

Getting started with your literature search.

What is a literature search?

A systematic search for information, using authoritative peer-reviewed sources. How comprehensive it should be depends on the timeframe and the size of the project.

Undergraduate dissertation? Use books (reference books, textbooks and research monographs), journal articles and academic websites.

Postgraduate research? Involve a wider range of sources, e.g. theses; conference proceedings; patents; e-prints; statistical sources; newspapers; government publications.

Search tools.

There is no single all-encompassing search engine.

Sources	Tools (accessible via SOLO)
Books (reference books, textbooks and research monographs)	Library catalogues (e.g. Oxford's SOLO, or external ones like COPAC or WorldCat).
Journals	Library catalogue, OU e-journals list .
Journal articles	Databases: bibliographic (e.g. Web of Science , Scopus), or full-text (e.g. ScienceDirect).
Conference papers	Databases such as Conference Papers Index (CSA) or Conference Proceedings Citation Index (Web of Science).
Newspapers	Databases: e.g. Nexis UK .
Theses	Library catalogue, repositories (e.g. ORA - Oxford Research Archive), Databases (e.g. Index to Theses), external e-theses websites (e.g. EThOS).
Patents	Databases (e.g. Scopus), or Patent offices (e.g. USPTO).
E-prints and research reports	Archives/repositories (e.g. ORA, external sites like ROAR, OAlster), Google Scholar.
Web sites	Scholarly search engines (e.g. Scirus for science & medicine), subject gateways (e.g. BUBL, Intute).

(adapted from original by Elaine Blair <http://www.lib.strath.ac.uk/sciweb/guides/startlit.htm>).

Getting started.

1. Start with background information (spelling, definitions, related terms). Try a quick reference collection such as [Credo Reference](#) or Oxford Reference Online.

2. Consult subject encyclopedias and handbooks for more in-depth information, including recent developments and further reading.

Get to know the key resources for your subject, such as the online [Encyclopedia of Life Sciences](#) or the McGraw-Hill Encyclopedia of Science & Technology.

3. Books. Textbooks give an overview, research monographs an expert review of a specific field or on a broader subject which includes yours. Use the library catalogue [SOLO](#).

Browse the shelves. Books in the Radcliffe Science Library are arranged by subject using the Library of Congress classification scheme: <http://www.ouls.ox.ac.uk/science/libraries/sequence>

4. Journal articles. Review articles summarise the topic and are a good starting point. Journal articles and conference papers are more specialised and up-to-date.

Bibliographic databases (abstracting & indexing services) are the best tool for retrieving references to articles from a broad range of scholarly journals. Some (e.g. Scopus) also include conference papers. Oxford's database list is at <http://oxlip-plus.ouls.ox.ac.uk>

The search process step by step.

Step 1: Define your topic and keywords

- what aspects are you focussing on? is your research question clear & answerable?
- what type of information do you require (broad overview, experimental methods, case studies)? Is there enough information available?
- what time period (current or historical)?
- what geographical area? (country names can change or have variants.)

Step 2: Identify alternative keywords

- Identify a range of search terms (including broader terms, narrower terms, related terms, and alternative spellings).
- Synonyms, alternative phrases and commonly used abbreviations or acronyms, e.g. MRI, magnetic resonance imaging.
- Terminology or meanings may change over time, e.g. wireless.
- Differences in UK and US terminology (mobile phone, cell phone) and spelling (behaviour, behaviour).
- Interchangeable concepts, e.g. inoculation, vaccination, immunization.
- Consider the context, e.g. *clutch size* could refer to birds' eggs or motor vehicles.

Subject indexes

When journal articles are added to a bibliographic database, or books to a library catalogue, they are indexed with a set of subject headings which describe them.

Where possible use this indexing (descriptors, or tags), to make use of the controlled vocabulary (thesaurus) of standard terms in the subject. Select the index term that matches (or maps to) your search term, and retrieve articles on your subject even if they don't contain your original word.

Step 3: Select a relevant database

Choose databases which cover your topic. You should search more than one to be thorough, e.g. Embase and Medline both cover Medicine. Oxford's database list is at <http://oxlip-plus.ouls.ox.ac.uk>. Consult the Subject tab to view the key sources for your subject.

Step 4: Search techniques: Truncation, Wildcards, Phrase and Proximity searching

These are all techniques for improving the results of keyword searching. You will need to check the conventions of a database or search engine, but these are commonly used:

Truncation allows you to search on the stem of a word to retrieve variant endings, e.g. *imaginat** gives *imagination*, *imaginations* and *imaginative*.

Wildcards can often be used within words, to retrieve alternative spellings. In Web of Science, for example:

\$ retrieves either 0 or 1 characters, e.g. *colo\$r* will find *color* and *colour*

? retrieves a single letter, e.g. *wom?n* will find *woman* or *women*

Phrase searching retrieves an exact phrase using quotation marks, e.g. "higher education".

But beware of the restriction on word order, e.g. "public health policy" will not retrieve articles containing the phrase *policy on public health*.

Proximity searching allows you to specify how far apart keywords should be. On the CSA platform, for example, 'carbon within 3 emissions' would retrieve records with the keywords found within 3 words of each other.

Step 5: Combine your terms

Use the Boolean operators AND / OR / NOT to combine terms or search sets.

AND will retrieve all your search terms. In most search engines and databases there is now an implicit AND between terms.

Use **OR** to retrieve one or more terms with a similar meaning, e.g. HIV OR AIDS.

