

Making the case.

An academic
guide to
research



In order to get the most out of your essays, dissertations and projects, it is worth thinking about how you find and select information.

You will spend a lot of time gathering information for use in essays and dissertations, and finding relevant books, journal articles, websites, newspapers to read or DVDs to watch can help enhance the grades you get. The challenge is to find material that is **relevant** to your topic and **academically reliable** without searching through material that has nothing to do with your topic. Developing an effective search strategy is essential to make good use of your time and locate what you need.

This academic skills guide will help you to develop skills to aid your search for material relevant to your topic. It will enable you to translate your essay title or topic into key search terms, develop your knowledge of search techniques and an evaluative approach to your findings.

Contents

1	Information literacy	3
2	Where to start gathering information	3
2.1	Library catalogues	3
2.2	Databases	4
2.3	Internet search engines	4
2.4	Internet gateways and portals	4
3	Is this text relevant?	4
4	Identifying your search terms	4
4.1	Core terms	5
4.2	Exploding your terms	5
4.3	Combining your terms	5
4.4	Using truncation and wildcards	6
4.5	Placing search limits	6
5	Recording references to sources	7
6	Getting the most from your sources	7
7	Further research	8
8	Making notes	9
8.1	Making notes to help you select important material	9
8.2	Making notes to help you understand	9
8.3	Making notes to give you an overview	9
8.4	Organising your notes	9
8.5	Key points and detail	9
9	Using the libraries of the University of Southampton	10

1. Information literacy

We are now being bombarded with more and more information from an ever growing number of global sources. Developing ‘information literacy’ is a key transferable skill, which is essential in the workplace as well as at university. Both private companies and public sector organisations are selecting and evaluating vast amounts of information on a daily basis. This process of selection and evaluation is equally important when you are locating and analysing information for your essays

Find relevant information

You should recognise a need for information to suit your purpose, locate the best resources for your topic, develop an effective search to find useful references and evaluate the quality of what you find to select the most useful.

Save time

You should plan your searching and avoid hours of trial and error searching or surfing, identify relevant resources instead of relying only on internet search engines, and check which references are in the library so you can go straight to the shelf.

Make good use of what libraries and the internet has to offer

You should be aware of the range of resources that support your subject, identify key resources, have knowledge of useful services e.g. Inter-library loans, enhance IT skills through search techniques, and know how to contact your librarian.

Develop your critical thinking and approach to research

You should critically evaluate information from different sources, reflect on your approach to information searching and identify further improvement.

2. Where to start gathering information

You will start a project or course with a reading list of books, articles and internet resources provided by your supervisor or lecturer.

Buying material

You can buy some sources such as books, DVDs, journal articles and magazines. Make sure that anything you buy is useful to you. It is cheaper to buy material second hand, but make sure it is up-to-date. Amazon is particularly good for cheap second hand sources (www.amazon.co.uk).

Library and internet

Most of the resources you use will come from a library or the internet.

Choosing the right resources

With so many sources of information available how do you identify which will be the most appropriate? Many information sources can be categorised by their function. Some of the key resource types are:

2.1 Library catalogues

Library catalogues will be available at your school or college, local and university libraries. Electronic library catalogues will enable you to search for recent book and journal periodical titles, but you will need to check what each library catalogue covers before you search. It is worth remembering that most libraries still have a card catalogue in a cabinet covering older stock. It is easy to forget that not everything is on the electronic library catalogues.

2.2 Databases

There are many databases that are designed to help you search for information. The most common give you titles of journal articles, which are important as individual library catalogues are usually unable to give you this level of detail. For a list of reliable databases specific to your subject take a look at your subject page in *Learn, discover, develop & create. University of Southampton guide to research* (remember that this is organised by subject and your topic may cover more than one area).

2.3 Internet search engines

There is much more to gathering information than a quick Web search using Google and cutting-and-pasting some of the text you find. In fact, that method counts as plagiarism (see the academic skills guide *Acknowledging knowledge* for more detail on this). It is also essential that you do not rely on Wikipedia, as this is in no way considered to be a sound academic resource. Search engines such as Google can interrogate many thousands of websites so you will get a large number of hits, however there is no quality assurance so you are just as likely to be looking at the home page of a teenager in Texas as a professor in Paris. It is vitally important that the information that you use for your work is placed in an academic context. Search engines can be a good place to start if you already have some information, e.g. the name of a researcher or a group working in your subject area. See *Learn, discover, develop & create. University of Southampton guide to research* for a list of academically reliable internet sites for your subject area.

