

Information Gathering

After reading this section you will have a better understanding of :

OBJECTIVES

- Different information uses
- The variety of information sources
- How to search for information
- How to select the right information for your needs

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Information gathering

The following section explores the process of gathering information from a variety of sources for a variety of reasons.

Learning to develop effective information gathering strategies will help your studying in a number of different ways.

Effective information gathering can:

- utilise your time more efficiently and effectively
- develop critical thinking through the use of sifting/sorting techniques
- broaden your outlook and inform your subject understanding through the exploration of more diverse sources.

Information gathering can be used for a variety of different reasons; however, the main benefit with regards to your academic studies is that you will become aware of more diverse sources, opinions and approaches which can only enhance your academic work.

A broad, well-researched foundation of knowledge will help you more accurately develop your own approaches and opinions, a key element to academic achievement.



This section of the Study Guide should be read in conjunction with the **Information Technology Skills Guide** published by the University's Flexible Learning Initiative, Computing Services and the University Library.

This section will deal with the broad principles and practice underlying information gathering techniques whilst the **Information Technology Skills Guide** explores the many practical tools and electronic sources of information that will help you find the information you need.

Information for a reason

Information comes from a variety of sources and is applied to a range of purposes.

People use information for many reasons. Here are some. You can probably think of more :

- to widen knowledge
- to develop skills
- to reduce uncertainty
- to deepen understanding
- to solve problems
- to gain inspiration
- to save time and/or effort
- to secure power/advantage

and even

- to be entertained.

For students, information is a very important ingredient for:

- essays, reports, projects and dissertations
- practical exercises and laboratory work
- seminars and discussion groups
- revision and examinations.

There is no shortage of information - television, radio, newspapers, journals, books, posters, the Internet and even what we hear in meetings and lectures. Sometimes we don't particularly want it all but it keeps on flowing!

Surrounded by so much information, what is the problem?

One problem is finding the right **kind** and the right **quality** of information from the vast amount available. Gauging the appropriate level and quality of your information can be a time consuming challenge.

Many people complain of having too much information; too many things to read, too much to absorb. It's hard to stem the tide of information, because new events, ideas and discoveries are always turning up. In these circumstances we have a risk of being overloaded with information and some techniques for sifting are needed.

Different sources

Information is available from a variety of sources through a variety of means. An effective search, and one likely to be of increased benefit, takes into account this diversity rather than simply going to the shelves in the library for the relevant text book or books.

The many different sources available to you at university and beyond will include the following:

- Journals
- Text books
- Theses
- Newspapers
- CD ROM
- Internet (on-line information)
- Audio/video tapes
- Microfilms and microfiche
- Slides
- Your own notes and experiences
- Your academic staff and other departmental resources
- The work of friends and other students.

In addition there are also a large number of other sources including reports, surveys and policy statements from government, local government, industry, commerce, professional bodies, charities, voluntary organisation and so on.

An imaginative approach to gathering information is likely to reveal more interesting and beneficial results in terms of being able to present a reasoned and balanced insight in your studies.

Gathering strategies

The following procedure broadly defines an effective information gathering strategy:



ADAPTED FROM:

Bruce, C. (1992) Developing students' library research skills. HERDSA Green Guide No. 13. HERDSA, Campbelltown, NSW, Australia.

This process embodies several different stages that are essential to the implementation of an effective search.

We shall now explore each of these in detail.

Identifying the problem

The first area of attack is to quite simply identify what information you need and why.

Whilst we have stressed the need to research widely and thoroughly, this is different to attempting to establish everything that there has even been written on a topic. This is both impractical and unlikely to produce the desired results.

Search areas

The following questions will help you to limit the breadth of your search.

- **What do you need information for?**
 - A ten minute presentation?
 - A 5000 word report?
 - A 15000 word dissertation?
 - A laboratory experiment?
 - An equipment order?

These questions will help you gauge the **amount** of information that you need to search for. Further consideration might also be given to the **level** of material required:

- How knowledgeable are you?
- How knowledgeable is your reader?
- What level of understanding will you be expected to display?

Once you have identified **why** you want information you will need to work out **what** information you need?

This question can be answered through the following questions searching for detail:

- Is there a patent on ... ?
- Who are the main suppliers of ... ?
- What is the equation for ... ?
- Where can I find a description of ... ?
- Has there been any research on ... ?

Once you have identified **what** you need to look for you need to explore **how** you are going to find it.

