of publication.

The most considered items were locations in the search results page where students were most likely to see their search terms bolded back at them in the title and excerpt/summary. However, the majority students did not always consider items that would give them clues to authority such as URL and domain extension. Also date of publication, which is an important factor in determining relevance, was not always considered by most. The majority of students selected one to three items they “almost always” consult with a wide range of responses to the rest. Ideally, students should be almost always considering all of these aspects in weighing the relevance of search result items.

Lastly, we surveyed how students felt about searching with Google. Students were given a multiple choice question asking: How satisfied are you with your Google search results? Forty-five percent (45%) rated themselves as being [satisfied]. Another forty-five percent (45%) rated themselves as being [somewhat satisfied]. And nine percent (9%) rated themselves as being [unsatisfied]. This indicated to us that fifty-five percent (55%) of students were not fully satisfied with their Google search results and would be motivated to learn how to improve their search results.

Based on the results of the needs assessment data, we felt that it was essential to not only teach students how to navigate and use certain Google search tools (Google Advanced Search, Google Books, Google Scholar, and Google News), but to also emphasize and incorporate fundamental search skills such as using Boolean search operators and synonym generation into our workshop. There was also a range of student skills in using search limiters and in evaluating results. To respond to this need, we created handouts for Google Search Operators and Information Evaluation that students were to use in our workshop exercises and to keep for future reference. Although our workshop was directed specifically to Google tools, we wanted students to walk away with fundamental search skills and information evaluation that can be applied to many different web search interfaces students may encounter.

Standards and Outcomes

To focus our instruction, we created three specific teaching goals. Our goals are keyed to specific ACRL standards, performance indicators, and outcomes. Each of our goals is also represented as an integrated learning objective with affective, cognitive, and sensorimotor measurable outcomes.

Specific Teaching Goal #1: Students will formulate and conduct effective search strategies using Google search tools (Google Advanced Search, Google Scholar, Google Books and Google News). (ACRL 2.2. b,d).
ACRL Standard 2
The information literate student accesses needed information effectively and efficiently.

ACRL Performance Indicator 2.2
The information literate student constructs and implements effectively-designed search strategies.

ACRL Outcome 2.2.b
Identifies keywords, synonyms and related terms for the information needed.

ACRL Outcome 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).

Integrated Learning Objective: When students appreciate the different search options available within Google, they will distinguish between different search fields and apply necessary search strategies, including use of operators and limiters to their searches.

ACS Outcomes:
1. A Given an initial search result set with little to no relevant results, students will be willing to try new options. (ACS Taxonomy #A2)
   a) By using new terms, field limiters, or operators (as determined in each exercises' answer key)

Assessment Item:
1) Google Advanced Search Exercise #6 and #7 (identifying non-relevant results and explaining why)
2) Google Book Search Exercise #2, #4 part 3
3) Google Scholar Search Exercise #4
4) Google News Exercise #2
5) Google News Exercise #4 part 2
6) Google News Exercise #4 part 4
7) Poll Question: You would like to find all the books on speeding, as well as all those about accidents. Which of the following searches would accomplish this? (speeding AND accidents / speeding OR accidents / speeding accidents / "speeding accidents")

Measurement Objective: 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more). Also 80% of students will select the correct poll answer [speeding OR accidents].
1. Given a search exercise, students will be able to formulate keywords, synonyms, and related terms to be applied to a search query. (ACS Taxonomy #C2)
   a) Composing different search terms for a given topic in an exercise.

   **Assessment Item:**
   1) Google Advanced Search Exercise #3
   2) Google Books Exercise #4 part 1
   3) Google Scholar Search Exercise #6
   4) Google News Exercise #4 part 1
   5) Google Books Exercise #4 part 3

   **Measurement Objective:** 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more).

1.5 Given an advanced search menu, students will consistently locate appropriate search options presented on the screen. (ACS Taxonomy #S1)

   **Assessment Item:**
   1) Google Advanced Search Exercise #5
   2) Google Book Search Exercise #2
   3) Google Scholar Search Exercise #1
   4) Google Scholar Search Exercise #5
   5) Google News Search Exercise #2
   6) Google News Search Exercise #4 part 2
   7) Google Book Search Exercise #3

   **Measurement Objective:** 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more).

**Specific Teaching Goal #2:** Students will be able to effectively locate information using various Google search tools (ACRL 2.3.a)

**ACRL Performance Indicator 2.3**
The information literate student retrieves information online or in person using a variety of methods.

**ACRL Outcome 2.3.a**
Uses various search systems to retrieve information in a variety of formats

**Integrated Learning Objective:** When students feel comfortable using a variety of Google tools, they will be able to compare different search results and match the best tool for different types of information.

**ACS Outcomes:**
1.A Given an information need, students will show confidence in choosing the best Google search tool to obtain the best results. (ACS Taxonomy #A3)
Assessment Item:
Poll question asking: *After today’s workshop, do you feel more confident as a searcher? (Very Much / Somewhat / No Change / Less Confident)*

Measurement Objective: 80% of students will rate themselves feeling more confident as either “very much” or “somewhat”

1.C Given a search exercise, students will integrate special features of different Google search tools to apply to their search query (as outlined in each exercise and answer key). (ACS Taxonomy #C2)

Assessment Item:
1) Google Advanced Search Exercise #4
2) Google Advanced Search Exercise #5
3) Google Scholar Search Exercise #7
4) Google News Search Exercise #2

Measurement Objective: 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more).

1.S Given an information need in a specific format, students will recognize the most appropriate search tools to use. (ACS Taxonomy #S1)
   a) Completing pre-search exercises
   b) Locating a full-text article in an exercise
   c) Locating a book in an exercise

Assessment Item:
1) Google Advanced Search Exercise #1
2) Google Advanced Search Exercise #2
3) Google Book Search Exercise #1
4) Google Scholar Search Exercise #2
5) Google Scholar Search Exercise #6
6) Google News Exercise #1
7) Poll Question: *You need to find a magazine article published in the last five years. Which Google tool will give you the best results? (Google Advanced / Google Scholar / Google Blogs / Google Groups / Google Books / Google News)*

Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more) and 80% of students will correctly answer the poll question (by selecting Google Books).

