

“ASK THE LIBRARIAN” about ... EFFECTIVE SEARCH STRATEGIES

Pātai: (Question)

***Where should I start searching ... in Google, a catalogue or a database?
Is it better to use one and not the others? Often I retrieve too few or too
many results, where am I going wrong?***

Librarian Jennifer Hobson replies:

Where you begin searching is up to you, but knowing the key resources in your subject discipline and how they work is essential to becoming an *effective searcher*. Where to look generally depends on your *subject area* and the *type* of information required.

Before you begin searching consider the following:

- Are you looking in the right place?
- Are you familiar with how the system works?
- Do you know how to adapt your search strategy when you find nothing/too few results, or too many irrelevant results?
- Are you confident that everything on the topic has been retrieved?

If not then read on...learning effective search strategies will enable you to become a confident searcher who knows what to watch out for and does not give up when one strategy fails.

To save you time and confusion it helps to understand the difference between catalogues and databases. A library catalogue is good when you are looking for books. Journal articles will not come up in your library catalogue search results, although you may find the titles of journals. You will also find audiovisual and other materials held in the library.

Databases are good when you are looking for journal articles on a topic, but keep in mind that not all databases contain full text, in which case you will need to check the Library catalogue for the journal title. Searching Google, or other search engines, is fine but can be time-consuming and can yield biased, basic or profit-driven information. Despite this, the Internet is a valuable source of information, so it is a good idea to learn some web savvy searching strategies.

Good research practice involves systematic searching across multiple resources using multiple strategies. There is no one ‘best’ search strategy, but there are general search techniques that remain the same regardless of the search interface.

Top 20 Searching Tips

Before Starting

1. *Create a search strategy before you begin.* Separate out the main concepts or components of your search and brainstorm as many alternative keywords and synonyms as possible for each concept. Consult a dictionary, thesaurus or encyclopedia:
<http://www.freebyte.com/dictionary/> and <http://www.freebyte.com/reference/>

2. *Systematically identify where you will search.* Be wide-ranging. Search library catalogues. *Union* or *national* catalogues are useful as they show the combined library holdings for a country. Some catalogues are closed access, though many are freely available online (but you might not have borrowing privileges). This web page lists New Zealand and international library catalogues:
<http://www.library.auckland.ac.nz/gateway/libcats.htm>

University Library websites usually list databases relevant to a particular subject area or discipline. However, you will need to belong to the University to access many of these. You will not have access once you leave University, so make the most of them while you can.

When searching the World Wide Web some different search strategies are generally required (see item 19 below).

Know Your Catalogue and Database Search Tools

3. *Always consult the online help.* Search systems vary between catalogues and databases. This can be frustrating. The symbols which make up your search tool kit (*, ?, \$, !) may be different, but every catalogue and database has online help so make sure you use it.
4. *Be cautious of natural language searching.* This is when you use regular spoken language to type in a sentence or ask a question and the search results are ranked according to *relevancy*. However, many databases do not offer this functionality. So, unless you know what you are doing, it is best to avoid randomly typing a string of words or a whole sentence into the search box of a library catalogue or database ... your results may be misleading or incorrect. Follow the tips below instead.
5. *When keyword searching use the Boolean operators AND, OR, NOT to combine or connect your keywords.* These will broaden or narrow your search when used properly.
 - AND Both terms must occur (combines different concepts; narrows your search)
māori AND health
 - OR Either some or all of the terms can occur
māori OR polynesian OR indigenous (combines synonyms or related concepts; broadens your search)
 - NOT one term but not the other (narrows your search by exclusion)
pacific not asia
6. *Understand how Boolean operators work.*
 - When using the AND operator and the OR operator in the same search some databases will process the search statement differently depending on the word order (some process OR before AND, or vice versa).
 - To avoid having to find out how each database processes the search statement use parentheses, or brackets (), sometimes called nesting. Enclose the words combined with OR in parentheses. Everything in parentheses is processed first:
māori AND (health OR wellbeing).
 - If your search screen has multiple boxes, each box acts as a set of parentheses. In which case use OR within the box, and use AND between the boxes. Some guide you to selecting from drop down menus e.g. All of these (=AND); or Any of these (=OR).
 - Here are some useful online tutorials:
<http://www.library.auckland.ac.nz/docs/helpsheets/boolean-combining-keywords.pps>
<http://lib.colostate.edu/tutorials/advboolean.html>

<http://www.newcastle.edu.au/service/library/tutorials/infoskills/finding/page13.html>

