What is a literature review?

A literature review is the comprehensive study and interpretation of literature that relates to a particular topic (Aveyard 2007). A literature review must relate to a specific question for which an answer is then sought by searching and analysing existing literature that has been written about the subject referred to in the question. A literature review is useful because it brings together all the relevant pieces of literature on a topic and ensures that no one piece is seen in isolation. If you think of an individual piece of literature as one piece of a jigsaw, then a literature review represents the made-up jigsaw with all the individual pieces of information on a topic contributing to the whole picture.

Ask yourself why you are undertaking a literature review and why it is important in your research?

Stages

1. Identifying well defined research question
2. Developing a research strategy
3. Evaluation of the literature you identify
4. Combining the literature
5. Reiterating the purpose of the review

Does a literature review have to be undertaken in a planned methodological way?

The simple answer to this question is yes!

One attribute of a literature review that is common to all disciplines is the need for it to be undertaken in a planned, methodological way. The approach taken must be systematic. This is what distinguishes a review from an essay and ensures that you achieve a comprehensive coverage of the literature. Please note, however, that the term ‘systematic review’ is used within many disciplines to refer to a specifically focused review that has been undertaken according to a specific protocol which specifies the depth and structure required of the review. You are unlikely to have the time and resources available to you to undertake a systematic review of this nature, but are expected to undertake a review that is systematic.

A well known example of the pitfalls of hand picking information you wish to include in your review is given by Professor Knipschild, who obtained a copy of a book by the (twice awarded) Nobel Prize winner Professor Linus Pauling entitled “How to live longer and feel better”.

In this book, the author used a selection of literature to claim that vitamin C is an effective remedy against the common cold.
Unconvinced by the quality of evidence provided in the book, Knipschild and colleagues set out to repeat Professor Pauling’s original review and found many additional studies that did not support the claim to vitamin C’s therapeutic qualities (Knipschild 1994).

Now imagine Pauling to be the postgraduate student and Professor Knipschild the external examiner and you can see the disastrous consequences for the student who failed to undertake a comprehensive systematic approach to their literature reviewing process...

Let’s consider an example from the arts and humanities.

In 2006, historian David Irving was sentenced for three years for claiming doubt about the existence of the gas chambers in the Nazi concentration camps. This is documented in The Guardian Monday 20th February 2006.

This document can be found in the resource bank.

Regarded as part of a movement known as holocaust deniers, the historian was found guilty by an Austrian court of holding unpalatable views which were unfounded by evidence.

Whether or not the historian should have been granted the right to freedom of speech can be debated. However in prosecution of Irving, the court used a testimony in the form of a comprehensive review of the evidence surrounding the existence of the gas chambers.

**What to do**

From these examples, you can identify the importance of a systematic approach to your literature review and the inaccurate conclusions you are likely to draw from an unsystematic approach.

**Does a literature review need to have a focused question?**

Again, the simple answer is yes!
There are two main reasons why you need a focused review question. These are to define the scope of the review and to define the terms used in the review.

1. Defining the scope of the review.
2. Defining the terms.

Keeping focused in your literature review:

1. **Defining the scope of the review**

   This is the most fundamental part of focusing your review.

   For example, if you are exploring the way in which Dickens portrays the use of children as a labour market in nineteenth century London, you need to establish the scope of literature you are seeking to include.

   You must not get sidetracked into looking at literature that explores the use of child labour in another city or the laws surrounding the education of children. These topics might well be relevant later on in your study, but if they do not have a direct relation to your literature review question, then do not include them. The only exception to this would be if this related literature did in fact include reference to child labour. If it does not then you should not include it.

   We will discuss the issue of finding 'hidden' data which is relevant to your review within other literatures in more details when we look at searching strategies and how to identify appropriate literature.

   What is important to remember is that there is very likely to be an enormous amount of literature on your topic area.

   If you do not focus your literature review on what is relevant to your research question, your review is likely to become unwieldy and unable to focus on the questions you need to address. You will end up with an essay that discussed many themes but does not focus on the central ones that you need to draw on to develop your study.

