



NTU Library

Getting started with your literature review

What is a literature review?

A literature review is more than a list of bibliographic references. A good literature review surveys and critiques the body of literature in your field of interest. It enables you to position your research in the broader academic community, synthesise existing ideas and arguments without adding your own, and identify any gaps in the literature which your research is attempting to address.

The literature reviewed should always be shaped by your research objective or your thesis proposal. A literature review can take several months to complete, and will feed into your research proposal. If writing a doctoral thesis, the literature serves as source material and lays down the foundation for your research.

Elements of a good literature review

- Purpose of the review established
- Scope of the review clearly set out
- Critical evaluation of the literature
- All reviewed literature is pertinent to your research field, as opposed to vaguely relevant
- Identification of landmark and any seminal publications
- Identification of a gap in the literature, which you're proposing to address with your own research
- Emergence of key themes, trends and controversies
- Identification of key researchers and authors
- Summary of prevailing theories and hypotheses
- Critical appraisal of methodologies used
- Formulation of questions which lead to further research
- Clear justification for your research proposal
- Material organised in an effective way
- The reader understands the issues your research is attempting to address

Why do I need to undertake a literature review?

The initial purpose of a literature review is to establish the uniqueness of your own research proposal, whether it's starting from scratch or building upon existing studies. Underpinning this are the elements outlined above. In addition to these, you will use the literature to support your arguments and counter arguments. A literature review with depth and breadth demonstrates comprehensive knowledge of the literature, and confirms that you're up-to-date with research in your field. It also provides a framework and focus for your proposed research.

Your literature review puts your research into context by relating it to previous research. It also provides the opportunity to introduce relevant terminology, with definitions clarifying how these terms are used in the context of your own research.

A word of caution – identifying gaps in the literature is good, but only if you've conducted a thorough literature search. You need to make sure it's not down to an inadequate literature survey.

When should I undertake my literature review?

The obvious answer to this is at the start of your research. This is when you'll carry out the most extensive work on your review, but it's an iterative process, particularly if you're writing a doctoral thesis. You'll need to keep up to date with newly published research (see the guide 'Keeping your research up to date'), so will write an initial draft, then revisit it if the focus of your thesis shifts or you discover new research. Your literature review is likely to take several forms before you submit the final version with your thesis.

Small-scale research is likely to require just one literature review for your research proposal.

Where can I find the literature?

This can be very daunting as performing a rigorous literature search is time consuming, with a wide range of resources to trawl through. This guide will offer you advice on resources and search tips, and you can also ask your [Research Support Librarian](#) for more specific help in searching the University's databases.

Getting started

Before you start your literature review you need to consider the following:

- What research question is your literature review defining?
- The scope of your research
- What type of literature review are you conducting? Is it focusing on policy, theory, quantitative/qualitative research?
- Which disciplines will your research cover?
- Will you be limiting your literature to a specific time period?
- What types of literature do you anticipate using?

Types of literature

Research isn't confined to journal articles. There's a wealth of different available sources, including:

- Conference papers
- Book chapters
- Government reports
- Charity reports
- Non-government reports
- Statistics
- Historical records
- Parliamentary papers
- Commercial reports
- Market research
- Legal documents
- Popular media
- Ephemera, such as letters, maps, music, manuscripts
- Theses and dissertations

These will be relevant in varying degrees for different disciplines, and some sources will be more difficult to trace than others.

Where should I search?

For academic sources such as journal articles and conference papers, you need to use the library's databases. [Google Scholar](#) and [Library OneSearch](#) serve as adequate starting points, but they lack many of the features for advanced search techniques. Employing these techniques enables you to carry out your searches in a more strategic manner, which saves time, produces more relevant references, and identifies gaps in a way which you can evidence.