**Specific Teaching Goal #3:** Students will be able to critically evaluate freely available content on the web (ACRL 3.2.a)
ACRL Standard 3
The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

ACRL Performance Indicator 3.2
The information literate student articulates and applies initial criteria for evaluating both the information and its sources.

ACRL Outcome 3.2.a
Examines and compares information from various sources in order to evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias

Integrated Learning Objective: When students value both credibility and relevancy they will analyze their search results set and identify pertinent sources.

ACS Outcomes:
1.A Given a search exercise, students will show willingness to be selective in choosing relevant and credible sources. (ACS Taxonomy #A1)
   a) Displayed by actively using the full time given to go through results.
   b) Using a set of criteria defined in the Information Evaluation Flowchart handout
   c) Explaining their reasoning in discussions with the class.

Assessment Items:
1) Google Scholar Search Exercise #3
2) Google News Exercise #4 part 5  (Includes a group discussion as well as sharing with the class)
3) Google Advanced Search Exercise #6

Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more). Also 80% of students will show evidence of applying criteria by filling out the Information Evaluation Flowchart handout (achieving a score of 2 or more).

1.C Given a potential information source, students will be able to assess credibility. (ACS Taxonomy #C3)
   a) Using a set of criteria defined in the Information Evaluation Flowchart handout and determining credibility for potential sources as outlined in each exercise.

Assessment Items:
1) Google Scholar Search Exercise #3
2) Google Books Exercise #4 part 5
3) Google News Exercise #4 part 5
Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more). Also 80% of students will show evidence of applying criteria by filling out the Information Evaluation Flowchart handout (achieving a score of 2 or more).

1.S Given a task of evaluating search results, students will be able to identify elements in determining relevancy. (ACS Taxonomy #S2)
   a) Using a set of criteria defined in the Information Evaluation Flowchart handout.

Assessment Item:
1) Google Book Search Exercise #4 part 4
2) Google Book Search Exercise #4 part 6
3) Google News Exercise #3
4) Google News Exercise #4 part 3

Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more). Also 80% of students will show evidence of applying criteria by filling out the Information Evaluation Flowchart handout (achieving a score of 2 or more).

Section 3

In the process of creating an effective instructional sessions instructors needed to create lists of assumed skill deficiencies. This list of deficiencies can either be created through assumptions based on general patterns of a particular population, through comments from instructors or from directly surveying the students that will be instructed.

During our instructional design we developed a list of proficiency skills that we assumed the students would have based on general known patterns within the undergraduate student population at the University of Hawaii, Manoa.

This list includes:

1) Being computer proficient. We defined this as being basic searchers (using 2 keywords maximum in search statements), having a basic knowledge of Google Scholar and having used Google Books at least once.

2) The students apply general search skills with a gap between personal searching and academic searching. When it comes to searching for academic research the students apply the same practices as when they search for personal or everyday information.
3) The students have a minimum to moderate ability to critically evaluate websites. Evaluation often happens at the subconscious level. Our assumption here is that the students do not have a systematic process through which they really understand when a website has quality information worth citing in an academic research paper.

4) The students have a very basic understanding of how search engines work. With this statement we are assuming that students do not have a firm grasp on understanding where information lives on the internet and how Google finds it and indexes it for retrieval through their software.

We also used a Google Form (as mentioned in section 2) to evaluate the overall search skills of the particular students we will be instructing. The questions we asked the students were formulated to help us identify deficiencies in both basic and advanced search skills.

The Google Form results gave us several insights into the students’ search abilities. For example most students rated their search skills as being above average however only 23% of them were able to correctly answer the question concerning Boolean logic. We also found that students almost always search Google when they have an information need and that they are at least somewhat satisfied with their results when searching on Google. It was also important to note that 91% of the students learn how to use software through trial and error.

The Google Form also revealed how often the students consult Google when they have an information need. When ranking ways of obtaining information from almost always to never, we found that 67% of the students ‘almost always’ consult Google when they have an information need. This can be compared to ‘almost always’ responses concerning Wikipedia (18%), classmates (5%), Facebook (5%), friend or family member (4%), library catalog (4%), librarian (0%) and instructor (0%). This shows the dominance Google has in the information gathering process of these students.

For the most part students mirrored these skills during our instructional session. We lectured concerning advanced search skills and search result evaluation and gave interactive lessons for hands on learning. During these interactive lessons we found that students were using the advanced search skills well but at the same time struggling to create synonyms and then combine them using the Boolean OR. Along these same lines, we found that students were slow to use an exact phrase search to make their results more precise (i.e. road rage v. “road rage”).

We also found that even through we encouraged the students to critically evaluate their sources and to look beyond the first page (or to re-run their searches if they were unsatisfied) most students quickly selected one of the first couple of results.
### Instructional Sequence

Begins at 1:30 p.m. (75 minutes total workshop time)

<table>
<thead>
<tr>
<th>Time</th>
<th>Duration</th>
<th>Instruction/Activity</th>
<th>Instructor</th>
<th>Materials Needed</th>
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<tbody>
<tr>
<td>1:30</td>
<td>2 min</td>
<td>Introduction and Outline of Class Session</td>
<td>Philip</td>
<td>Power Point</td>
</tr>
<tr>
<td>1:32</td>
<td>3 min</td>
<td>YouTube: How Google Works &amp; Distribution of Handouts</td>
<td>Philip</td>
<td>YouTube Video</td>
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<tr>
<td>1:35</td>
<td>10 min</td>
<td>Boolean Lecture</td>
<td>Jennifer</td>
<td>Power Point</td>
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<tr>
<td>1:45</td>
<td>10 min</td>
<td>Google Advanced Search Lecture &amp; Exercise</td>
<td>Jennifer</td>
<td>Google Advanced Handout (Pink)</td>
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<tr>
<td>1:55</td>
<td>5 min</td>
<td>Evaluation Matrix</td>
<td>Philip</td>
<td>Info. Evaluation Handout (Purple)</td>
</tr>
<tr>
<td>2:00</td>
<td>10 min</td>
<td>Google Book Lecture &amp; Exercise</td>
<td>Philip</td>
<td>Google Book Handout (Green)</td>
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<tr>
<td>2:10</td>
<td>10 min</td>
<td>Google Scholar Walk-through &amp; Exercise (with Discussion of Relevance)</td>
<td>Jennifer</td>
<td>Google Scholar Handout (Yellow)</td>
</tr>
<tr>
<td>2:20</td>
<td>10 min</td>
<td>Google News Lecture &amp; Exercise (with Discussion of Authority)</td>
<td>Philip</td>
<td>Google News Handout (Blue)</td>
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<td>----</td>
<td>Optional*</td>
<td>Personalization of Google News Feed</td>
<td>Philip</td>
<td>----</td>
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<tr>
<td>2:30</td>
<td>5 min</td>
<td>Student Questions &amp; Collection of Handouts</td>
<td>Jennifer / Philip</td>
<td>----</td>
</tr>
<tr>
<td>2:35</td>
<td>10 min</td>
<td>Post-test and Course Evaluation</td>
<td>Jennifer / Philip</td>
<td>Poll Everywhere</td>
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Section 4

