

AIRS

Advanced Information Research Skills

AIRS Module 4

Comprehensive
search



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Module 4: Comprehensive search

SELECTING RELEVANT DATABASES

This module covers databases for research in some detail, outlines techniques and syntax for search statements, and includes an activity to practice advanced searching in databases. By the end of this module you will be able to:

- Search the literature systematically and comprehensively by formulating effective search statements using appropriate databases and advanced search techniques.

4.1 What is a database?

Introduction

A database is an index of scholarly resources. Library catalogues, journal databases, ePrints and Google Scholar are all databases. Databases for research often include collections of information, full text articles, book chapters and websites. Understanding the structure of

databases will help you get the most out of searching no matter what the tool. For the purpose of research, a database can be described as:

- a collection or repository of electronic sources
- a searching tool using records and indexes
- a publishing platform (e.g. EBSCOhost which has multiple collections by subject and/or format).

Common features of databases

Common features of databases include:

- basic and advanced search screens
- searching by fields such as author, article title, abstract, etc.
- search syntax techniques such as Boolean, truncation, wildcard, proximity, etc.
- results screen with ability to sort and view in different ways
- limiters to refine results by subject, format, publication date, peer-reviewed, etc.
- the ability to email, print, download, export to reference management software
- the ability to create profiles, save searches and results.
- email alerts for searches and Table of Contents
- a thesaurus of subject terms in use
- help functionality to show the search options.

Why use more than one database?

Which database is best? You will need to use different databases at different stages of your research and for different aspects of your research. No one database has everything, not even the Library's [Quick Find](#) which aggregates content from many databases. Often the best databases to use are the ones specific to your subject area. The ability to conduct quality searches across a range of resources is essential for you to be able to produce a comprehensive well rounded literature review. You will not be searching just one database but multiple, and conducting numerous searches related to your topic and sub topics.

General search tools such as Google Scholar or Quick Find are useful for preliminary and general background searching. Specific search tools with added search functions are essential for more comprehensive searching. This mirrors how we develop knowledge in a topic too. In that way, you can also not only work your way into your research but also develop extra techniques as you go. Start with preliminary searching first and as you learn more about the topic area graduate to more precise/comprehensive searching.

Strengths and weaknesses

Being aware of the strengths and weaknesses of a database will help to maximise their potential as well as decide when it is time to select or move to another. The guiding questions below will help you decide on the value of particular databases for your research.

Criteria	Questions to ask
Comprehensiveness	<ul style="list-style-type: none">• Does the database offer reliable, comprehensive coverage of journal articles in the area of interest? Is it suitable for a comprehensive search of the literature or does it only cover a small percentage of the literature?
Scope	<ul style="list-style-type: none">• Coverage – what years are covered?• How up to date is the information and how often is the database updated?• What types of publications/formats are included?
Quality	<ul style="list-style-type: none">• Is peer reviewed academic information included?
Search Interface	<ul style="list-style-type: none">• How do you work the search functionality options in the search screens and results screens?• Does the database allow for citation searching?• Is controlled vocabulary searching available?• What are the advantages and disadvantages of the interface screens?
Search syntax or algorithm	<ul style="list-style-type: none">• Does the database have the desired search syntax?• What do the results show about how the search works?
Ease of Use	<ul style="list-style-type: none">• Is the database easy to access and to use?• Is it easy to save searches, create alerts, export results, and download PDF?• Is it easy to refine your searches e.g. to date, publication type, subject, etc.

Find databases

QUT Library [Find Databases](#) describes all of the databases available at QUT. Search for databases by subject area or database type. You can also search using title, keyword or topic.

Search for a database

➔ [View A to Z list of databases](#)

Database types

QUT Library lists over 300 databases which can be categorised into various types including index, full text and rich media databases.

Index databases

Index databases are a catalogue of information and citations including details such as author, title, publisher, date, and publication title. They may also provide an abstract that summarises the item. Web of Science and Scopus are two of the largest databases of published scholarly information. These databases may or may not give access to the full text article.