2.4 Internet gateways and portals

These are collections of academically assured web resources. They therefore have less coverage than search engines, but are of high quality. They are often also subject specific. See *Learn, discover, develop & create. University of Southampton guide to research* for gateways in your subject area.

3. Is this text relevant?

When you know the essay question or topic, check that possible texts are relevant by examining:

- **Date:** How up-to-date is the information?
- **Author:** Is the author an authority in the topic?
- **Contents:** Are there specific chapters devoted to your topic?
- **Index:** Are there specific references to your topic?
- **Introduction:** Does it give a promising overview of the text?
- **Chapters:** Scan the beginnings and endings of likely chapters: do they seem to be worth reading?

See the academic skills guide *Navigating the page* on reading effectively for further detail on assessing the relevance and academic nature of the text you have found.

4. Identifying your search terms

Learning how to identify your key terms and then apply them in carrying out a search is one of the most important aspects of conducting an effective search strategy. In this section, we guide you through the process of selecting terms and applying them.

4.1 Core terms

Before you search any catalogue or database it is useful to sit down and think about your topic. What exactly is it that you want out of your search? This often involves translating your dissertation or essay title into some core search terms.

To illustrate what is involved, let us take the following essay title.

“Evaluate the impact of cyber crime on businesses in the globalised economy”

The first step is to break the question up into key concept groups by identifying concrete terms or phrases related to the topic of the essay. It can be useful to ask “what would be the impact on my search if I left this term out?”. In this case, the search would not mean very much if we left out the phrase ‘cyber crime’ or the term ‘businesses’. The geographical scope of business in the ‘globalised economy’ is also important as the question is asking about the global picture and not just the UK.

It is a good idea to leave out some of the less concrete terms like ‘evaluate’ (or, for example, terms such as ‘analyse’ or ‘discuss’). There is a list of these essay instruction words in the academic skills guide *Posing the question*. These are common words in essay titles which indicate how to approach the essay as a whole, but as they are not topic specific they are often not useful search terms. Some words are so common that the database will stop searches on words such as ‘and’, ‘the’, ‘it’, ‘of’ etc. These are called ‘stop words’ and also need to be omitted from the search.

4.2 Exploding your terms

Once you have your core terms you can expand your search possibilities by thinking of similar ways of expressing the same concepts. One technique is to think of how else you might have phrased your essay title. It can be useful to have a blank sheet of paper in front of you and try to list as many extra words as you can for each of your key concepts. You can make lists or draw mind-maps. Alternative words for your core terms might be synonyms (e.g. business ~ company) or narrower terms (e.g. globalised economy ~ European Economic and Monetary Union). Sometimes there may be appropriate broader terms as well (e.g. Britain ~ United Kingdom). There may be acronyms and full names of phrases and organisations of which to take account (e.g. Small and medium-sized enterprises ~ SME). For example:

CYBER CRIME	BUSINESSES	GLOBALISED ECONOMY
Hacking	Company	World Trade Organisation
Cyber Terrorism	Banks	World Bank
Identity Theft	Financial Services	International Monetary Fund
	Multinationals	European Economic and Monetary Union

4.3 Combining your terms

The next stage is to work out the best way of combining your search terms. Whether you are using a catalogue, search engine or database, many resources share the same search logic even if they use slightly different techniques and this is especially true of journal article databases. This search logic is sometimes referred to as ‘Boolean logic’. Most databases will allow you to combine your search terms so that you can be more specific in your search. Some databases or search engines will default to an ‘easy search option’, but this is only really useful for a quick search

where you put in a couple of words and see what comes out. It is really worth using the ‘advanced’ or ‘full’ search option which give you control over a range of search tools and make the results of your search more specific and relevant. Remember that if you only have a few or do not come out with any results, then you need to broaden your search terms or find alternatives for them.