2. **Defining the terms**

   Once you have defined the scope of your review, you then need to define the terms you use in your review. For example, if you are exploring the influences on Beethoven's early life and what led him to a musical career, you would need to define what you mean by influences and what you mean by early life. Then, when you are searching through the archives of the available literature, you will know exactly what you are looking for.
What types of academic literature are there?

What types of academic literature are there?

Before you start to think about what literature you are going to include in your review, it is useful to think broadly about the types of literature that exist.

Wallace and Wray (2002) categorise the literature you are likely to encounter:

- theoretical literature
- research literature
- practice literature
- policy literature.

Theoretical Literature

The term theory is generally taken to mean a construct about what the world is like. We would normally expect a theory to be based upon some evidence but this is not necessarily the case – anyone can suggest a theory and some will be more convincing than others.

Take for example, one early theory that the world was flat. This theory was based upon the knowledge of the time and it was not before the advances in science led to discovery that the world was indeed round that the theory was unproven.

Theoretical knowledge is often developed on the basis of our empirical observations of the world. Consider the example to follow. In the example, the theory was developed but was then largely unproven. At other times theory can be developed from empirical observation but not confirmed.

For example when HIV-AIDS was first identified in late 1970-80s, various theories were developed about route of transmission, causation and so on. These were made on the basis of observations made about the disease. It was only later when the disease had been thoroughly investigated that many of these theories were unproven. Even now in the face of much empirical evidence about the nature and origin of the disease, alternative theories about the nature and course of the disease still persist.

Website details for this topic are found in the Resource bank.
When you encounter literature which you would classify as theoretical literature – whether it is the work of Descartes or your university professor – remember that it is just a theory and you should regard it as such. Look critically at the evidence upon which it is based and the claims which it makes and make your own assessment of the quality of the theory provided.

**Research Literature**

Research literature is generally taken to mean a report of a systematic investigation which has been undertaken in response to a specific research question. Research involves the collection of data to address a specific research question. For some research studies empirical data will be collected, while for other the data collected will be in the form of historical documents or literary texts. The research question will often arise from theory in an attempt to prove or disprove it.

You will also come across reviews of research. These are very useful as they combine the findings of many different studies and allow you to see a study in the context of others.

For example, we have knowledge that bacterial counts on the skin are reduced by applying an antiseptic skin wash. We also know that the risk of infection is related to the number of bacteria on the skin. We can therefore theorise that applying an antiseptic skin wash prior to surgery is likely to result in less risk of infection, but at the present time there is no empirical evidence to demonstrate this.

If we wanted to know for certain that the use of an antiseptic skin wash really did reduce the risk of infection prior to surgery we could set up a systematic research study to explore this. One way of doing this would be to apply skin wash to one group of patients and not to another and observe the rate of infection in both groups. This would have ethical implications given what we currently know about the use of skin wash and it may be considered unethical to withhold skin wash from one group of patients. However for a definitive answer to the question a study such as this one would have to be undertaken.

This example of research is an empirical research study in which data is collected by scientific, direct observation of human participants. The method described is a randomised controlled trial. In this method, a group of participants are randomised into two or more groups. Randomisation ensures that each group is essentially the same. When an intervention is applied to one of the groups, for example application of skin wash, and not to the other groups, any differences in outcomes in terms of rates of infection can be attributed to the intervention.
However not all research will look like this. There are many different ways in which a research study can be undertaken. This will vary according to which academic discipline you are working within. Some approaches involve numerical measurement, as in the example described above where the rates of infection can be counted. Other approaches involve description and do not attempt to quantify the information they collect, but they still collect data from human participants. Some approaches collect data from animal subjects and others might be literature based and involve the systematic review of literary/historical/scientific text relating to the topic of research.

In short, there are many different approaches to research and it is your job when undertaking a literature review to identify what is research and what is not. In principle, a research paper is recognised by its systematic approach in an attempt to answer a specific research question. When you encounter literature that you would classify as research literature, you need to identify the type of method undertaken to carry out the research and to make your assessment of the quality of evidence the research literature provides. This will be discussed in more detail later in this course.