7. *Use Truncation and Wildcard symbols (*, ?, \$, !)* to pick up variant word endings or replace a letter. This saves you having to search on word variations:
Truncation: *addict?* Searches for addict, addicts, addiction, addictions, addictive
Wildcard: *wom*n* Searches for woman, women
Warning: Watch where you truncate (*rat?* will be too broad, instead search for *rat OR rats*). Databases and catalogues have different truncation and wildcard symbols. It is best to look up the database online help, but the following source will give you some idea: <http://info.library.unsw.edu.au/skills/truncation.html#abc>.
8. *Use adjacency or proximity.* This allows you to narrow your search and to be more specific. *Use quotation marks* to search for one word next to another (as a phrase) e.g. *“well being”*. Or find one search term within X number of words of another search term e.g. *addiction adj3 coffee* (finds addiction within 3 words of coffee).
9. *Use Subject headings.* These are standardised terms or terminology that represents the major content of a particular work and can help increase the relevancy of your results e.g. search on the subject heading *lactose intolerance* instead of the keywords *milk AND allergy*.

Subject headings can save you from searching on every synonym of a word and are also useful when words in the title or abstract do not reflect the major content of an article, and are therefore not retrieved in a keyword search. This search functionality may have different labels in different databases e.g. Browse Topics, Subject Guide, Thesaurus, Map Term to Subject Heading, Subject Terms, Subject Search.

Use Different Search Strategies

10. *Search for keywords in the “Title” field.* A quick and easy way to find a few items to get started. If the keyword appears in the title of a document it is likely to be ‘relevant’. Look for search boxes with drop down menus that allow you to search in particular fields.
11. *Find something on topic and check the subject headings.* It can be as simple as clicking on a subject heading link and following the trail, or doing a *subject search* once you have identified a useful subject heading.
12. *Find related (similar) or cited.* When you find something on topic watch out for links to *find related* or *cited*. This will lead to items on similar topics. Web of Science is the major ‘citation’ database and helps quantify the ‘impact factor’ of a work on its respective discipline. Scopus and Google Scholar are also good ‘cited by’ places to search. When you find something on topic check the *bibliography* for related works.
13. *Use both keyword and subject searches.* For comprehensive searches, do keyword searches and subject heading searches. This is more time-consuming, but thorough.
14. *Search in multiple databases.* This is a more difficult strategy but necessary when you need to be very comprehensive, or to establish the extent of knowledge in a subject area. Do not limit yourself to just one database. If your topic is inter- or multi-disciplinary, you may need to consult databases in more than one subject area. Some databases and disciplines require more sophisticated or specialised methods of searching, e.g. medical and health sciences:
<http://www.library.auckland.ac.nz/subjects/med/guides.htm#helpsheets>
<http://www.alia.org.au/groups/aliasa/interalia/2001.5/health.html>

Be sure to check out the support services and resources your local library provides in your subject area.

15. *When you retrieve too few results (or nothing) ...broaden your search.* Try using one of the following: use more synonyms (combine with OR); use truncation and wildcards; think of broader terms; remove the least important concept (search on two concepts instead of three) or find a relevant subject heading.
16. *When you retrieve too many results...narrow your search.* Try adding another concept (search on three concepts instead of two); search for a phrase instead of two separate keywords; think of narrower terms or find a relevant subject heading.

Also useful are the *limiting features* in search systems. Often you can limit by years (to the most recent or last 10 years), age groups or publication types (journal articles not newspapers). Try limiting your keyword searches to specific fields (e.g. title, abstract). There are various methods to limit so investigate this feature in the database or catalogue.

17. *When your results are not on topic, try searching on different keywords, or in a different database.* Refer back to your concept map, or consult a thesaurus if you haven't already. Are you searching in the right database for your topic? Are you combining your concepts correctly?
18. *When you retrieve nothing (no hits).* Are you using the correct search option? Are you searching in the right place? Have you misspelled a word? Always check your spelling (even when you have got results e.g. watch out for English versus US spellings).
19. *Searching the World Wide Web.* This is good when looking for current or breaking news. The best information often comes from the reputable websites of associations, societies and organisations which can contain a wealth of information about meetings, news, publications and policy.
 - Government websites are often rich sources of statistical and political information: <http://www.library.auckland.ac.nz/subjects/stats/offstats/>
 - When searching Google use the advanced search to limit your search to reputable domains for academic (.ac), educational (.edu) or government websites (.govt, .gov). Help searching Google: <http://www.google.com/support/?ctx=web>
 - When searching the Web always evaluate what you find: <http://www.library.cornell.edu/olinuris/ref/research/webcrit.html>
 - Web searching tips: <http://searchenginewatch.com/showPage.html?page=facts>
 - How to choose a search engine: <http://www.internettutorials.net/choose.html>
 - Help searching Google Scholar: <http://web.library.emory.edu/services/ressvcs/howguides/googlescholar.html>
20. *Always consult a librarian.* Don't waste hours going around in circles. Librarians are very skilled, not to mention patient... it is ok to ask for help when you don't know, are unsure, or still confused.

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