The library subscribes to over 200 databases, so check the 'Find Databases' option in Library OneSearch to identify those which cover your research field(s):

Find Databases

Name: Contains Type:

Publisher: **Category:**

Keywords: Sub-category:

Include databases the library subscribes to (as well as those not subscribed to)

All Databases Databases results(0) My Databases

A B C D E F G H I J K L M N O P Q R S T

- Accounting, Finance and Economics
- Animal, Equine and Wildlife
- Architecture and Civil Engineering
- Art and Design
- Business, Management and Marketing
- Criminology and Youth Justice
- Culture, Media and Journalism
- Education, Teacher Training, Childhood + Youth Studies
- History, Heritage and Philosophy
- Geography, Horticulture and Environment
- Law
- Literature, Language and Linguistics
- Politics and International Studies
- Property, Construction and Surveying
- Psychology, Sociology and Counselling
- Public Health
- Science and Technology
- Social Work, Health and Social Care
- Statistics

These comprise multidisciplinary, broad discipline, subject-specific, and specialised (e.g. Digimap) databases. Not all subjects have a subject-specific database but the multidisciplinary and appropriate discipline databases will index publications in your research area. Don't forget you can request material which isn't available in full text.

You can check if any theses have been written in your chosen field by searching the following databases:

[EThoS](#) (freely available)

ProQuest Dissertations and Theses: UK & Ireland (available via [Library OneSearch](#))

NTU researchers have access to the two main citation databases, Web of Science and Scopus. These are pivotal to finding out which studies have been cited by other researchers.

In addition to Library OneSearch, the following book catalogues are useful resources:

[COPAC](#)

[British Library Catalogue](#)

[Library of Congress Online Catalog](#)

Most university library catalogues are available to search. The [UK Active Map of Universities and HE Institutions](#) has links to each university library website, and includes specialist HE institutions such as The Courtauld Institute of Art, Institute of Historical Research, and Institute of Cancer Research.

Research is becoming increasingly available through open access (see the webpages on open access for further information). University repositories are a valuable source of research outputs from academic staff, and contain pre- or post-refereed versions of published journal articles in many instances. Google Scholar links to some of these repositories, but not all. Database records provide the author's affiliation so you can then access the relevant repository if you're not able to access the full text through NTU library's resources. [OpenDOAR](#) is a growing directory of international academic open access repositories. PGR students can check NTU's institutional repository, [IRep](#), for research outputs authored by your supervisor.

Other literature, often referred to as grey literature, is more difficult to trace, but information like reports and statistics are often freely available on government and organisation websites. [OpenGrey](#) is a freely available database of European grey literature, mainly comprising technical or research reports, doctoral theses, conference papers, and official publications. There is very little full text, but details of where the originals are located are provided.

Some research areas will need to refer to ephemeral material held only in special collections or archives, such as the British Library, museums and universities. You'll need to visit the websites for further detail about the holdings. Visits are normally by appointment only. Information about NTU's [special collections](#) are available on the library website.

Don't dismiss serendipity. It may not be following a structured approach, but research is often uncovered by talking to colleagues at seminars and conferences, and by browsing social media and collaborative websites, e.g. Mendeley.

Housekeeping tips

It's important to keep a record of your search strategies. This serves several purposes:

- To ensure you don't make unnecessary duplications;
- To ensure you haven't overlooked any areas, so identified gaps are true gaps in the literature;
- You can rerun your search at a later date;
- You'll remember how you found the literature when writing up your literature review;
- You'll be able to discuss how you found the literature at your viva (if you're a PGR student).

You can save your searches in individual databases for ease of rerunning by setting up an account within each database. See the guide 'Keeping your research up to date' for more information about this.

Keep a record of your references. The quickest way is to use one of the many available online packages. NTU supports [RefWorks](#), but there are other freely-available packages to choose from. The majority of the databases enable you to export your references directly into RefWorks. The library runs training events on RefWorks each term, and you can book onto these through the [CPLD website](#). For general advice on reference

management see the guide 'Managing bibliographic references'. You can also ask your [Research Support Librarian](#) for further support.

Keeping a literature search action plan will help you keep organised and steer you in the right direction for searching more strategically. The [template](#) at the end of this document can be used and adapted to suit your needs.