Full text databases

Full text databases include the same type of information as an index database and in addition contain the complete text of the content that they index. This could include books, dissertations, journals, magazines, newspapers.

Rich media databases are index databases with images, sound and video.

Free and subscription databases

Databases are either free or subscription-based.

Free databases

Free databases provide access to a wide variety of scholarly resources, such as the [Directory of Open Access Journals \(DOAJ\)](#) which delivers open access, peer-reviewed content. Open access databases allow researchers to share freely across disciplines, promoting interdisciplinary discoveries, and ensuring maximum visibility of a researcher's published outputs.

Subscription-based databases

Subscription databases charge individuals and institutions for access to information. QUT Library pays subscriptions to many databases allowing QUT researchers, students and staff to access this information at no additional cost.

Summary

A database is an index of resources that may contain citations only, full text or rich media. Databases share common features. Use the QUT Library [Find Databases](#) to find multiple databases for your research.

4.2 Search strategies

Introduction

Having considered preliminary searching, and having selected some relevant databases, you are ready to start in-depth or comprehensive searching.

While search engines rely mostly on search algorithms and employ fuzzy searching, library databases consist and use searchable records to find items of interest. To get the most out of searching databases you will need to understand the language or syntax of the key databases in your area of interest.

Deciding how to search

Keyword searching

Most databases search keywords or *words anywhere* unless you choose another type of search. The database looks for a match for your keyword in any field in the record. This means that your search will retrieve more information or have higher recall but be less precise than other searches.



Watch the video: [Keyword searching](#)

Field searching

Some databases allow searching in specific fields such as the title, author, or subject. This type of searching is quite specific and will retrieve fewer results than a keyword search. By using field searching you can increase the precision of the search thereby retrieving fewer results.

Example: Searching for *Bank* in the author field retrieves results by authors called Bank, while searching for *bank* in the keyword field might retrieve results about financial institutions or rivers.

Example: Searching for *constructivism* in the article title field is a quick way of finding articles about that theory, rather than articles that merely mention it in passing.

Subject searching

Subject searching can increase the relevance of your results. Each database record lists subject terms. Also known as subject headings, descriptors or index terms, these are a set of standard terms or controlled vocabulary that are defined and used by indexers of the

database to describe a subject so it can be easily found. There are many terms that mean the same thing, using subject headings aims to bring these like terms together under a single term or phrase.



Watch the video: [Subject searching](#)

Search syntax for search statements

Subject, keyword and author searching allow you to create effective searches. To search more efficiently, combine terms in a logical way using Boolean and/or proximity operators, truncation and parentheses.

Boolean operators form the basis of database logic. They connect your search words together to either narrow or broaden your search. Let's consider AND, OR, NOT.

Boolean operators - the 'AND' operator

Use AND to connect different concepts. Using AND directs the database to show records that include all the search terms that were used in the search. All search terms will be listed in the results. The more search terms connected by AND, the more specific your search will be and fewer records will be retrieved. Be aware in some databases AND is implied.

In summary using AND in a search will:

- Narrow your results
- All search terms will be present in the results.

Example: The search: *construction AND sustainability*, finds records with both terms.



Watch the video: [Using AND](#)

Boolean operators - the 'OR' operator

Using OR broadens the search to include all records that contain any terms used in the search. This type of search links like terms or synonyms together. Each time you add another term with the OR operator you are potentially increasing the number of records that will be retrieved. You can use OR to search for synonyms, alternate spellings, or abbreviations.

In summary using OR in a search will:

- Broaden your results, directing the database to include any of your search terms can appear in the results

- Allows you to connect 2 or more like terms (synonyms) alternate spellings or abbreviations.

Example: The search: *construction OR building*, finds records with either or both terms.



Watch the video: [Using OR](#)

Boolean operators - the 'NOT' operator

Use the NOT operator to exclude certain words from your search. Using NOT narrows the search by excluding specific terms. Be aware that this is a powerful search operator and may also exclude important records.