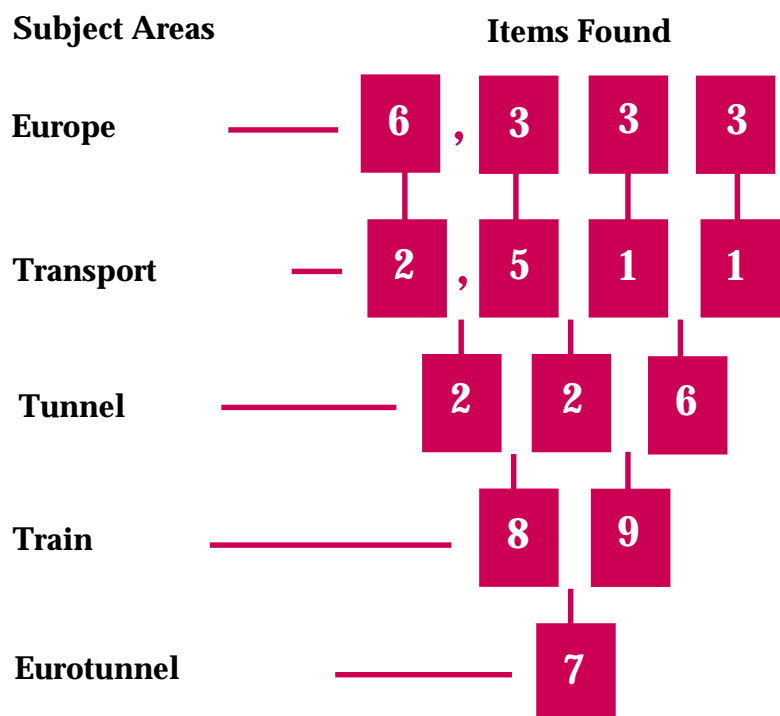
There are broadly three areas that you can address here, namely:

- **Subject area**
What subject categories would your information fall into?
- **Author(s)**
Are you (or your friends, tutor etc.) aware of anyone writing in this particular area?
- **Sources**
Are you aware of any particular texts, journals, reference books that would cater to your needs?

We shall now explore each of these in detail.



Many search tools such as computerised library catalogues, indexes in the back of books or journal abstracts are collated into subject areas. You can narrow your search by identifying the subjects related to your information needs. For example, a search using the university library catalogue revealed the following:



As you can see, the careful choice of subject areas significantly affected the range of the search.

General vs. specific

There are dangers in being both too general (a large number of related items, too many to search through) and too specific (too few returns, possibly missing vital supporting information). Your choice of search areas will need to reflect the work you need to carry out and the nature/level of information you require.

Flexibility

You will need to be flexible when establishing your key subject areas because not every storage or information retrieval system will use the same subject notation. Think of a range of similar words that might also describe or encompass your subject area.

Computerised systems will often refer you to similar or related subject areas, but always think laterally before deciding that your source contains little or no information of use.

Author(s)

When considering authors you will need to think whether they are:

- recognised as authorities in their field
- acknowledged as sources of:
 - primary information (artists, designers, researchers etc.)
 - secondary information (critics, historians etc.).

Sources

When considering sources you will need to think of:

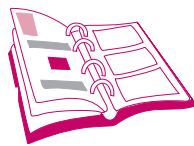
- When was it published or written? (Using "old" material without being aware of it can cause problems.)
- What kind of document is it? (Books can provide basic information, journals up-to-date accounts, government papers detailed policy etc.)
- Is it an advanced or basic item?
- Is the material in non-printed form? (Don't simply focus on printed texts, a large amount of information is now available electronically.)

Planning your search

This is the stage at which you will plan how to put your search into action. It will be useful to consider the following:

- How long do you have to carry out your search?
- What do you need to help you search?
- Where will your search be carried out? (In the library, computer centre, laboratory?)
- Are the materials readily/freely available? (Will they need to be ordered or paid for?)
- Are the materials available locally? (Or will you need to travel?)
- Will you have access to the materials? (Or will access be restricted without approval?)
- Will you be able to borrow the material? (Or will you need to work with it "on-sight"?)

Plan your search, working out **what** you need to find, **where** you can find it and **how** you can access it.



You may have a specific timetable or deadline limiting the time available for your search. Advice on simple time management techniques can be found in another section of this guide, **Organising yourself**.

Adapting your method

In many cases you will need to adapt your plan to respond to the tools and resources that you have available to you.