**Practice Literature**

Practice literature is that which is written by practitioners about their field of expertise. Expert opinion, discussion articles and papers about ‘how to…’ are likely to abound in your area of interest. These may be published observations and ideas about practice-related issues. Be warned, some practice literature might overlap into what you would also classify as research and you need to be clear about whether the literature represents practice or research. You can do this mainly by assessing the extent to which there is a systematic approach to the collection of data which is then used to draw conclusions.

For example, Anne Frank's diary is a detailed documentation of the life of a young girl living in hiding in the Second World War. When it was discovered shortly after the close of the war, those who found it were unsure and certainly unaware of the historical significance of this diary and it was not published for a long time. Once published, the diary has become one of the most important and well-known pieces of evidence of the experience of those in hiding.

**Policy Literature**

Policy literature is literature that tells practitioners or professionals how to act. Policy literature can be based on theory, research or practice and it is your job to examine the policy to discern the basis for the advice or diktats that are written. For example, a policy that is based on research is likely to carry more weight than a policy based on theory alone. Similarly, a policy that is based on the professional opinion or practice-based literature of a group of professionals is likely to carry less weight than one based on research. If policy documents are an important part of your literature review, it is useful to consider how they were constructed and on what basis they were established.
This outline guide to the type of literature is a broad overview and you will find that not all of the literature you encounter will fit neatly into these categories. There may be some blurring of the boundaries and you might develop new categories to describe the literature you use. However it is important to be able to recognise the type of literature that you find. This will enable you to make sense of it. You can then begin to compare it to other literature that you encounter. This will greatly assist the process of critical appraisal or evaluation of the literature which we will consider later in the course. Finally, do not underestimate the power of recently published review articles, even if not directly relevant to your research question, to help you decide the structure and content of your review.

- include relevant and appropriate literature
- exclude literature relating to your topic area but which does not relate to the specific focus of your review.

What to do

Once you have established the specific question for your review, you need to consider which literature is most relevant to enable you to answer this question. Consider the following examples which illustrate how to identify appropriate literature.

Example 1: Research literature

Let’s say that your postgraduate, doctoral, or postdoctoral study is in catering and you are exploring ways to promote adherence to hand-hygiene policy within local restaurants and cafes.

The focus of your literature review is to explore existing work that has been done in the area and one focus of your review is to establish what is known about adherence to hand-hygiene policies. When you start thinking around this topic, it becomes evident to you that the only type of literature that can really answer this question is research literature that has incorporated a direct observational method. Any other approach, for example asking catering whether they always wash their hands in the course of their work, is likely to result in less than 100% honesty. Therefore the literature most relevant to you in this instance is observational studies.

Example 2: Practice and policy literature

If you were undertaking a political study looking at the newspapers coverage of the first year of Gordon Brown’s premiership, your hierarchy of evidence would be newspaper articles themselves, any other discussion about the Prime Minister that was not printed in a newspaper would not be top of your hierarchy.

Example 3: Practice literature

If you were undertaking a study exploring the rise of feminism through the eyes of the women involved during the start of the 1900s, literature at the top of your hierarchy would be first-hand
accounts of feminism from that time. Second-hand accounts, although they might provide you with useful data, would not be top of your hierarchy.

Example 4: Theory and research literature

If you were undertaking a study exploring the rationales that have been developed to identify the causes of lung cancer, you would be searching for theoretical and research literature.

What not to do

Think back to the time of the Second Gulf War and the case made by the British Government to justify the invasion of Iraq. Imagine you were the Prime Minister at the time and needed to present a case (something similar to a literature review) about the security threat posed by to the United Kingdom and to provide a rationale for the UK invasion.

Summary

You might have heard of the term 'hierarchy of evidence’. This term is generally used to refer to a ranking system used for classifying research approaches used for evaluating the effectiveness of a particular medical treatment or intervention. In my book (Aveyard 2007) I advise readers to develop their own 'hierarchy of evidence' of literature that is most relevant and useful in addressing the particular question. For example, in the study of hand hygiene outlined above, top of the research’s hierarchy of evidence would be direct observational studies of hand hygiene, followed by other less direct approaches.