Appendix 1 includes all of our handouts, hands-on exercises and worksheets.

Appendix 2 includes our evaluation questions asked at the end of our instructional session using Poll Everywhere.

Appendix 3 includes our slides used during out lecture.

We also showed a video titled “How Search Works” created by Google to help explain what happens when someone runs a search using the Google search engine. We wanted students to understand not only the basic mechanics behind Google searching, but how Google ranks some of their search results. The link to this video can be found below:

http://www.youtube.com/watch?v=BNHR6IQGZs

Section 5

Goal 1 - ACS Outcome 1.A:

Given an initial search result set with little to no relevant results, students will be willing to try new options. (ACS Taxonomy #A2)

   a) By using new terms, field limiters, or operators (as determined in each exercises’ answer key)

Measurement Objective: 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more). Also 80% of students will select the correct poll answer [speeding OR accidents].

Exercise response item: Google Advanced Search Exercise #7
Correct response:
Pass = Yes or No + trying new terms or methods
Fail = No + giving up

Exercise response item: Google Books Exercise #1
Correct response:
   a) 438,000
   b) 29,900

Exercise response item: Google Books Exercise #4 part 3:
Correct response:
Answers will be dependent upon the search they entered. Results that appear off topic should be rephrased. If the student indicates that
their results do not look to be on topic but there is no new search phrase this will be viewed as a fail.

**Exercise response item:** Google Scholar Search Exercise #4:
Correct response:
Adding terms such as “behavior” or “study” or rephrasing language (for example: to “aggressive driving” which is more fitting than “road rage”).

**Exercise response item:** Google Scholar Search Exercise #5:
Correct response:
Limiting articles by subject area: Social Sciences, limiting by publication (assuming they know of a title of a particular psychology journal), or limit by author if they know of an expert.

**Exercise response item:** Google News Exercise #1:
Correct response:

a) 858
b) 162
c) “road rage” OR “aggressive driving”
d) 1110

**Exercise response item:** Google News Exercise # 4 part 2
Correct response:
If answering YES then changes will be listed. A response of YES without stating any changes will be viewed as a fail.

**Exercise response item:** Google News Exercise #4 part 4
Correct response:
Any items listed that are different then what the student listed in part one of this search exercise will be viewed as a pass. Not listing any synonyms will be viewed as a fail.

**Exercise response item:** Poll Question
Correct response:
OR

**Goal 1 - ACS Outcome 1.C:**

Given a search exercise, students will be able to formulate keywords, synonyms, and related terms to be applied to a search query. (ACS Taxonomy #C2)

a) Composing different search terms for a given topic in an exercise.

Measurement Objective: 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more).
Exercise response item: Google Advanced Search Exercise #3
Correct response:
- road rage, aggressive driving, laws, legal
- Pass = 2 concepts + 2 synonyms
- Partial Pass = at least 1 concept + 1 synonym
- Fail = 1 concept or less

Exercise response item: Google Books Search Exercise #4 part 1
Correct response:
Three keywords that are on topic will be viewed as a pass

Exercise response item: Google Books Search Exercise #4 part 2
Correct response:
Passing responses will include at least 3 keywords from the generated list in the previous exercise plus at least one advanced search operator.

Exercise response item: Google Scholar Search Exercise #6
Correct response:
- Pass = Reasonable source based on the question
- Partial Pass = source on topic, but not authoritative
- Fail = Not on topic

Exercise response item: Google News Search Exercise #4 part 1
Correct response:
Any keyword that is on topic to the information need will be viewed as passing.

Goal 1 - ACS Outcome 1.S:

Given an advanced search menu, students will consistently locate appropriate search options presented on the screen. (ACS Taxonomy #S1)

Measurement Objective: 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more).

Exercise response item: Google Advanced Search Exercise #5
Correct response:
- Site:.gov
- Pass = site:.gov
- Partial Pass = Selecting a different limiter and showing evidence of reasoning in explaining why
Fail = Selecting a different limiter with no reason.

**Exercise response item**: Google Books Search Exercise #2

Correct response:

a) 438,000  
b) 29,900  
The difference in search returns will show that they effectively found an good search option for limiting their searches.

**Exercise response item**: Google Books Search Exercise #3

Correct response:

a) subject: “Law” AND “road rage”  
b) 1,610

**Exercise response item**: Google Scholar Search Exercise #1

Correct response:

No.

**Exercise response item**: Google Scholar Search Exercise #5

Correct response:

Limiting articles by subject area: Social Sciences, limiting by publication (assuming they know of a title of a particular psychology journal), or limit by author if they know of an expert.

**Exercise response item**: Google News Search Exercise #2

Correct response:

a) 858  
b) 162  
c) “road rage” OR “aggressive driving”  
d) 1,110

**Exercise response item**: Google News Search Exercise #4 part 2

Correct response:

A pass will be given to students who show evidence of using any of the Google News advanced search options.

**Goal 2 - ACS Outcome 1.A:**

Given an information need, students will show confidence in choosing the best Google search tool to obtain the best results. (ACS Taxonomy #A3)

Measurement Objective: 80% of students will rate themselves feeling more confident as either “very much” or “somewhat”

**Exercise response item**: Poll Question

Correct response:
Either “very much” or “somewhat”.