For example, as we have already mentioned, different storage systems use different subject indexes and

key words. You will need to think flexibly in order to gain the most out of the system you are using, particularly when you are crossing between different storage media.

It may pay dividends to spend a little time familiarising yourself with the idiosyncratic language of each new information retrieval/storage system prior to launching into the search itself.

Similarly, whilst a paper-based search method may require more time than a computer-based one that can automate much of the search for you, you may need time to familiarise yourself with new technology or software. Again, you will need to adapt your working practices accordingly.

Carrying out your search

When you are implementing your search you will need to maintain some degree of flexibility when responding to different search tools and different retrieval/storage media.

You will also come across interesting information and additional sources of information than you may not have anticipated.

Carrying out an information search not only produces required information, but also exposes you to different, or indeed contradictory opinions.

You will need to gauge what is still relevant to your needs; what can enhance your work within the original guidelines? Simply discovering an interesting point may not make that point relevant to your present task. Refer back to your original search criteria; is this new information or source:

- Directly relevant?
- Partially relevant?
- Simply irrelevant?

You will need to adhere to your guidelines if you are to sift your sources successfully, and prioritise those that are related to your work.

Sifting and selecting

You will frequently end up with a lot of references after searching for information. This may be especially true if you have used electronic sources. You may not have time to find and read **all** of them so you will have to make choices.

For a variety of reasons not all references are equally useful and not all references are suitable for a particular task or project. Sifting and selecting references is therefore an important activity.

Here are some suggestions to help you choose:

Is it really about the subject you want?

Using a single keyword for searching can sometimes find items that don't quite match what you want. The context may be different. For example, spinning in textiles, spinning in metalworking, spinning of electrons. It may be necessary to 'refine' your searching by combining keywords.

Remember, titles can be very misleading. Look at an abstract or summary of a journal article, or chapter heading if it's a book, to get a fuller picture.

When was it published or written?

The age of material is often important. For many purposes you will want the latest, up-to-date information. This is especially so for fast-changing subjects and topical events. For some areas of science, engineering, economics or business the age of the information is critical.

Sometimes you may need to go much further back in time to read material on basic ideas and principles, or long-forgotten topics that you wish to resurrect. As long as you intend using old material in this way that's fine.

Using 'old' material without being aware of it can lead to problems.

What kind of document is it?

Printed material comes in all shapes and sizes, each with its own special purpose. Books are ideal for basic information, journals for detailed and up-to-date accounts, and newspapers for current events and comment.

In what language is it produced?

Fairly obviously an item written in a language which you don't understand will be of little help. Often however, foreign language articles in journals have short summaries in English added.

In what media is it stored?

Not all the items which you identify will be printed on paper. In many cases slides, audio-tapes, video tapes and similar productions are useful for your work. Don't be put off by the fact that they are different from the ordinary printed material. Audio-visual presentations are a very effective way of communicating facts and ideas. Remember to set aside a bit more time to get used to the equipment needed to use these productions if you are unfamiliar with them.

What about the author's reputation?

You may be able to get some idea of the quality of the item from knowing what author or organisation has produced it. For example, the author may be a well known and reputable specialist in the subject. (He or she may be one of your lecturers!)

Some journals accept only refereed articles - that is, they are carefully vetted by a panel of expert editors to make sure that they meet a certain standard before being published.

How basic or advanced is the item?

Material varies in the level of knowledge needed to use it. If you are new to a subject then you will want an introductory level text to help you get to know it. On the other hand if you are working at an advanced level you will want appropriate material.

Record keeping

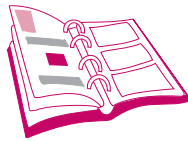
At all stages of your searching you should take comprehensive notes detailing **what** you have found and **where**. This will serve two purposes, namely:

- It will help you maintain a record of all useful information whether you have used it or not (it may of use in the future)
- You will need to acknowledge all of your sources of information to avoid plagiarism.

One common form of written reference is as follows:

Clark, R., P. (1996) Study Guide,
Loughborough University, Loughborough.

However, different disciplines prefer different referencing methods. You should seek clarification of the required style from your course tutors.



The **Taking notes** section of this guide will help you take efficient and effective notes.

Summary

Information gathering skills will be essential to your studying and the development of your subject knowledge. Higher level studying at university (third or fourth year for example) will make substantial demands upon your searching skills as you will need to show a much broader awareness than in the preliminary stages of your study.

Effective searching requires a clear focus, exploring diverse information sources and flexibility to accommodate different search tools and unexpected results.