Boolean search

- You can combine different concepts together with the word AND showing that you must have both terms appearing in each match that is retrieved: e.g. single currency AND businesses AND South West England
- You can combine together terms in the same concept group with OR showing that you must have one of the terms appearing in each match that is retrieved: e.g. single currency OR EMU OR Euro
- You can combine the different concept groups together by using brackets: e.g. (single currency or EMU or Euro) and (businesses or company) and (UK or United Kingdom)

4.4 Using truncation and wildcards

Truncation and wildcarding are useful techniques to ensure that you have picked up all relevant permutations of a word. The symbols used for this tend to vary depending on the resource so check the help pages

Truncation means that you cut off a word at the stem, which allows for any ending. Common symbols that can allow you to do this are * and \$. e.g. global* will pick up global, globalise, globalisation, etc. This tactic is also good for picking up plurals.

Although use of truncation is useful in many circumstances sometimes it can actually hinder your search. This happens when the stem of your word is too common: e.g. if you truncated illness to ill* hoping to pick up ill and illness you will also get illustrate, illegitimate, etc. and will in fact retrieve a huge number of irrelevant items.

Wildcarding allows you to use a symbol to stand for any letter in the middle of a word, a bit like a blank tile in Scrabble. This is most commonly a ? but again you will need to check: e.g. globali?e will pick up globalise and globalize. It is an excellent technique for covering the interchangeable use of s and z in spellings.

Wildcarding may also allow you to cover extra letters in the middle of a word. Yet again check your help pages: e.g. behaviour will pick up behavior and behaviour. Again, this is an excellent way to cover both U.S. and English spelling variations.

4.5 Placing search limits

Most databases allow you to place a number of different types of limit on your search. It is always worth looking at each new database to see what options are available. Some common facilities are:

Limit by title

If your key words appear only in the title of the article or book then it is likely that the work will be reasonably core to your topic. Most databases default to search all of the data in the database. This will help you generate the maximum number of hits, but if all your key words appear only in the abstract it may be more peripheral to your topic.

Limit by material type

Often you can limit by type of material. A common approach would be to limit by journal articles only and exclude other types of material (e.g. book reviews).

Limit by year and date range

If you are only interested in material from a certain time period (e.g. the last five years) then it is useful to make use of the date limit facility, especially if the database covers a large time span.

Limit by language

If you do not know German then you can limit by English only. If you are German then you may want to see what has been published in German first and then broaden your search later.

Sometimes placing one limit only makes a small difference, but the cumulative effect of placing a selection of limits can have a real impact on your search. It can really improve the relevance of the material you retrieve and save you from looking at longer lists of tangential material.

5. Recording references to sources

Note the sources of quotations as you find them, including the page number of the quotation.

You should record the references you find because:

- Most importantly, you will need to provide a **bibliography** and include **full references** for any works that you mention in the text of your essay or dissertation. See the academic skills guide *Acknowledging knowledge*.
- A database may not give the full text of an article – perhaps only the bibliographic information – and you will need to search a library catalogue separately in order to obtain the full resource.
- You will need the complete bibliographic reference to find some items on the shelf of a library: e.g. for journal articles you will need to keep details of the volume number and pages of the article within the volume, as well as the journal title.
- When you do research reading it is crucial that you are able to find the information again in case you need to check a quotation or argument.

You do not want to be running around looking for references when you should be finishing your essay. Once you have decided that a particular text has the information you need, start by recording the details you will need for your bibliography.

For a quick overview, here is an example of bibliographic details for a book:

Andrew J. Bacevich, *American Empire: The Realities and Consequences of U.S. Diplomacy* (Cambridge MA: Harvard University Press, 2002).

Noting down this information during your research will make it possible for you to give a correct reference to the work when you quote the ideas in it. You will find comprehensive advice on bibliographies, referencing and citation styles in the academic skills guide *Acknowledging knowledge*.

6. Getting the most from your sources

Critical evaluation of your material is an important part of your search strategy. Once you have run your initial search you need to see how successful it has been. Looking at the book and article titles and their contents pages or abstracts can give you a lot of information to help you decide how relevant the articles or book chapters will be to your essay or dissertation.

Here is a checklist of things to look out for:

STATEMENT	TICK
I have looked at the abstract, contents page or indices to see if I can pull out any other relevant terms to add to my search.	
I have checked the introductions and conclusions for relevance to my topic. Do they seem too specific or too general? Is the article, book or website wholly about my topic or is the main focus of the work something else which happens to have a tangential relationship to my subject?	
I have looked for information about the methodology of the study. How does this relate to the approach I am taking with my dissertation or essay?	
I have noted any restrictions on the scope of the research covered by the article e.g. years covered, gender aspect, focus on specific countries.	
I have identified the type of study e.g. a retrospective case study, a theoretical model, a forecast of activity.	

