

How to undertake a literature search

The JRUL subscribes to over 40,000 electronic journal titles, providing you with a huge volume of information to navigate. As such, you will need to employ a systematic approach to your subject or literature based searching.

There are four key stages which contribute an effective subject search – These are:

- Stage 1: Define the subject in terms of keywords
- Stage 2: Identify information sources
- Stage 3: Search the information sources identified using keywords
- Stage 4: Download relevant information

Following these stages systematically should help you to identify articles that are relevant to your research (and will ensure that you are able to make the most of the vast resources of information that are available to you as a University of Manchester student).

Stage 1: Define the subject in terms of keywords

Stage 1 of the literature search requires you to think very carefully about **WHAT** you are actually searching for. The aim is to generate 2-3 key terms or phrases (keywords) that both fully reflect what we are looking for, and which can easily be entered into a database search engine.

It is important to be clear about our topic, or area of research. The first step is to break the topic down into concepts (usually nouns rather than verbs or adjectives). Try not to focus too closely on words or terms that might make up part of your overall essay or project title. Instead you should reflect on the question more fully, and pull out the key components which make up the topic as a whole.

As an example consider the following essay title:

"Evaluate the impact of the Internet on practices for recruitment and selection employed by firms"

Key concepts here would be: Internet / Recruitment and selection / Firms

Choosing your keywords

Using the concepts above we can now move on to producing our list of words (or phrases), which fully describe our topic. We need to consider a number of possibilities however to ensure that we will retrieve as much information as possible - these include:

- Synonyms (words or phrases that mean the same thing) - e.g. student or pupil.
- Alternative terminology - e.g. United Nations or UN.
- Alternative spelling (US & UK) - e.g. organisation / organization.
- Any related terms - e.g. personnel or human resource management.
- Variations in word endings (singular, plural) - e.g. organisation(s).

From our concepts above we might identify the following keywords - Consult stage 3 to see how these can be effectively entered into the database search engine.

- Internet, world wide web, www
- Recruitment, selection, personnel, human resources, hr, human resource management
- Firm(s), company(ies), organis/zation(s)

Stage 2: Identify information sources

You now need to determine **WHERE** you are going to search for information - In order to help you select the correct database for your topic, the JRUL website categorises the bibliographic databases by subject area. E.g.

- Select the **Subjects** link provided at <http://www.library.manchester.ac.uk/>
- Click on **A-Z of subjects** link, and click on the subject of your choice e.g. **Geography**
- Now click on the **Databases** link – You are presented with links to various databases within your chosen subject area: Read the individual database descriptions to determine which contain journal articles
- Click on an individual database e.g. **GeoBase**
- Select your chosen database from the suppliers product list (if necessary)
- Begin Searching (see stage 3)

JSTOR

If there are not many databases available for your subject area, you should try the JSTOR database – JSTOR contains historical back runs of over 900 different academic titles – JSTOR does not contain the most recent articles, but can be a good place to begin searching if there does not seem to be much information available for your subject. To access JSTOR:

- Select the **Electronic Resources** from the JRUL website <http://www.library.manchester.ac.uk/>
- Select **Databases**
- Click on the letter **J**, then select **JSTOR** from the list which appears

Cross Search using “Library Search”

You can use **Library Search** to cross search across multiple bibliographic databases and the library catalogue simultaneously.

- Library Search is available from <http://www.library.manchester.ac.uk/>
- The software which powers Library Search is called *Primo*
- There is an extensive help facility available within *Primo* which will enable you to familiarise yourself with the software

N.B. *The search engine for Library Search may not be as comprehensive as the search engines within the individual databases and results may vary. We do strongly recommend that for a thorough literature search you also explore at least two of the individual bibliographic databases.*

Stage 3: Search the information sources identified using keywords

Now that you have selected an information source(s) to search, it is time to utilise the keyword terms you created in stage 1. The vast majority of databases have a standard basic search interface which allows you to enter your search terms and have them interact in a variety of ways using Boolean operators. Other options allow you to direct the database where to search for the keywords (e.g. in the article title, abstract or full-text), and to limit the types of results retrieved (e.g. you can specify results within a particular date range or from a certain publication type).

[Click here to see a video clip of a subject search carried out on the ABI Inform database](#)

The screenshot shows the EBSCO Business Source Premier search interface. At the top, the search terms "internet or web" and "recruitment or selection" are entered in separate boxes, with "AND" operators selected from dropdown menus between them. A "Search" button is visible. Below the search boxes, a "Boolean Operators" callout points to the "AND" dropdowns. To the right, a "Search limiters" callout points to a dropdown menu for "Select a Field (optional)", which lists various search fields like "TX All Text", "AU Author", "TI Title", "SU Subject Terms", "AB Abstract or Author-Supplied Abstract", "KW Author-Supplied Keywords", "GE Geographic Terms", "PE People", "PS Reviews & Products", "CO Company Entity", "IC NAICS Code or Description", "DN DUNS Number", "TK Ticker Symbol", "SO Publication Name", "IS ISSN (No Dashes)", "IB ISBN", and "AN Accession Number". Below the search area, the "Limit your results" section contains several options: "Full Text" (checkbox), "Journal" (text input), "Peer Reviewed (Refereed Journal)" (checkbox), "References Available" (checkbox), "Published Date from" (dropdowns for month and year, with "January 2000" and "August 2010" selected), and "Publication Type" (dropdown menu with "All", "Academic Journal", "Periodical", and "Trade Publication" options). A "Result limiters" callout points to these various filtering options.