Identifying inclusion and exclusion criteria

Inclusion and exclusion criteria are specifications set by you, as the researcher, in advance of a literature search so that you know exactly what type of literature you are looking for and what type of literature is not relevant to your review.

Once you have identified what type of literature you need in your review, the next step is to articulate this into specific inclusion and exclusion criteria that will guide your literature search.

This is important as you are likely to be overwhelmed by the amount of available literature on your topic and you need to have a systematic way of ensuring that you only identify literature that is directly relevant to your review.

Consider the following extract taken from Aldana’s paper Financial Impact of Health Promotion Programs:

A comprehensive review of the literature.

American Journal of Health Promotion 2001: 15 (5).
Purpose: The purpose of this review is to summarise the literature on the ability of health promotion programs to reduce employee-related healthcare expenditures and absenteeism.

Search process: Using key words in a literature-searching program, a comprehensive search was conducted on the following databases: MEDLINE, Embase, HealthSTAR. SPORTDiscus, PsycINFO, SciSearch, ERIC and ABI Inform.

Study inclusion and exclusion criteria: All data-based studies that appeared in peer-reviewed journals in the English language. Theses, dissertations or presentation abstracts that were not published in peer-reviewed journals were excluded. The initial search identified 196 studies, but only 72 met the inclusion criteria and were included in the review.

Key points

Setting clear inclusion and exclusion criteria as you commence your literature review will help to ensure that your review remains focused and that you include only what is relevant to your review question. Setting these criteria also enables you to demonstrate to the examiners that you are clear about the focus of your search and about what is not relevant to you.

How to search for literature

Think about the hundreds, if not more, of hits you get when you search on 'Google' and why you often get directed to websites that are irrelevant to your needs. Google is such a huge search engine that it will identify sites which will have only marginal relevance to your search. Google's main search engine also does not restrict to educational or scientific websites but covers all aspects of any topic. Google is therefore not a useful search engine when you are searching for an academic project. With this in mind, Google have developed Google Scholar, which is for academic purposes and will direct you to academic papers and resources. There are also search engines specifically related to your academic discipline, which will be available through your library. The principles of searching these academic search engines are the same as for Google. You type in key words and you should retrieve relevant academic papers. There are however a wide range of academic search engines which you are likely to use when searching for literature.

- What are databases?

Databases are electronic tools that will index the sort of material that you need for your literature review. Whether that might be general articles, conference proceedings, other people’s theses, dissertations, even book chapters in some cases.

How do you use databases?

So you can use them in some ways like a telephone directory whereby you can search for your particular subject area, keywords, possibly particular authors that you've identified that are important to your research, and you can use the database to
manipulate your search, you can broaden things out, narrow things down. You can save details for example so that you can then run the search again to keep up to date with the literature as your research progresses, and you can also for example import the details of items that you’ve used into reference management software, if that’s what you’re using.

Which databases are relevant to my subject area?

In terms of which databases are relevant to your subject area, it’s a good idea to have a look around your library’s web pages because it will often be the library that subscribes to these databases, or you might like to talk to your supervisor and see if they’ve got any particular tips they would give you, or other fellow researchers.

What kind of information do databases contain?

Databases are the focus of a literature research in many ways because they contain the sort of material that you will need for your literature review when you're putting things into context. The sort of material that’s covered in databases will be what you could call academically rigorous. It will come from material which has been submitted to journals which have editorial boards for example, so the quality of the information could be said to be very high, and it’s that kind of material that you will need to be referring to in your literature review. It will depend a little bit on the subject area that you’re researching. So for example, in the sciences, databases would be absolutely key as in many other social science areas, but if you were researching popular culture for example, as well as using databases, you’d be also wanting to use primary sources like magazines, newspapers, that kind of thing. So there is a difference as well between primary sources and secondary sources, whereby the databases will be providing you with the secondary material discussing the actual research.