In summary using NOT in a search will:

- Exclude words from your search
- Narrow your search.

Example: The search *success NOT money* excludes any record with *money* in the text.

Phrase searching

Some databases assume that a string of words will be searched as a phrase whereas others will search on each individual word. Phrase searching tells the database to look for two or more words in the exact order they are entered. Use the quotation marks “ ” to enclose a phrase.

Example: “*climate change*” finds this exact phrase, excluding irrelevant results about *change*

Proximity operators

Proximity or adjacency operators allow you to locate one word within a determined distance from another. Words that are close to each other are more likely to be related than those that are further apart. Using proximity operators will limit your search returning a smaller, group of results. Proximity operators differ between databases. Check the database help screens to find out which operators are appropriate to the database you are using.



Watch the video: [Google's proximity operator](#)

Truncation and wildcards

Use truncation symbols to look for the root or stem of a word. The most commonly used truncation symbol is the asterisk *.

Example: The search *creat** will retrieve create, creates, creator, creative, creativity etc.

Be careful to use a word stem that relates to your meaning.

Example: The search *polic** will return policy and policies, as well as police and policing.



Watch the video: [Truncation](#)

A wildcard symbol is used to substitute for a character either within a word or at the end of a word. This symbol is particularly useful for American or British variations or when you're unsure about the spelling of the word.

Example: The term *organi?ation* will find both 's' or 'z' spellings.

Truncation and wildcard symbols vary between databases and internet tools, so check the help section of each database.



Watch the video: [Wildcards](#)

Nesting terms

Nesting search terms within parentheses () controls the logic of the search so you can group synonyms in sets. The part of the search within the parentheses is performed first.

Example: The search (*"respiratory tract infection" or bronchiolitis*) and management finds articles about the management of both respiratory tract infections or bronchiolitis.

Limiters

You may also use limiters to narrow your search. This is often best done in the results screen to increase the relevancy of results after a comprehensive search. Limiters include:

- Subject
- Format
- Date
- Institutional affiliation
- Full text or peer reviewed articles.

Search engines such as Google have their own limiters including:

- domain - restrict to a country, type of organisation or information provider (.au, .edu or .gov for Australian, educational or government information)
- format or file type - such as PDF, PPT, Excel, audio or video files to focus your search
- region

- last updated.

Step your searches

Searching is the process of finding out what is available via a search tool, changing and developing your search statements accordingly, and limiting the view to construct the best set of results possible. A database has different screens specialising in advanced search, refining results and working with results. Think about how you will search. What will be your search process? This step by step approach may be useful in determining your method.

1. Determine search objective: Identify initial key concepts, synonyms and alternative term.
2. Conduct a preliminary keyword search. Evaluate results for the most suitable records and glean suitable alternative terms.
3. Comprehensive keyword search: broaden your search with alternative terms for comprehensive results.
4. Subject & keyword search: Scan for subject terms, use the drop-down indexes.
5. Apply limiters to results to increase relevancy (subject, date, format).
6. Export citations and download files.

Maximise relevant results

Activity – map the search process

Map the search process for your research topic by answering Question 2 of your [Resource Log](#). It will be a record of the terms, synonyms and strategies you have used to collect information, as well as the tools you have consulted. Consider the strengths and limitations of each database.

Summary

In completing this section, you have produced a list of search terms from your research question and created effective search statements. You have learned how to make use of specific search techniques such as Boolean and proximity operators; wildcard and truncation symbols to create precise search statements to adapt searches to optimise results.

4.3 Database types

Introduction

This section gives an overview of some of the specialised resource types available through QUT Library.

Research methodology



[Sage Research Methods Online](#) contains book, journal and reference content to help researchers design research projects, understand methods or identify a new method, conduct their research, and write up their findings. Focusing on methodology, it can be used across the social sciences, health sciences, and other disciplines.