Using Boolean logic

Boolean logic allows you to combine or exclude terms from your search by using the Boolean operators **AND**, **OR** and **NOT**. Usually you will be able to select one of these options from a drop down menu to the left or right of the search box (As shown in this example from the [Business Source Premier](#) database).

In the example shown the OR operator has been used to make sure results mentioning both “internet and web” and “recruitment or selection” are retrieved.

The AND operator combines these 2 concepts into a single search strategy, such that we will only retrieve articles which mention both “internet OR web” and “recruitment OR selection”

General points to remember when using Boolean logic:

- **AND** will link the terms to find only articles that mention both concepts:
eg: tobacco AND advertising
- **OR** will broaden the search by looking for synonyms, alternative spellings, abbreviations and plurals. Parentheses are often used to ensure that the database treats each discrete concept separately before looking for the next one:
eg: United Nations OR UN
eg: (public sector OR civil service) AND absenteeism
- **NOT** can be used when you need to narrow the search by excluding certain keywords or concepts:
eg: industrial action NOT fire service

Using limiters

There are two types of limiters you can use "Search limiters" and "Result limiters"

Search limiters:

These allow you to alter where the database will search for occurrences of your search terms. These limiters are usually located next to the boxes where keywords are entered. The default limiter on most databases is set to "full-text" – This will therefore retrieve an article even if it only retrieves your keyword once or twice. As such it can often be helpful to change this to Abstract or Title as this will retrieve articles likely to be much more relevant to your search

Result limiters:

These allow you to exclude articles which don't fit into the specification you need from your results list. The most commonly used are the Date limiters (which allow you to specify that you only want articles published before, after or between specific dates) and Publication type (which allows you to limit results to those taken from peer reviewed academic titles etc)

Truncation and wild cards

Most electronic databases allow you to truncate your search terms. This will broaden the search by looking for all words that begin with the same stem but have different endings.

Truncation symbols are usually either * (asterisk), ? (question mark) or \$ (dollar sign). As this varies between databases it is worth checking the database help screen first for guidance, so:

- *comput** would find computer, computing, computation etc.

Truncating a word too early will increase the retrieval of irrelevant results:

- *comp** would also find company, comprehensive, competition etc.

Wild cards can be used to represent one character within a keyword. Again, the wild card symbol used will vary between databases so it is advisable to check the database help screen first:

- *nationali?ation* will find nationalisation or nationalization
- *organi?ation* will find organisation or organization
- *colo?r* will find colour or color

Evaluating and refining your search

Once you have retrieved a series of references you will need to evaluate your results. You might have retrieved too many or too few items, or may have found a lot of irrelevant articles. If this is the case, you will need to refine and rerun the search.

If you retrieved too many results:

- Add further keywords to the search to make it more specific (eg: you could add “strategy” to the search on “tesco” to make it more specific).
- Use the preferred terms listed in the index or thesaurus (See previous section).
- Use limiters to search rather than searching the full text of the database (Select *Abstract* or *Document title* to make you search more specific).
- Use the other limiter options available to you (eg Use the date options to search for articles that were only written during the last 5 years, or specify a certain publication such as the *Harvard Business Review*).
- Use the **NOT** operator to exclude an irrelevant term that appears regularly in your results. (eg “education NOT technology”)
- Check the Help screen for other search operators that can be applied.

Some databases allow you to search for words appearing in the same sentence or paragraph, or within a certain number of words of each other.

If you retrieved too few results:

- Think of other synonyms or related terms to add to the search (eg: “*International Monetary Fund* OR *IMF*”).
- Use truncation.
- Remove any limiters that have been set.

If the results are irrelevant:

- Try to define the topic more specifically.
- Check for ambiguities in the search terms e.g. *company* could refer to a business or social companions.
- Check the indexes and thesauri for the keywords and terms preferred by the database.

If the revised search strategies still fail to find any relevant articles then you should try a different database.

Stage 4: Downloading information

Once you have located an article (or articles) that match your information needs, downloading is a relatively simple process. You will usually be presented with a number of options:

Individual download:

- You will often be offered the option to download in pdf or html format – pdf will provide an exact representation of how the article appears in the print version of the journal (including diagrams, photographs etc), but may take longer to download.
- There will also be options to print or email a copy of the article to your email account.

To download more than 1 article simultaneously

Most databases will allow for some form of bulk download (in many cases up to 100 articles at a time) - Methods for performing bulk downloads vary depending on the database you are using, however, common practice is to mark articles you wish to download by using a check box when browsing the results list.

This then often places all the chosen articles in a folder, which can be accessed when you have finished browsing – Within the folder you will find the standard save, print and email options – Many databases will also allow you to export the journal citations to bibliographic management software such as Endnote.

- [Video demonstration showing direct export of an article citation from a database into Endnote](#)