Advanced search techniques

Searching for information at postgraduate level has to be precise and thorough.

Successful literature reviews are created from searches using well-chosen keywords and phrases over a broad range of resources.

To conduct a precise and thorough search you may need to use a variety of techniques, from Boolean logic to truncation and proximity searching.

Not every technique is supported by every resource, and the ways in which the techniques are used can differ, so always check the help available for each individual resource.

If your search is continued over a long time you might find it helpful to keep a diary or journal. This can help trace changes in the direction of your research, and record useful search strategies, keywords and phrases.

Using the right keywords

To create a precise and thorough search for information you will need to spend some time gathering together relevant search terms. Synonyms and related terms and phrases can be gathered from several sources.

Try:

Dictionaries and thesauri – general or subject specific, online or printed

Keywords and descriptors used in key journal articles

Thesauri, subject headings, phrase lists or other lists of controlled vocabulary in individual databases

Example search: *Transferable skills of research students*

Search terms	Discussion
Transferable, moveable, assignable	Be aware of the subtly different emphases of these terms; and the effects they may have on your search results.
ability, training, masters	
BPhil, MPhil, EdD, PhD, doctorate, postgraduate	

Phrase searching

Phrase searching helps refine your search by allowing you to look for words together in a phrase, in the order specified.

This type of search is supported by most databases.

The most common indicator of a phrase is speech marks.

Example search: *Transferable skills of research students*

Search terms	Discussion
"transferable skills" "research students"	This search would retrieve material on the 'transferable skills of research students'. It would also filter out 'transferable and research skills for sixth-form students', because the word matches do not occur in the order specified.

Boolean logic

Boolean logic allows you to link your search terms in specific ways. It requires the use of the Boolean operators **AND**, **OR** and **NOT**.

AND narrows your search

OR broadens your search

NOT narrows your search by excluding terms.

Example search: *Transferable skills of research students*

Search terms	Discussion
"transferable skills" AND "research students"	Using **AND** will narrow the search by ensuring material retrieved covers both phrases. Without this Boolean linking, the search might produce results matching one term but not the other, thus increasing your results, and making the job of filtering results harder.
"transferable skills" NOT "information literacy"	Using **NOT** will narrow a search on transferable skills alone by excluding any material that also mentioned information literacy.
"transferable skills" OR "ability"	Using **OR** will broaden a search on transferable skills by including matches on the synonym ability.

Nested searches

Nested searches are used to create more complex Boolean logic statements. For example:

{pets NOT (cats OR dogs)} AND behaviour

This statement would be used to search for material on the behaviour of all pets except cats and dogs.

This type of searching is supported in many resources, often with the use of brackets or separate search boxes.

Example search: *Transferable skills of research students*

Search terms	Discussion
{"transferable skills" NOT ("study skills" OR "presentation skills")} and "research students"	This statement would be used to search for material on the transferable skills of research students excluding material that mentioned study skills or presentation skills.

Proximity

Some databases allow searching for words in the same sentence, or within a defined number of words of one another.

This type of relevance searching is based on the premise that words or phrases which are near to each other will be related in some way.

Proximity is particularly useful when searching full text databases.

Example search: *Transferable skills of research students*

Search terms	Discussion
"transferable skills" SAME "research students"	Using **SAME** will search for "transferable skills" in the same sentence as "research students"
"transferable skills" w3 "research students"	Using **w3** will search for "transferable skills" within 3 words of "research students"
"transferable skills" NEAR "research students"	Using **NEAR** will search for "transferable skills" within the database's definition of 'NEAR' to "research students"

Truncation

This is useful when searching for the singular and plural form of a word as well as for terms that can be reduced to a common stem.

Often the asterisk (*) is used but other characters can also be inserted, including the exclamation mark (!).

Example search: A search for *skill**

Search terms	Discussion
Skill*	This would retrieve skill, skills, skilling, skilled, etc.

Wildcard

You may be able to replace none, one or more letters within a word by using a character, often a question mark (?) or an asterisk (*).

Example search: A search for *Transfer?able*

Search terms	Discussion
Transfer?able	This would retrieve transferable and transferrable

Saved searches

In many databases you can save a search to run at a later date. This is particularly useful if your search statement is complex and lengthy to enter.

Common Pitfalls

- Be aware of variations in British and American spelling.

- Make sure you don't restrict yourself to items held in online databases. Some online databases go back as far as the 1980s, but others do not even go that far. There may be important publications that were published before that, and you will need to search elsewhere for these.

- Authors' first names and initials are often indexed inconsistently in databases.

- Some journal issues are also published as books.

- Be aware that not all important research is published in English.

- Foreign languages may be transliterated in different ways, such as the German **ü**, which can be replaced with **u** or **ue**.

- Some foreign journals have translations published much later, and with different dates and page numbers.