Recording your searching strategy will enable you to demonstrate in your final thesis or project write up that you have undertaken a systematic procedure in identifying the literature you incorporated in your review. This is important to convince your readers that you are unlikely to have missed out any significant pieces of literature. You can then demonstrate the rigour of your review. An undocumented searching strategy, or indeed an incomplete searching strategy, will not demonstrate rigour in your literature review and doubt may be cast on the conclusions you make, both in the review and in the project as a whole.

When you present your final thesis, you will not need to present the full documentation of your searching strategy, a summary is sufficient. However you will know that you have followed a clear and logical method and you can provide further evidence of this if required to do so. A conceptual map might help you illustrate this.

Recording your references. When you undertake a big study that is likely to run for several years, it is very important to be meticulous in recording your references. You will not remember sources to which you referred to early on in your study in the final year when you are writing up. Remember to document and reference your own work, for example lab reports, according to what is accepted practice in your academic area.
Recording your strategy also will act as an aide memoir so that you can plan for what you need to search for next and keep a track of where you are with your searching.

Use of an electronic reference manager can assist you in keeping track of your references and also in helping you to order these in the appropriate format when you write up your final project. A reference manager also gives you the opportunity to change the style of the presentation of the references, according to whichever format is required. For example if you submit a paper for publication which requires a different referencing format than the one you are using for the presentation of your thesis, the reference manager can produce a reference list specific to the journal’s requirements.

Remember to document your search strategy when you write up your literature review so that the reader can see clearly how you searched for and obtained the literature you include. You should include details of databases searched and search terms and key words used. You should also refer to additional searching strategies used and how successful your searches were.

**Selecting your literature**

Now you have identified the literature that is likely to be relevant to your review. Depending on the size and purpose of your review, you are likely to be faced with a long list of references that you need to make sense of and order. Just as you have undertaken a systematic search, now you need to demonstrate that you are systematic in your approach to selecting the references that are appropriate to your study.

Ideally, you would find that given your focused question for your review, all the references you identify would be appropriate. This is unlikely to be the case for the following reasons:

- You might find that some of your key words have duplicate meanings. For example, take the word 'competence'. This can mean that a person is able to do a particular task or activity. Alternatively it can mean that a person is fit to make his or her own decisions in a medical context. As it is not possible to differentiate between these two meanings in a search, you are likely to retrieve references for both of these meanings.
- You might also find that your search is more comprehensive than selective, that is because in order to retrieve relevant references, you have had to cast your net wide into the literature. You are therefore likely to retrieve many references that do not in fact turn out to be relevant

Therefore, the next step once you have identified your literature is to sort through this literature to identify what is appropriate for inclusion in your review.

**Tips for identifying appropriate references:**

- Refer to the abstract, which you can probably access easily through the database. In most cases the abstract will inform you about the content of the literature. Sometimes however the focus of your literature review might be 'hidden' within the literature and not mentioned in the abstract. In this case you will have to access the whole paper. At other times it might
not be clear from the abstract, if you are looking at a specific aspect of a topic, whether the paper is relevant.

- Refer back to your inclusion and exclusion criteria. These are now useful again to help you to decide if the references you have identified through your search strategy are indeed relevant to your review.
- Evaluate the relevance of the literature to your review. Read the abstract of each reference thoroughly and see if you can establish the relevance of the literature to your review. From your reading of the abstract, classify the references that you have into the following categories:
  - clearly relevant
  - possibly relevant
  - unlikely to be relevant.

Summary

It is important to emphasise that the process of searching for appropriate literature continues once you have completed your searching. Once you have a list of references from the searching strategies you have undertaken, you need to maintain the same methodological approach to determine the relevance of the literature to your review to ensure that inappropriate literature is not included within your review.

The need to be critical

Whatever the role of the literature review in your project, it is always necessary to be critical of the literature you use. As a general rule, it is never enough to cite a reference without providing some form of justifying statement as to the quality of the literature and the contribution it makes to your review.