If one or more of the statements have not been ticked then you need to be more rigorous in your critical evaluation of your material.

It is unlikely that your first search will be perfect and give you all the information you need. Once you have checked the material you can look at where you need to go next with your search.

7. Further research

Follow up references

When you have found a relevant source, make sure that you follow up references in footnotes and bibliography as they may lead you to sources which are equally as valuable as that which you are using, and you know they will be of relevance because they have been cited in support of an argument which you have already determined is relevant.

Follow up the work of an author or research group

If you find a work by a particular author to be convincing or useful to your own essay, you might also look up other works by that author. Also, remember to think about the perspective and context of the author and try to find works, authors or research groups with opposing arguments.

Extra search terms

It may be that you need to try a few extra search terms in order to make sure that you have covered all the possible alternatives. Review the list of key terms and concepts for your chosen topic, and then do a second search of catalogues, websites and databases.

8. Making notes

8.1 Making notes to help you select important material

Once you have noted bibliographic details, you can make notes on the text. You can do this either by making your own notes, highlighting and annotating photocopied text or your own copy if you have brought it, or by using Post-it notes.

- **Relevance:** note down points that are relevant to what you are working on
- **Reference:** note the page number so you can reference the material in your essay, and retrace your steps if you need to
- **Quote:** write down all quotations exactly, using inverted commas. Check that the quotations are accurate
- **Organisation:** make sure that you keep your own comments and reflections separate from actual quotations, so you can reference your work properly

8.2 Making notes to help you understand

It is important that you understand the material you find so you can use it to best effect in your essay.

- **Your own words:** putting the information into your own words helps you to understand it
- **Your understanding:** compare your notes with the original text to check that you have understood it
- **Your comments:** add your own comments to any quotations you write down, to remind yourself, possibly in a few months time:
 - why you think they were important
 - if you agree with them

8.3 Making notes to give you an overview

You do not have to remember every piece of information that you find, but it will be helpful to have an overview of your argument and sources so you can make links between them.

- **Keywords:** choose keywords which you will associate with the main facts and central concepts
- **Visuals:** visual images and colours will help you make links, particularly if you are a Visual Learner – use diagrams and pictures to represent facts and arguments
- **Mind maps:** you can use mind-mapping when you are summarising information
- **Index cards:** copy the most important information onto index cards which you can refer to at any time

See the academic skills guide *Posing the question* for further advice on this.

8.4 Organising your notes

Organising your notes will help you structure your essay and keep relevant information together.

- **Organise:** organise your notes to help you understand the material and structure your essay
- **Headings:** use headings and numbered lists to organise your notes
- **Keywords:** write keywords in the margin to summarise each point
- **Highlight:** highlight and underline your notes in colour to make key points stand out, and to show links

8.5 Key points and detail

One of the skills that is essential to success both in studying and in most careers is distinguishing between key points and details: 'seeing the wood for the tree'. A tree is a good analogy for acquiring this level of discrimination:

- The trunk represents the key central concept (e.g. cyber crime)
- The branches are less fundamental concepts (e.g. types of cyber crimes such as identity theft, credit card fraud, hacking)
- The leaves are the details (e.g. case studies and specific examples of cyber crimes)

At the end of listening to a lecture, or reading a chapter of a book, you should know what is important (the key points), what is detail (supporting evidence for the key points), and how the two relate to each other.

9. Using the libraries of the University of Southampton

The University of Southampton's Libraries contain hundreds of thousands of books and journals and provide access to a huge range of online journals and other academic resources. Check the website of the library for opening hours, visitor policy and the ID you need to bring to gain access.

The University Library has an excellent website (<http://www.soton.ac.uk/library/>) and printed guides that will help you make the most of the information and resources available.

The main catalogue of the University of Southampton is WebCat (<http://www-lib.soton.ac.uk/>), and BOPCAS covers recent British Official Publications in the Hartley Library (<http://www.bopcas.soton.ac.uk/>).

You might also like to look at *Learn, discover, develop & create. University of Southampton guide to research*, which provides the call numbers for each subject area (i.e. the system of letter and number combinations that you need to locate books and journals in the library). The guide provides a list of online journals by subject area that you can access when visiting the University Library. Finally, the guide acts as a gateway to a variety of freely available and academically sound internet resources.