**Goal 2 - ACS Outcome 1.C:**

Given a search exercise, students will integrate special features of different Google search tools to apply to their search query (as outlined in each exercise and answer key). (ACS Taxonomy #C2)

**Measurement Objective:** 80% of students will successfully complete each assessment item with at least partial passing (achieving a score of 2 or more).

**Exercise response item:** Google Advanced Search Exercise #5

Correct response:
- Site:.gov
- Pass = site:.gov
- Partial Pass = Selecting a different limiter and showing evidence of reasoning in explaining why
- Fail = Selecting a different limiter with no reason.

**Exercise response item:** Google Scholar Search Exercise #7

Correct response:
- Google is only returning results on one out of two words or because I didn’t use quotes. (Pass/credit = some understanding of what went wrong)

**Exercise response item:** Google News Exercise #2

Correct response:
- a) 858
- b) 162
- c) “road rage” OR “aggressive driving”
- d) 1,110

**Goal 2 - ACS Outcome 1.S:**

Given an information need in a specific format, students will recognize the most appropriate search tools to use. (ACS Taxonomy #S1)

- a) Completing pre-search exercises
- b) Locating a full-text article in an exercise
- c) Locating a book in an exercise

**Measurement Objective:** 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more) and 80% of students will correctly answer the poll question (by selecting Google Books).
Exercise response item: Google Advanced Search Exercise #1
Correct response:  
State Law, laws, regulations  
Pass = anything on topic.

Exercise response item: Google Advanced Search Exercise #2
Correct response:  
government, state, lawmakers  
Pass = anything on topic.

Exercise response item: Google Books Search Exercise #1
Correct response:  
a) Books  
b) Magazines

Exercise response item: Google Scholar Search Exercise #2
Correct response:  
Pass if they fill out all of the fields

Exercise response item: Google Scholar Search Exercise #6
Correct response:  
0 (zero)

Exercise response item: Poll Question
Correct response:  
Google Books

Goal 3 - ACS Outcome 1.A:

Given a search exercise, students will show willingness to be selective in choosing relevant and credible sources. (ACS Taxonomy #A1)

a) Displayed by actively using the full time given to go through results.  
b) Using a set of criteria defined in the Information Evaluation Flowchart handout  
c) Explaining their reasoning in discussions with the class.

Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more). Also 80% of students will show evidence of applying criteria by filling out the Information Evaluation Flowchart handout (achieving a score of 2 or more).

Exercise response item: Google Advanced Search Question #6
Correct response:  
Any item that is on topic will be marked as a pass.
Exercise response item: Google News Search Question #4 part 5
Correct response:
  Students will show active participation in their group discussion and this will be apparent in their responses that they share with the class.

Goal 3 - ACS Outcome 1.C:

Given a potential information source, students will be able to assess credibility. (ACS Taxonomy #C3)

  a) Using a set of criteria defined in the Information Evaluation Flowchart handout and determining credibility for potential sources as outlined in each exercise.

Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more). Also 80% of students will show evidence of applying criteria by filling out the Information Evaluation Flowchart handout (achieving a score of 2 or more).

Exercise response item: Google Books Search Exercise #4 part 5
Correct response:
  Full credit will be given to students who fill out at least 4 cells on the Information Evaluation Flowchart.

Exercise response item: Google Scholar Search Exercise #3
Correct response:
  Either "yes" or "no" is a passing answer as long as they have filled out the Information Evaluation Flowchart to show evidence as to why they chose their answer.

Exercise response item: Google News Search Exercise #4 part 5
Correct response:
  Full credit will be given to students who fill out at least 4 cells on the Information Evaluation Flowchart.

Goal 3 - ACS Outcome 1.S:

Given a task of evaluating search results, students will be able to identify elements in determining relevancy. (ACS Taxonomy #S2)

  a) Using a set of criteria defined in the Information Evaluation Flowchart handout.

Measurement Objective: 80% of students will successfully complete each search exercise with at least partial passing (achieving a score of 2 or more). Also 80% of students will show evidence of applying criteria by filling out the Information Evaluation Flowchart handout (achieving a score of 2 or more).
Exercise response item: Google Books Search Exercise #4 part 4
Correct response:
Any book title that appears to be on topic will be viewed as a pass.

Exercise response item: Google Books Search Exercise #4 part 6
Correct response:
Full credit will be given to students/groups who have constructed a new search phrase using synonyms combined with the Boolean OR. This will show that students are pulling relevant terms out of their search results.

Exercise response item: Google News Exercise #3
Correct response:
At the time the answer key was created the correct answer was:
a) San Jose Mercury News
b) 3 Days Ago
c) Sophia Kazmi

Exercise response item: Google News Exercise #4 part 3
Correct response:
Full credit will be given to students who list a title that appears to fulfill the information need stated at the beginning of the exercise.

Section 6

Our instructional session ended with a quick poll that we created to help us assess the students’ understanding of key concepts. To help with the success of this evaluation we choose to keep the poll short in hopes to receive higher quality answer.

To poll the students we used the free online software Poll Everywhere.

The four questions we asked are as follows:

1. You need to find a magazine article published in the last five years. Which Google Tool will give you the best results?
   a. Google Advanced
   b. Google Scholar
   c. Google Blogs
   d. Google Groups
   e. Google Books
   f. Google News

2. You need to find all of the books on speeding, as well as all those about accidents. Which of the following searches will accomplish this?
a. Speeding AND Accidents  
b. Speeding OR Accidents  
c. speeding accidents  
d. speeding accidents

3. What was one new thing that you learned today?

4. What was one thing you wish the instructors had spent more time explaining?

5. After today’s workshop do you feel more confident as a searcher?

Our intent with the poll was to extract as much data from the students as we could about their feelings and understandings concerning the tools that we taught them. We would then compare this poll to the Google Form results we collected before our session. What we are looking for is a change in perspectives concerning their perception of themselves as a searcher. These poll questions were linked directly into our learning outcomes and stated goals described in detail in section 2 of this report.