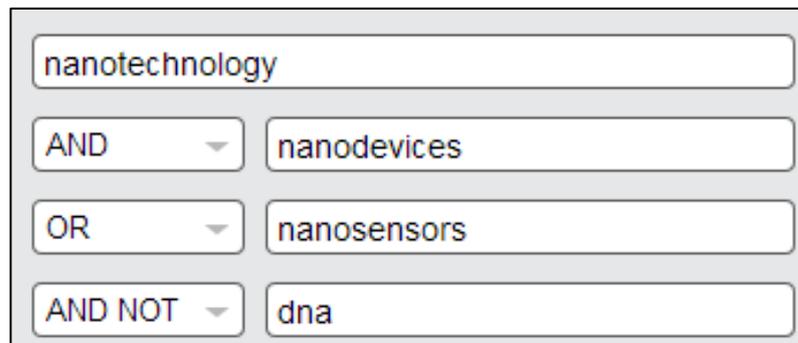
Search tips

Break down your research question into main concepts or issues so you're searching within a limited and clearly defined scope for each area.

Thinking of the right keywords can be challenging. Start with the language from your research topic to find articles, then check the vocabulary used in the abstracts and keywords. It's often useful to start with a broad search to ensure finding references, then narrowing this down after checking the vocabulary. Have a brainstorming session and jot down as many different terms and phrases you can think of for your research ideas. Think as creatively and imaginatively as you can.

Limit your searches to specific fields within the databases, e.g. publication title, subject headings (sometimes known as descriptors), abstract. This retrieves fewer references, but they should be relevant to your research scope. This can save you wading through reams of irrelevant literature.

Use the different Boolean operators to refine your search. Using 'OR' for synonyms saves time, as you don't need to repeat your search for each synonym you think of:



The image shows a search interface with four rows of input fields. The first row contains the text 'nanotechnology'. The second row contains a dropdown menu with 'AND' selected and a text field with 'nanodevices'. The third row contains a dropdown menu with 'OR' selected and a text field with 'nanosensors'. The fourth row contains a dropdown menu with 'AND NOT' selected and a text field with 'dna'.

There may be variations in spelling, especially as many databases use American spellings in their indexes. Wildcard symbols allow you to search for such variations without having to repeat your search, e.g. *behavio?r* will search for *behaviour* and *behavior*. Check the help options in each database to find out which symbol to use. Some databases use * instead of ?. Truncation symbols will search for extensions of words from a stem, e.g. *employ** searches for *employ*, *employment*, *employed*, *employability*, *employable*, and *employing* in one go. Again, check individual databases to find out which truncation symbol to use.

Web of Science and Scopus both allow you to conduct cited reference searches. These enable you to identify articles which have cited a particular study. This helps you to pinpoint significant or landmark publications and follow the development of arguments. These databases also analyse the citing articles to show who are the key authors in that field.

These databases, and many others, have the reference lists for articles attached to the records so, with the citing articles facility, you can place the study in the context of wider research.

When should I stop searching?

Knowing when to stop searching for literature is as important as knowing how to go about searching. Setting a clearly-defined scope will help, as it will focus your search to specific areas and set it within a publication timeframe. Establishing clear boundaries will make it easier to determine when you've carried out an exhaustive search. As your literature review develops it's likely you will need to adjust these boundaries from time to time. Another indicator of having exhausted the literature is when you keep coming across similar viewpoints and theories and are no longer uncovering new information.

How should I structure my literature review?

Before writing your literature review you need to consider how to organise your material. There are several ways, but these are suggestions of some of the more commonly-used structures:

- Thematically;
- Chronologically, by trend;
- By development of ideas and theories;
- By sector;
- By use of research methodology.

Whichever structure you choose, you may still need to combine elements from one or more of the other structures, e.g., it may be pertinent to your argument to approach a certain theme from a chronological perspective.

Writing your literature review

Once you've selected your structure, address the relevant points in '[Elements of a good literature review](#)' on p2 of this guide. Your literature review should have an introduction, a main body, and a conclusion.

The introduction establishes the context of your research, outlines any issues which have inspired your research interest, and indicates why your research is important. Clarify the scope of your review, so the reader knows what you will and won't be addressing.

The body of your review summarises and synthesises your material. Keep the focus of your review at the forefront of your mind when writing, so you only include relevant

material which evidence your arguments and observations. Remember to relate it to your own research.