Brackets can be used to clarify the search by grouping the different concepts appropriately, e.g. (HIV OR AIDS) AND (policy OR policies).

Step 6: Use the Limits

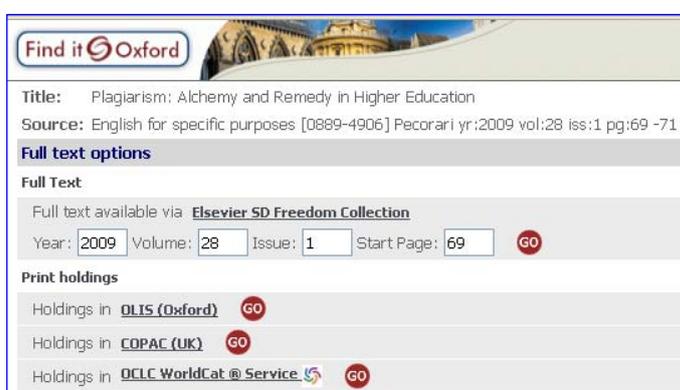
There are different types of limits or filters you can use. Construct your search then use appropriate limits if necessary to focus it. Limits vary between databases but examples are Publication type (e.g. Review articles), Date or Language.

Some databases have additional limits such as age group, study type (e.g. clinical trial) etc.

Step 7: Locate the full-text and Evaluate your results

Assess your findings when you have completed the search, and repeat or refine as needed. Find a good article, and use its keywords and subject headings to link to related papers.

The  button will offer links to the full-text if it is available online (via an Oxford University subscription or for free). If no electronic full text is available, you can link to the OLIS Library catalogue for possible print holdings.



If Oxford University does not have the item, use our Document Supply service:

<http://www.ouls.ox.ac.uk/science/services/docsupply>

Step 8: Keep a file of useful references and be sure to acknowledge your sources.

Keep good records of what you find and the search process you used.

To save and organise your references use a tool such as EndNote or RefWorks:

http://www.ouls.ox.ac.uk/_data/assets/word_doc/0019/27361/Referencing.doc

Sample topic

Investigate the prevalence of plagiarism among university students

Plagiarism (concept one)

University students (concept two)

Alternative terms:

concept one

Collusion

Academic integrity

Cheating

concept two

Universit*

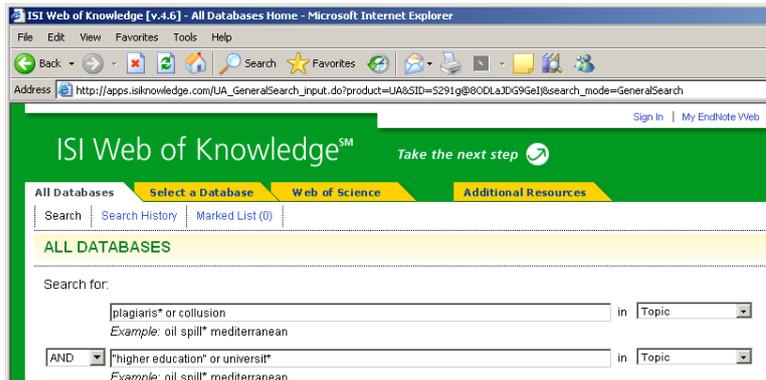
Higher education

College*

Search string: keep it simple!

(plagiaris* OR collusion) AND ("higher education" OR universit*)

Note that some databases have 2 or more search boxes, to help you construct the search without the complication of brackets, e.g. Web of Knowledge, Scopus.



Troubleshooting

Too many irrelevant hits? Try:

- Using the indexes (subject, author, journal title).
- Using more precise keywords to describe a specific aspect of the topic
- Using “exact phrase” or proximity searching. *Higher education* without quotation marks retrieves irrelevant hits where the words appear in any order, anywhere in the record.
- Using the Limits, such as geographical location, age group, study type, publication date
- Searching by Title or Title and Abstract, rather than all fields.
- Using the Combine Search option to fine tune your search.
- Using NOT to exclude an unwanted concept. Use only if results have a strong bias towards a topic that you do not want at all as you may remove some useful information.

Too few useful articles? Try:

- Alternative spellings (American and British).
- Synonyms – alternative words or phrases to describe your topic/concept.
- Broader terms that encompass your specific topic.
- Removing one or more search term or limits – your search may be restricted by too many different elements.
- Truncation or wildcards.
- Searching ‘in any field’ or ‘in title and abstract’ rather than just in title.
- Exploring the references at the end of a useful article.
- Linking to articles which have cited a useful article (“Cited by”).
- Searching another database, e.g. switch from Medline to Embase.

Cited Reference searching

This enables you to discover if an article has been cited by others since its publication.

The Web of Science offers full cited reference searching; Scopus and the Ovid databases provide links to citing articles.

Isn't [Google Scholar](#) all I need for my research?

No. For a comprehensive literature search you should also use our licensed databases. Why? Subject coverage, content and updates clearly indicated; indexing and organisation of data; search options and search tools; authenticated access to licensed resources on and off-campus; reference management, saved search and alerting options.

For a summary of strengths and weaknesses see the McMaster University's Health Science Library guide to Google Scholar at <http://hsl.mcmaster.ca/resources/googlescholar.htm>

For further help with your literature search or review, contact your Subject Librarian.

See the list at <http://www.ouls.ox.ac.uk/libraries/subjects/librarians> or consult the guides at <http://www.ouls.ox.ac.uk/services/guides>.

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