When you start reading you need to be critical in the way in which you respond to each academic text you encounter. This means that you need to be able to evaluate the content of the written material and assess the meaning and significance of that text for your research.

Take, for example, the often referred to article published (and now retracted) by The Lancet in 1998 by Professor Wakefield and colleagues. Wakefield was a paediatric endocrinologist working in London when he published a paper in The Lancet outlining his suspicion that children who received the MMR (measles, mumps and rubella) vaccination were at greater risk of developing autism. His suspicion was based on a sample of 12 children, all of whom had had the MMR vaccination and had developed autism or bowel disorders. He did not have a control group. Reference to the full article can be found in the Resource bank.

Imagine you are going to cite Wakefield's paper in a literature review. How would you do so? Please indicate which reference to the paper is the most suitable.

Response

This paper does not demonstrate a strong evidence of a link between autism/bowel disease and the vaccination. The paper
documents the cases of 12 children who happened to receive
the MMR vaccination and then went on to develop autism. This
was a very small sample size and any observations on such a small sample could be due to chance
alone. Standing alone this paper does not provide strong evidence. However you might argue that
evidence of this tentative nature (suspicion of a link between autism/bowel disease and the
vaccination) warrants further study. You would be unwise to rule out a link completely at this stage.
In reality, much further research was undertaken on the safety of the MMR vaccination and no link
between bowel disease/autism was found.

Response 3 is therefore the most reasonable. Responses 1 and 2 are not critical of the methods used
and do not acknowledge the very tentative nature of the findings. Response 4 is very critical and
does not acknowledge that there may be something important in Wakefield’s study that warrants
further exploration.

**Explaining the differences the literature identified**

You will often hear confused and sometimes cynical voices of those who encounter the
findings of research reports. They might tell you that one week they read an article advising
that children be taught to read in a certain way, only to read the following week that another
way is better. This can lead to confusion and mistrust of the research community who seem to
be giving out conflicting information.

Take, for example, the role of breastfeeding in reducing infant mortality and morbidity. This
is an area of frequent media coverage and, while most studies demonstrate the benefits of
breastfeeding, this is not always the case. The effect of breastfeeding differs according to
which disease is under examination.

Oddy *et al* (2003) undertook a cohort study in Australia to explore the protective nature of
breastfeeding against asthma (a cohort study is a study in which two or more groups or
cohorts are followed up to examine whether exposures measured at the beginning lead to
outcomes, such as disease). They concluded that exclusive breastfeeding until four months of
age was protective. Meanwhile Kramer *et al* (2007) undertook a cluster randomised control
trial (RCT) in Canada, in which groups of mothers received additional promotional
information about breastfeeding. In this study, although the experimental group consisted of
more breastfed babies, due to the promotion of breastfeeding, this was not associated with a
reduced rate of asthma or other allergies. Hence the findings from the two studies seem to
conflict.

Imagine both of these papers received headline news when published. Which headline would
you believe? Sometimes the differences in the reports of research can be due to media
reporting and this is easily clarified. However, more often, the differences in the research
reports result from genuine difference in the findings. This can be due to the different research methods used and different research populations involved in the study.

It is your job in undertaking a literature review to explain these dissimilarities and to determine how strong the evidence is in the studies you include in your review.

**Critical appraisal tools**

There are many critical appraisal tools you can use to help you in the process of critical appraisal.

Critical appraisal tools are checklists of questions you can apply to the literature you are reading to assist you in identifying its strengths and weaknesses.

The checklists do not do the appraisal for you; they merely prompt you to ask relevant questions of the literature to inform your understanding of the arguments presented and to assist you in the evaluation of the literature. Therefore checklists are not a shortcut to the evaluation of the literature, unless you are familiar with the methods of investigation described. You need to get to know your literature and develop an understanding of the research approaches (if appropriate) before you begin your critical appraisal.

**Different types of critical appraisal tools**

There are many different types of critical appraisal checklists. Some are specific to the type of literature you are reading, while others are generic and could be applied to many different types of literature.