Reference

Access online [Dictionaries](#), [Directories](#) and [Encyclopedias](#)

[Oxford Reference Online](#) is a searchable database which brings together over two million entries from Oxford Dictionaries, Encyclopaedias and Companions.

eBooks

QUT Library subscribes to or purchases collections of [eBooks](#) such as the [EBL Ebook Library](#), [ENGnetBASE](#) and [Sage Knowledge](#).

Newspapers

QUT Library has access to newspapers from around the world. Newspapers provide data on public opinion, trends, and government policy directions.

[PressReader](#) offers a full-colour, full-page collection of today's newspapers from around the world and a 60 day archive of newspaper issues.



[Factiva](#) provides up-to-date full text newspapers from many countries, in a number of languages.

Magazines and trade journals

Popular magazines can point to current trends and the cultural impact of research. QUT Library subscribes to magazines for researchers in all **faculties, including** [The London Review of Books](#), [Newsweek](#), [Time Magazine](#), [Vogue](#) and [Rolling Stone](#).

Trade journals keep up with practical developments in a field and may lead you to new paths of enquiry. **Publications like** [Monument](#) (Architecture), [IT Professional](#) (Information Technology) all report the cutting edge advancements in their areas.

Large database providers such as [ProQuest](#), [EBSCOHost](#) and [Informit](#) all include magazines and trade journals, as well as a search limit option to isolate these publications.

Conference papers

Conference papers provide a timely means of disseminating fast-breaking research. Due to their immediacy, they are more important to certain disciplines than others. A number of databases contain conference papers that report on recent research, work in process, as well as commentary on industry trends. Keep in mind that preliminary findings may not have been through rigorous testing or peer review processes.

Databases which index conferences include [IEEE Digital Library](#), [PsycEXTRA](#), and [Web of Science](#). To find others go to the QUT Find Database page and search with the keyword **conference**.

Multimedia

QUT Library has collections of [videos](#).



[Trove](#) Australian music, photos and films.



[British Pathé](#) British films from 1896 to 1976.



[The Internet Archive](#) has texts, moving images, audio, software and archived web pages from 1996. It features a Live Music Archive with the performances of thousands of artists.

Business databases

Business databases include industry reports, country economic data and national statistics, bonds, equities, mergers and acquisitions, property economics, mutual funds, and datasets of ticker data.



[ABI/Inform Global \(via ProQuest\)](#) is one of the largest databases in the world covering information related to business.

The Orbis logo, featuring the word "orbis" in a gold, serif font on a dark blue rectangular background.

orbis

[Orbis](#) contains information on private and public companies worldwide.

The Osiris logo, featuring the word "osiris" in a gold, serif font on a dark blue rectangular background.

osiris

[Osiris](#) contains information on publicly listed companies worldwide and forecasting information.

The Morningstar logo, with "MORNINGSTAR" in red, uppercase letters, and a red circle around the "O".

MORNINGSTAR

[Morningstar Direct](#) contains investment information for sector analysis, performance evaluation, investment selection, and portfolio creation. Large amounts of this quantitative data can be downloaded and manipulated.

Forecasting tools

Financial forecasting databases include [Osiris](#).



[MarketLine Advantage](#) 'Market Analytics' has market forecasting data.



[EIU CountryData](#) for economic forecasting.



[Worth Global Style Network \(WGSN\)](#) for fashion and design forecasting.

Evidence-based databases health resources

[Health evidence based databases](#) include systematic reviews, critically appraised resources, randomised controlled trials and case studies.



[The Cochrane Library](#) provides independent high-quality evidence for health care decision making.

Statistics

QUT Library has a range of [statistics](#) databases which include country, economic, financial, health, industry and market statistics. QUT Library also has access to opinion polls and survey results.



[ABS Statistics \(Australian Bureau of Statistics Data\)](#) has information on building and construction, crime and justice, demography, education, finance, environment, health, indigenous statistics, trade, social statistics.