The conclusion should summarise your critique of the literature and identify any gaps or issues arising from the existing research. Conclude by explaining how your research attempts to address these gaps or build on the existing research.

Write in a formal, academic style, using language which is clear, concise, and objective.

Is that it now?

Not if you're researching for a doctoral degree or conducting research over several years. You'll need to revisit your literature review and rewrite sections if necessary, as new research is published and the focus of elements of your own research changes direction.

For further advice and support please contact the [Library Research Team](#).

Literature Search Action Plan

My research question

Think about the broad focus of your research idea and any subsections. This will help you find literature that furthers your understanding of how the field developed surrounding your research question.

Broad  Narrow

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Your search strategy. A comprehensive literature search requires you to conduct separate searches using as many alternative keywords as possible.

Break down your research question into individual concepts and keywords.

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Brainstorm additional synonyms and related keywords for keywords for each concept.

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You can also perform a **cited reference search** for named individuals. Are there any key researchers in your chosen field? Your supervisor may have some recommendations.

This list will evolve throughout your literature search. Continue to add search terms and refine your ideas by looking at the **subject terms** and **author-suggested keywords** when using journal databases.

Sources. Create a list of sources that are appropriate for your research area. Use [Library OneSearch](#) and consult 'Find Databases' for a list of subject recommendations.

Journal databases	
Books	Library OneSearch COPAC British Library
Theses	NTU IRep EThOS ProQuest Dissertations and Theses (via Library OneSearch)
Other sources	

Search log. It is good practice to evaluate and record your searches. This will help you to identify any gaps in your literature review and follow up any new leads. The following table is a suggested way of recording database searches. You should also keep a record of individual journal articles or book references. Consider using [RefWorks](#) reference management software to manage your references.

Source	
Date searched	
Search terms used	
Comments/leads to follow up	
Criteria for inclusion	
Criteria for exclusion	
Search alert created?	

Search techniques. Remember, you can trace the history of key research articles by using **reference mining** and **citation searching** techniques.

Search alerts. Databases can be set up to run automatic alerts for searches, citations to individual articles or new issues of journals. This is a recommended way of keeping up-to-date with research in your field. See individual databases for instructions.

Additional support is available from your [Research Support Librarian](#)

Search tips checklist

Think carefully about your search terms

- Break down your research topic into main topics or concepts.
- Write down as many different terms and phrases as you can think of.
- Include synonyms or similar keywords, broader, and narrower terms.
- Use the database records to help you think of appropriate vocabulary (abstracts, keywords, subject terms).
- Be creative in your thinking.

Use the advanced options in databases

- Limit your searches to specific database fields, e.g. abstract, subject headings.
- Refine your search by using the AND, OR, and AND NOT options, e.g.



The image shows a search interface with a search box containing the text 'cod'. Below the search box are three rows of Boolean operators and search terms. The first row has a dropdown menu set to 'OR' and a search box containing 'haddock'. The second row has a dropdown menu set to 'AND' and a search box containing 'chips'. The third row has a dropdown menu set to 'AND NOT' and a search box containing 'fishcakes'. Each search box has a small 'x' icon in the top right corner.

- Wildcard symbols (usually ?) search for alternative spellings, e.g. behavio?r finds behaviour and behavior.
- Use truncation (usually *) to find different word endings, e.g. behav* finds behave, behavior, behaviour, behavioural, behaviouralism. (Check the help options in each database to find out which symbol to use).
- Use "...\" to search for phrases.

Check which articles are the most cited

- In Scopus or Web of Science re-order your search results by the number of times each article has been cited
- Use the functions to analyse search results in Scopus or Web of Science to find out:
 - Who are the most prolific authors in your results list;
 - Which journals have published the most papers in your results list.

Additional tips

- Keep a record of your searches and sources.
- Create alerts in databases to keep on top of the latest literature published in your field.
- Use RefWorks (or a similar reference management package) to keep track of, and organise, your references.
- Don't forget to request items we don't have access to at NTU.

Additional support is available from your [Research Support Librarian](#)