Two elements may have affected the usefulness of our results. The first issue concerns our inexperience with Poll Everywhere. In preparing for our session we ran through several practices using Poll Everywhere as we have never used it in a live session before. We wanted to be familiar using this software. Everything went smoothly during our practice sessions. However, when we ran the poll during our session it did not function the way we thought it would. We had planned to run the poll off of our notebook computer but needed to quickly re-launch it using the presenter’s computer. This caused the poll results to be displayed on the screen as the students answered them. Also, the poll questions were not advancing correctly on the student’s computers and were also quickly turning on and off. Had these issues not been a problem our results would have been stronger.

Our first two poll questions (questions 1 & 2) focus specifically on objective aspect of the instructional session and have equivalent counterparts in the Google Form. The final three questions (questions 3 – 5) are much more subjective and aim at understanding the student’s feelings toward their ability as searchers. While these questions point directly back toward the students their answers will give us insights on how effective we were as instructors and on what we will need to focus on in future instructional sessions.

Section 7

Memo to the Administration:

As stated in the Strategic Plan for the University of Hawaii at Manoa, our institution is a “premier research institution whose scholars are leaders in their disciplines and whose students are prepared for leadership roles in society.” A major ongoing societal change is
the explosive growth in technology and it is vital that students are prepared to adapt to a rapidly changing information landscape.

Information literacy is integrated into the University of Hawaii at Manoa’s General Education Foundation Hallmarks for Written Communication which requires a course to “help students develop information literacy by teaching search strategies, critical evaluation of information and sources, and effective selection of information for specific purposes and audiences; teach appropriate ways to incorporate such information, acknowledge sources and provide citations.”

We feel that our Google Workshop fits the information literacy component of the hallmarks and can be applied across disciplines. Not only do we demonstrate to students how to use Google search tools, but we emphasize search strategies and critical thinking in evaluating information sources. During the Fall 2011 semester, we presented our workshop to a Psychology 409a course and had a positive student response. Not only did 100% of students rate themselves as feeling more confident in their web searching, but in their class discussion group they made the following comments:

*I’m taking a couple other writing intensive classes so I will definitely try to use some of these strategies for doing research. I think it was good that the librarians discussed how to evaluate the source material.*

*As someone who uses Google on a regular basis not only in his personal life and for scholastic research, but also at work when researching various problems, I believe that the skills that I have gained last class will be tremendously helpful to me personally and professionally.*

*This week’s class, although on a small tangent, was extremely informative. A presentation or demonstration like the one we had in class is something I think all students should have gotten their first year at college.*

Not only does our Google Workshop fit within the Foundation Hallmarks, but it fits into the UHM Library Strategic Plan whose mission is to “support the teaching, research and information needs of faculty, students, staff and the community. Provide physical and intellectual access to the world of knowledge.” Helping students become effective searchers better enables them to access information sources for both coursework and research purposes. The Google Workshop is also designed as a single session which can be adapted to different classes and disciplines, allowing for collaboration with instructors to help their students become better searches; which would fulfill UHM Library’s Strategic Imperative to “integrate information literacy instruction into the undergraduate and graduate curricula through partnerships between librarians and instructional faculty.”

We feel that a collaborative effort allows us to best serve our students. We would like your support in continuing this workshop and in developing future collaborations between the library and instructors.
Appendix 1
Handouts, Hands-on Exercises and Worksheets.
(Some of the formatting has changed to help fit these documents into this report. None of the content was changed in this process.)

Google Advanced Search Exercise

Access Google Advanced Search at http://www.google.com/advanced_search?hl=en or navigate to it by using the menu under the gear symbol on the Google main page.

In your assigned team, use Google Advanced to find an authoritative answer to the following question: What does the law say about road rage?

Before you begin your search, first answer the following questions:

1. What are you looking for? Envision what you hope to find. What do you think your answer looks like?

2. Who do you think would publish this kind of information on the web?

3. What are some keywords that you will use in your search? List two concepts, plus a synonym for each keeping in mind the wording you might expect your anticipated source to use:

For example, finding information on drunk driving and accidents:

concepts: drunk driving, accidents
synonyms: computer use, guidelines

concept:

synonym:

concept:

synonym:

Now you’re ready to search. Construct your search query using your keywords and connecting them with Boolean AND and OR, also select at least one Google Advanced Search command to help narrow down your search. Hint: Look at question #2.

Consult your Google Advanced Search Operators handout and/or ask an instructor for assistance.
Reminder: Use parentheses to help organize your search statement and make sure your Boolean AND and OR are in CAPS.

4. What was your search query using Boolean? Write it below:

5. Which Google Advanced Search command did you use? What did you select and/or type in?

6. List one result that helped answer the question:

   Title:

   Author / Source:

7. Did you find useful results on your first try? (circle one) yes / no

   If you did not find useful results on your first try, how did your team refine or rephrase your search query? Explain.

Answer key:

1) State Law, laws, regulations
   Pass = anything on topic.

2) government, state, lawmakers
   Pass = anything on topic.

3) road rage, aggressive driving, laws, legal
   Pass = 2 concepts + 2 synonyms
   Partial Pass = at least 1 concept + 1 synonym
   Fail = 1 concept or less

4) “road rage” AND (law OR legal)
   **We will guide them when to use quotes for phrase searching, but they need to generate the main structure**
   Pass = use of both Boolean AND and OR (ok if they only use one synonym set)
   Partial pass = use of one Boolean operator

5) Site:.gov
   Pass = site:.gov
   Partial Pass = Selecting a different limiter and showing evidence of reasoning in explaining why
   Fail = Selecting a different limiter with no reason.
Pass = Reasonable source based on the question
Partial Pass = source on topic, but not authoritative
Fail = Not on topic

7) Yes or No + trying new terms or methods.
Pass = Yes or No + trying new terms or methods
Fail = No + giving up
**Google Books Exercise:**

Access Google Books by entering the following link into the navigation bar:  
http://books.google.com

You can also access Google Books by clicking on the ‘Books’ link under the ‘More’ drop down menu on the Google homepage.

1) Google Books specifically searches two different types of media. Just by quickly scanning the homepage are there any clues as to which types of media it searches? If so, write them down below:

_________________________________  &  _______________________________________

2) Do a basic search on Google Books by entering the search phrase *Road Rage* into the search field.