Property databases

Property Investment Professional is an Australian property investment research service.



[CoreLogic](#) (RP Data) contains property information services for Australia and New Zealand.

Geographic Information Systems

Geographic Information Systems (GIS) represent complex analyses of geographical data in a highly visual style.



[eBimap](#) is the Brisbane City Council's online mapping service for urban planning and design providing Brisbane land, property and assets information.

Patent and standards fulltext databases

QUT Library has access to [patents](#) and standards databases, including standards for [accounting](#) and [engineering](#).



[AusPat](#) contains patents from Australia.



[Patent Lens](#) contains worldwide patents.



[Scopus Patent Search](#)



[SAI Global - Standards On-Line Premium](#) provides access to the complete collection of current Australian Standards, and recent Draft Standards and handbooks.

Education databases



[ERIC](#) is the largest education literature database in the world.



[Scootle](#) provides teachers and education students with access to digital resources aligned to the Australian Curriculum.

Law databases

[Law databases](#) contain primary resources including caselaw and legislation for Australian and international jurisdictions, as well as legal commentary and reference tools.



[LexisNexis AU](#) provides online access to Australian legal materials published by LexisNexis Butterworths.

Westlaw AU

[Westlaw AU](#) includes legal research titles as well as looseleaf services, full text journals published by Thomson Reuters, law reports and unreported judgments.

Archives

Historical government information is found in state, federal or local council archives.



[Queensland State Archives](#) manages, preserves and facilitates public access to the state's permanent archival public records.



The [John Oxley Library](#) of the State Library of Queensland contains Queensland cultural and heritage resources. It also collects all books published in Queensland.

Summary

Databases contain a wide range of resources including documents, images, videos, statistics, dictionaries, eBooks, datasets, legal resources, business and research methodologies. Use QUT subscription databases, free databases and other Library databases for your research.

If after completing this section you'd like more advice on databases for your research, talk to your [Liaison Librarian](#) or [ask us for help](#). You may also let your librarian know if there are additional databases you would like QUT Library to acquire for your research.

4.4 How to pick suitable databases for your research

Introduction

By the end of this section you will have used QUT Library's [Find Databases](#) guide to select databases best suited to finding data appropriate to answer your research question. You will be able to adapt your search terms and strategies to various databases.

Selecting databases for your research

Databases can be used for many different aspects of your research from fishing, developing your research proposal, writing your literature review, conducting research activities, writing up your results and discussing the significance and impact of your research.

Searching databases at the start of your research journey can:

- inspire creative ideas
- consolidate your understanding of your research area
- help you write a good research question
- accelerate the research proposal writing process
- provide the framework of study for the duration of your degree.

Explore a few different databases to see what sorts of information they contain. Ask your supervisory team and your [Liaison Librarian](#) for guidance on what databases may be appropriate to answering your research question.

Activity – how to pick suitable databases for your research

1. Go to the QUT Library [Find Databases](#) guide for your subject area (or resource type e.g. online video) and scan the list of suggested resources.
2. Read the synopses for databases that are likely to be relevant and select your three top databases. If you'd like further assistance with selection, contact your [Liaison Librarian](#).
3. Search within each of the three databases using terms and synonyms from your research question. Your search is likely to require modifying (broadening or narrowing) to retrieve highly relevant results. Use the help facility for each database to learn more about specific search operators and search functionality in use and amend your search as necessary.
4. Record your search history from each of the three databases. This could either be a screen capture showing the development of your search or the 'search history' (many databases provide this feature – check the help screen). The important thing is to show how you have adapted and modified your search within each tool to yield the most useful results. Note – there is no one correct search strategy.
5. Reflect on the main benefits and limitations of your three databases in relation to your research topic. This could include the scope of the database, search functionality or other specifics you have noticed in using the tools.

Summary

You have used three QUT Library databases to help you answer your research question and become familiar with their content and search functionality. You have used the help tools of each database to develop effective search strategies within each tool.