Why does Google sometimes retrieve search results that seem totally unrelated to what you want? How come you can't find anything in a database when you're sure articles have been written on your topic? The fact is, computers are great at quickly scanning loads of text to match a search string, but less adept at understanding the meaning of that string. As a researcher, you'll need to translate what you want into characters a database or search engine can identify.

- Search tools take whatever you enter and look for those characters in their databases.
- So, if you enter *james sprunt community college*, a search tool will find every record in the database where all of those words appear, but will not find records where only *james sprunt* or the abbreviation *jscc* appears, even though you might find those results useful.
- On the other hand, if you search for *java* to learn about the Indonesian island, you'll also get results about coffee, computer programming, American towns, ships, cars, and more. The computer does not know which version of *java* you mean, so it finds all of them.
- Generally, the simpler your search string, the more results you'll get. So *franklin* would find everything related to any person, place, or thing named Franklin, but "*benjamin franklin*" narrows it down just to results about that name.
- If you're new to keyword-searching or even a specific research topic, you'll want to start simply, then add terms to narrow your search based on your initial results.
- Conduct as many searches as necessary. Don't feel that you're stuck with whatever hits your first search returns. Quickly scan your results to decide what changes to make to your search string in order to get closer to what you need. For instance, you'd get a lot of results for *experiential learning*, but you might notice that one of your top results mentions multiculturalism. If this piques your interest, try a search like "*experiential learning* AND multicultural." Database research is never a one-step process – that's okay!

- Zero hits? First, check for typos. If everything looks okay, your search is probably too specific, so try to take out a keyword or search for a broader concept. So instead of getting a poodle to roll over using treats, try *dog training*.
- Most search tools assume you want every keyword to appear in every result – sometimes called "automatic AND." A few assume *OR* – that you want at least one of the terms in each result. Though sometimes unnecessary, it's a good idea to get in the habit of telling the computer if you want *inequality AND discrimination*, or just *inequality OR discrimination*.
- Typically, you should omit what are called "stop words" – things like "the," "a," "of," "from," "is," "be," etc. – which don't really add meaning to the search (except in exact phrase searches). Distill your topic into the terms that distinguish it. For example, replace *president of the united states of america* with "*united states* AND president.
- The larger the database, the more terms you can include. Google indexes billions of webpages, so you can enter a very detailed search and still find results (though they may be of poor quality). *Academic Search Complete* (ASC) contains records of thousands of journals and magazines, which in turn contain thousands of articles, so you can successfully use a fairly targeted search. However, by default, ASC searches only brief records, not the full-text, of articles, so that's where your keywords will be found. The *library catalog* only includes records of books and AV items at James Sprunt and other NC community colleges, so you'll want to use broader search terms to find what you need there.
• Continue to the “Search Operators” section below to learn more about combining keywords. Remember that search tools may use different symbols (NOT or a hyphen, * or $ to truncate): if your search doesn’t seem to be executing properly, double-check the database’s Help pages to make sure you’re using the right operators.

SEARCH OPERATORS

AND narrows a search
Results must contain both terms
• technology AND literacy
• slavery AND women
• twain AND criticism

OR broadens a search
Results must contain one or both terms
• poems OR poetry
• jail OR prison
• sex OR gender

NOT excludes a term
Results must not include the term after NOT
• java NOT coffee
• radiation NOT cancer
• Web search engines may use a hyphen, as in jfk -airport

Parentheses ( ) nest operations
Operations in parentheses are executed first
• teaching AND (creationism OR "intelligent design")
• "solar power" OR (green AND energy)

"Quotation marks" preserve phrases and names
Results must contain exact terms in order
• "fossil fuels"
• "amy tan"
• "tyranny of the majority"

Truncation symbols * or $ indicate roots
Results can include any variation on the root
• histor* will find history, histories, historical, historicity, etc.
• cinem$ will find cinema, cinemas, cinematic, cinematography, etc.

Wildcard or substitution symbols ? allow unknown characters
Results will include spelling variations
• wom?n will find woman, women, and womyn
• mcl?ughl?n will find mcloughlin, mclaughlin, mclaughlan, etc.
Breaking down topics

Most topics you’ll research can and should be broken down into smaller topics – first, because this will help you better understand your topic and, second, because useful articles may address only one or two aspects of a complex issue.

<table>
<thead>
<tr>
<th>General topic</th>
<th>Related keywords and concepts</th>
</tr>
</thead>
</table>
| unemployment  | • Synonyms: unemployment, unemployed, joblessness  
|               | • Statistics: "unemployment rate"  
|               | • Similar concepts: underemployment, underemployed  
|               | • Programs: "unemployment insurance", "unemployment benefits", "unemployment claims", "99 weeks"  
|               | • Policy: "social insurance", entitlements, welfare  
|               | • Causes: "structural unemployment", "technological unemployment", outsourcing, disability  
|               | • Counters: "job creation", "job growth", hiring, insourcing  
|               | • Related: "working poor", "real wages", "minimum wage"  |
| abstinence-only| • Synonyms: "abstinence-only", "abstinence education"  
|               | • Alternatives: "sex education", "sex ed", "comprehensive sex ed"  
|               | • Concerns: "safe sex", contraception, "birth control", "teenage pregnancy", "teen pregnancy", "teen moms", "sexually transmitted infections", STIs, STDs  
|               | • Policy: "federal funding", "curriculum standards"  
|               | • Related: "virginity pledge", "purity ring", "faith-based"  |

Remember that writers may use different terms to talk about similar topics, especially politically polarizing ones. Vary your searches to identify distinct views. What types of results do you think you’d find using the following search strings?

- "illegal aliens" versus "undocumented immigrants"
- "second amendment" versus "gun violence"
- "marriage equality" versus "traditional marriage"
- "pro-abortion" versus "anti-choice"