How many items does this search return? __________

Click on the **Advanced Search** option located under the blue magnifying glass next to the search field. The second field on the Advanced Search page says **with the exact phrase.** Re-run the *Road Rage* search using this option.

How many items does this search return? __________

3) Go back to the Google Books home page: http://books.google.com

Remember: Good searchers always browse the collection first!  
Click on the link **Browse Books and Magazines.** On the following screen select **Law** from the **Browse Subjects** menu bar on the left.  
Rerun the exact word phrase search for *Road Rage.*

What is the exact search phrase: ________________________________________________________

How many items does this search return? __________

4) **Search Exercise:**

Now (rather than focusing on law) you are doing research on the **psychological** aspects of road rage and anger induced car accidents. Using Google Books find one useful book for this research project.
Part One (pre-search):

Write down three keywords that you might enter into the search field that might lead you to a book on this specific topic: (Ex: 1. Aggressive Driving, 2. Road Rage 3. Psychology)

1: ____________________________
2: ____________________________
3: ____________________________

Part Two (pre-search):

Keeping these three words or phrases in mind write down what you think will be the most productive search phrase in Google Books (use at least 3 keywords and any of the relevant operators):

Search Phrase: ____________________________________________________________

Part Three (Searching):

Run your Google Books search using the above search phrase:

How many results did you get? ________

From a quick scan of your results page do your results look to be on topic? ______________
If not feel free to reword your search phrase and try a new search. If you got zero results how can you broaden your search to get more results?

New Search Phrase (if needed): ________________________________

Part Four (Evaluation):

Write down the title of the resource you found

1) ________________________________ ________________

Is it (circle one): a free Google eBook / preview / snippit / no preview

Can you find this book at Hamilton Library? (circle one) Yes / No

If so, what is the call number? _______________________

*If none move onto part five*
Part Five:

Using your information evaluation flow chart, consider how useful this item is for this topic. Fill in the cells of the flow chart with any relevant information. As you are scanning the book's page pay close attention to any repeating terms or phases you did not originally use to search with. Write these into the notes section of the flow chart.

Part Six:

Compare your keywords and your search results with the person next to you. Are there places where your phrases are similar and where they are different? Considering all of your keywords and search terms, as a group formulate one new search phrases that you think will return the most relevant resources. Test these results. Were you able to find more relevant resources than you listed above?

New Search Phrase:

Answer Key:

1. Books & Magazines
2. 438,000 & 29,000
4. Search Exercise
   a. Three keywords that are on topic will be viewed as a pass
   b. Passing responses will include at least 3 keywords from the generated list in the previous exercise plus at least one advanced search operator
   c. Answers will be dependent upon the search they entered. Results that appear off topic should be rephrased. If the student indicates that their results do not look to be on topic but there is no new search phrase this will be viewed as a fail
   d. Any book title that appears to be on topic will be viewed as a pass
   e. Full credit will be given to students who fill out at least 4 cells on the Information Evaluation Flowchart
   f. Full credit will be given to students/groups who have constructed a new search phrase using synonyms combined with the Boolean OR. This will show that students are pulling relevant terms out of their search results
Google Scholar Search Exercise

Navigate to Google Scholar by using the menu bar, or access Google Scholar at http://scholar.google.com. Access the Scholar Preferences menu (via the gear menu), add a link to your library, and save preferences. You will be returned to the search page, make sure that the articles option is selected. Begin with a basic search for articles using the keywords: road rage.

1. Are any of the first page results returned dated within the last year? (circle one) yes / no

Click on the “Advanced Google Search” link next to the search box at the top of your results page.

Restrict your results to return articles published between 2010 - 2011. Then click the Search Scholar button in the upper right hand corner to search. Examine your updated results list and select an article within your first page of results with Full-Text Access to view.

2. Fill in the blanks:

   Article Title:

   Author:

   Name of Publication:

   Date of Publication:

Browse over your source and fill out the Information Evaluation Flowchart for Google Scholar.

3. Based on your flowchart results, would this article be relevant to your research topic? (circle one) yes / no

4. How would you revise or refine the search query to narrow your search to find articles about road rage from psychology journals? Please write your new search query below:

5. What other advanced search limiters would you incorporate to narrow your search to Psychology journals? Visit the Google Scholar Advanced menu and look at your options. List one and explain why:
Begin a new search, starting at the Google Scholar advanced search screen, in the first search field at the top “Find articles with all the words” enter the search terms: road rage. Scroll down to “Legal Opinions and Journals” and restrict your search to “Search opinions of: United States Supreme Court” (by using the pull down menu).

<table>
<thead>
<tr>
<th>Legal opinions and journals</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Search all legal opinions and journals.</td>
</tr>
<tr>
<td>☐ Search opinions of All federal courts</td>
</tr>
<tr>
<td>☐ Search opinions of California courts.</td>
</tr>
</tbody>
</table>

6. Based on your first page search results screen, how many results are Supreme Court cases about or involving road rage?

7. Discuss with another student and explain why you think Google Scholar returned any non-relevant results:

Answer Key:

1) No
2) (Credit/pass if they fill out all the fields)
3) yes or no is okay. Passing is based on them filling out the flowchart.
4) Adding terms such as “behavior” or “study” or rephrasing language (for example: to “aggressive driving” which is more fitting than “road rage”).
5) limiting articles by subject area: Social Sciences, limiting by publication (assuming they know of a title of a particular psychology journal), or limit by author if they know of an expert.
6) 0
7) Google is only returning results on one out of two words or because I didn’t use quotes. (Pass/credit = some understanding of what went wrong.)
Google News Exercise:

Direct your browser to the Google News homepage by using the following link:  
http://news.google.com  
Or by navigating to it from the Google Homepage.

1) Google News has one of the more interactive search interfaces on Google. Take 1 minute to look around. Be sure to click on links you have never explored before.

2) Click on Advanced News Search next to the blue magnifying glass. Type Road Rage into the Exact Phrase field and in the date limiter select “return articles added to Google News: Past Month. Then click “search”

How many articles does this search return?: ____________

Repeat this search but replace Road Rage with Aggressive Driving.

How many articles does this search return? ____________

Is there a way to combine these two individual searches into one search? If so run the search and note your results.

Search Term: ____________________________________________

Number of Results: ____________

3) Identifying Your Search Results

What news source does your first search result come from? ________________

When was this article published? ________________

Is there an author listed? ________________

4) Search Exercise:

For a major class project you need to find one article that reports about how the law (Police, the Courts ... ) is dealing with an incident of Road Rage. Your article needs to be from 2011 and from the United States.

1) Pre-Search

Using the Google News homepage and the Advanced Search Screen as a guide, write down three keywords, phrases or search options that will help you find the most relevant result.

1) __________________________
2) __________________________________________________________________________________

3) __________________________________________________________________________________

2) Run Your Search and Browse the First Page of Results:

Use advanced search to create your search then write it into the graphic below:

![Advanced Search Interface]

Did your search return relevant results? Yes / No

If you needed to change your original search explain that here as well. Select one article from your search results.
Changes: __________________________________________________________________________________

3) Write Down The Title of The Article You Selected:

________________________________________________________________________________________

4) Generate Synonyms:

Quickly scan your article and see if there are any synonyms, keywords or strategies that could have helped your search be more precise. Write those down below.
(Ex cops v. police; aggressive driving v. road rage)

________________________________________________________________________________________ & __________________________________________________________________________________________ & __________________________________________________________________________________________
5) Group Evaluation:

Get into your groups and share the article you found as well as the searches you ran. How were your searches different? Similar? Did anyone select the same article? As a group decide which of your articles is the most relevant for the assignment described above.

Using the **Information Evaluation Flowchart** gather as much information about this article as you can. Write down the information about the article on each group members flowchart. Also, decide as a group what the most efficient search strategy would be to find similar articles. Write that strategy below. **Be Prepared to Show The Class What You Have Discovered!**

Best Search Strategy:

---

**Answer Key:**

2. 858; 162; “road rage” OR “aggressive driving”; & 1,100
3. San Jose Mercury News; 3 Days Ago; & Sophia Kazmi
4. Search Exercise
   a. Any keyword that is on topic to the information need will be viewed as passing
   b. A pass will be given to students who show evidence of using any of the Google News advanced search options
   c. Full credit will be given to students who list a title that appears to fulfill the information need stated at the beginning of the exercise
   d. Any items that are different then what the students listed in part one of this search exercise will be viewed as a pass. Not listing any synonyms will be viewed as a fail
   e. Students will show active participation in their group discussion and this will be apparent in their responses that they share with the class. Full credit will also be given to students who fill out at least 4 cells of the Information Evaluation Flowchart
### Information Evaluation Flowchart

<table>
<thead>
<tr>
<th>Question</th>
<th>Google Books Title</th>
<th>Google Scholar Title</th>
<th>Google News Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who Is The Author?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who Is The Publisher?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Why Is It Being Produced?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who Is The Audience?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is The Information Accurate?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What Kind Of Publication Is It?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How Current Is It?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How Relevant Is It?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Google Advanced Search Operators

The OR operator: OR
Remember OR means more. Using OR informs Google that you would like either term to be present, but not requiring both. Google will return results with one or more of your terms. Example: cars OR vehicles

The AND operator: AND
Narrows/restricts your search. Using AND informs Google that you require both terms present. Can also be used multiple times: aggressive AND driving AND behavior tells Google you require all three terms.

Combining AND and OR operators: ()
Similar to writing a formula, use parenthesis to inform Google the order of processing. For example: (car OR vehicle) AND accidents will tell Google to do search for car OR vehicle first, and then combine that result with AND accidents.

The NOT operator / Excluding Terms: -
Using the minus sign (-), will inform Google to exclude certain words you do not want to appear in your search results. For example: lion -os would remove results about the Lion OS (operating system) from your search about lions.

Phrase Search: “”
Double quotes around a set of words, will tell Google to search for those words in that exact order. Remember you and combine phrase searches using AND and OR. For example: (“motor vehicle” OR car) AND “drunk driving”

Searching within a specific website or domain: site:
For example: manatee site:www.cincinnatizoo.org will only produce search results from only the specified website, in this case manatee information from the Cincinnati Zoo web site.

You can also use site: to restrict your search query to a certain class of websites. (For example: site:.gov will search only government websites)

Wildcard (a.k.a. Fill in the Blanks): *
Using the asterisk (*) to fill in for an unknown term, Google will perform a search using the * as a placeholder and can be used in a phrase search. For example: “house of * and blues” will give results such as House of Jazz and Blues and House of Lindy and Blues.

Search exactly as is: +
Using the plus sign (+), will stop Google from trying to be too helpful. Sometimes Google will offer search results based on synonyms or alternate spellings (of what Google thinks you’re searching for).

You can also search using the additional operators. Please note, when using these, do not put spaces after the colon as demonstrated in the examples below.
intitle:Cincinnati → restricts results to items with Cincinnati in the title of the webpage

intext:"road rage" → restricts results to items with "road rage" in the text

filetype:pdf → restricts results to a specific file type

These can also be combined with search operators above. For example: ("peanut butter" OR 
"chocolate chip") AND cookie AND recipe filetype:pdf results in results showing only pdf files
of peanut butter cookie recipes and chocolate chip cookie recipes.

Why have all these search commands? Using advanced search operators in the standard
search box allows more flexibility than only using the advanced search form fields.

What about getting the most current results? When viewing your search results, in the
left column menu, you can further narrow your results by indicating a date range. Date
range options are also available in the advanced search menus.

Keep in mind Google is always transforming, check the help files to remind you of what is
available in each search interface along with any new features.
Information Evaluation Worksheet

The Internet is full of information where anyone can create and publish anything. Use this worksheet to help determine the quality of information you are viewing.

Who Is The Author?

Is an author listed? Who is it? Does the author have any credentials? Is s/he an expert on the topic? Does someone who the information directly affects employ the author? Is there a bias? Can you find a bio? Did they get paid to write this? Where did the money come from? Is the author the primary source?

Who Is The Publisher?

What is the point of view? Are all sides considered? Is it subjective? Objective? Is there a claim at stake? What is the publisher’s reputation? Do you trust them? If so why? If it’s a website does anything in the URL help determine the quality of information?

Why Is It Being Produced?

What is the argument? Who is funding the research? Is it an advertisement? Is it designed to sway your opinion?

Who Is The Audience?

How technical is the language? How much detail did they consider? Is it pandering to a specific narrative/point of view?

Is The Information Accurate?

Are there links or citations? Do they lead to authoritative works? Do they support multiple sides of the debate? Is there a bibliography? Can the information be verified? Can it be replicated? Can you find reviews?

What Kind Of Publication Is It?


How Current Is It?

Is there a date of publication? When was the research conducted? Does currency matter for this topic? Has there been a major change in the subject area since the information was produced? When was the last update? Do the links work?

How Relevant Is It?
Does the information help fill you information need? Does it support your thesis? Does it help lead you to other sources? If so what are they? Does it give you new keywords to search with?
Appendix 2
Evaluation Questions using Poll Everywhere

You need to find a magazine article published in the last five years. Which Google tool will give you the best results?

To join this session, send a message using the keyword 358961
Start this poll to accept responses

You would like to find all the books on speeding, as well as all those about accidents. Which of the following searches would accomplish this?

To join this session, send a message using the keyword 358961
Start this poll to accept responses
What was one new thing that you learned today?

"Learned how to use google better."
21 days ago

"how to use google books"
21 days ago

"How to do advanced searches"
21 days ago

What is one thing you wish the instructors had spent more time explaining?

"google new"
21 days ago

"google news"
21 days ago

"google scholar"
21 days ago
After today's workshop do you feel more confident as a searcher?

To join this session, send a message using the keyword **358961**

Start this poll to accept responses

- Very Much: 63%
- Somewhat: 37%
- No Change
- Less confident

Total Results: 19
Appendix 3
Slides used during lecture
(The presentation will begin with slide one on the following page)
Google Workshop

Jennifer Hamada and Philip Whitford
PSY 409a / LIS 655
Fall 2011

Overview

• How Google Works
• Boolean Search Operators
• Principles of Good Searching
• Google Advance Searching
  • Using Operators & Limiters
• Information Evaluation
• Google Books
• Google Scholar
• Google News
• Questions & Answers
• Exit Poll

How Google Search Works

How Google Search Works

Basic Boolean Logic

Consists of 3 operators
  - AND -- indicates both terms must be present
  - OR -- indicates either term may be present
  - NOT -- indicates one term must not be present

Boolean Searching with Google

Why Use Boolean in Searches?

• Boolean operators work to combine search terms in meaningful ways.
• Creates more precise search queries.
• Gives you more control.
• Entering multiple search terms into Google without Boolean, may give unexpected results.
Boolean **AND**

Narrows / restricts a search by combining terms by telling the search engine you require all terms to be present:

- unicorns
- unicorns AND fighting
- unicorns AND fighting AND techniques

Useful for looking for specific information.

In Google: Does not necessarily mean they will appear next to each other, use the phrase search operator for exact phrases.

---

Boolean **OR**

Expands a search by including results for either search term that may show up separately or together.

Useful when searching with synonyms.

- drunk driving OR DUI

Useful for information gathering, when searching for multiple items at once.

- zombies OR unicorns

Remember: **OR** means more!

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Boolean **NOT** / minus sign (-)

Excludes terms from your searches.

- vikings -Minnesota
- vikings -football

Useful for filtering out unwanted results.

Can exclude multiple terms:

- car AND accident -lawyers -attorneys

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Google is Your Matchmaker

Matching your search query to items in Google’s index.

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Meet Bachelor #1:

He asks Google to retrieve:

dog AND cute AND funny

Enjoys long walks on the beach and wavy bacon. He knows what he wants when he wants it.
Meet Bachelor #2:

He asks Google to retrieve:

dog AND (cute OR funny)

Enjoys peanut butter cookies and rolling in wet grass.

Let's compare:

dog AND cute AND funny

dog AND (cute OR funny)

Which of our bachelors will have the most Google matches? Why?

Google Advanced Searching

Harnessing Operators & Limiters

Principles of Good Searching

• Have clear idea of what you are looking for
  o Who might publish this information online?
  o What language or terminology would they use?

• Use descriptive words

• Make use of available tools / options

Search Operators & Limiters

Operators:

• Instruct Google how to use your search terms.
  o Includes Boolean operators
  o Works to include or exclude
  o Can be entered into the standard search box

Limiters:

• Restrict your results
  o Selected from Google's pull-down menus or check boxes
  o Works to filter your results

http://www.google.com
Information Evaluation

Eight important questions to ask

#1: Who Is The Author?
Is an author listed? Who is it?
Does the author have any credentials?
Is s/he an expert on the topic?
Does someone who the information directly affects employ the author? Is there a bias?
Can you find a bio?
Did they get paid to write this? Where did the money come from?
Is the author the primary source?

#2: Who Is The Publisher?
What is the point of view?
Are all sides considered?
Is it subjective? Objective?
Is there a claim at stake?
What is the publisher’s reputation?
Do you trust them? If so why?
If it’s a website does anything in the URL help determine the quality of information?

#3: Why Is It Being Produced?
What is the argument?
Who is funding the research?
Is it an advertisement?
Is it designed to sway your opinion?

#4: Who Is The Audience?
How technical is the language?
How much detail did they consider?
Is it pandering to a specific narrative/point of view?

#5: Is The Information Accurate?
Are there links or citations?
Do they lead to authoritative works?
Do they support multiple sides of the debate?
Is there a bibliography?
Can the information be verified?
Can it be replicated?
Can you find reviews?
#6: What Kind Of Publication Is It?

An authoritative website?
Personal blog?
Scholarly journal?
Book?
Is it self-published?

#7: How Current Is It?

Is there a date of publication?
When was the research conducted?
Does currency matter for this topic?
Has there been a major change in the subject area since the information was produced?
When was the last update?
Do the links work?

#8: How Relevant Is It?

Does the information help fill your information need?
Does it support your thesis?
Does it help lead you to other sources?
If so what are they?
Does it give you new keywords to search with?