Some critical appraisal tools are specific to a particular research methodology, for example the CASP critical appraisal tools (which are referenced in the resource bank). On the website, you will find critical appraisal tools for many different types of quantitative studies, qualitative studies and systematic reviews.

Others appraisal tools are more generic - for example Cottrell's generic critical appraisal checklist (also referenced in the resource bank).

If you have literature that falls into the categories of theoretical, practice or policy, Wallace and Wray (2006) provide a useful generic checklist for the appraisal of academic texts. Wallace and Wray's generic checklist can be used to evaluate the quality of theoretical, practice and policy papers, including discussion papers and expert opinion. The checklist could also be used to evaluate websites. Click the button below to see the questions Wallace and Wray suggest should be asked of a text.

- What review question am I asking of this text?
Most postgraduate students are best advised to use an appropriate appraisal tool for assessing the strengths and weaknesses of their literature as this provides a structure and adds to the systematic approach to their review.

**Reliability of critical appraisal tools**

There is debate about the effectiveness, reliability and validity of critical appraisal tools. For example, Katrak (2004) undertook a review of 121 published critical appraisal tools and found few had been 'road tested' for the extent to which they did in fact assist with the evaluation of studies and concluded there to be no 'gold standard' tool.

**Summary**

There are many critical appraisal tools available and the ones selected here are just an example. Which tool you use will depend on the type of literature that you have. Discussion with your supervisor, or others who are working in your area, will help you to identify an appropriate tool. When you have identified which appraisal tool you will use, remember to justify your choice.

**Remember!**

Document carefully in your review how you evaluated the literature.

**Structuring your review**

Once you have critically appraised your literature, you need to consider how you will bring all the literature together and write it up. The first principle is to read and re-read your literature so that you are familiar with all the relevant literature you have identified. Then you
need to work out how each piece of literature relates to the other literature you have identified.

In principle, there are two approaches you can take to the drawing together of your literature review.

If you undertake a chronological approach, you will explore and review each piece of literature in order, referring to the strengths and weaknesses of each piece as you work through. Start with the first paper and do a brief review of the aims, findings and appraisal of the paper. Then go onto the subsequent papers. As you then discuss subsequent literature, you can relate the findings back to the findings of the earlier papers you looked at, so the main themes identified in the literature will emerge. This approach is logical and it presents a clear audit trail of which literature you reviewed, the strengths and weaknesses of each and how each relates to each other. For example, if there are some papers that report one finding and others that report a different finding, these can be carefully mapped and the reader can see how the findings in one paper are reflected in another paper or how they do not. Also, using this approach, the historical context is also evident. For example, if you were exploring the abolition of slavery, you would find that the momentum behind this movement reflected the historical context of views on race in US.

If you undertake a thematic approach to your review, you will go through each piece of literature to identify the main themes that emerge and then present these themes in your review. Using this approach, you need to go through your literature in the same way as you would if you were adopting a chronological approach but instead of writing this up as you go along, you start to develop an idea of the themes that arise from the literature. You are likely to develop a number of themes and as you continue to review your literature, you will add to the number of themes and to the content of the themes you develop. Your presentation of results for your review will relate to the themes you identified rather than to each piece of literature identified. If you undertake this approach, the work that you undertake in reviewing all the literature is not explicit in your review, as only the main themes identified are recorded in your final literature review. Therefore it can be difficult for the reader to see your audit trails of how you identified the themes. This is important as you need to demonstrate that you did not pick themes at random. You need to make the process of identifying themes as explicit as you can in your review.

**Weighing up the evidence**

Writing up your literature review requires you to weigh up the evidence so that small irrelevant facts do not get misinterpreted or weighted inappropriately. It is important that you weigh up the evidence and give appropriate weighting or coverage to the literature according to the strength of evidence it brings. This is where your critical appraisal of the literature really comes into play. For example, if you include the findings from a small or even badly designed study in your review, make sure that you do not give these findings as much weight as more substantial, robust studies. The following legal example illustrates the disastrous consequences that can happen if you give inappropriate weighting to any one piece of evidence when you are weighing up all the evidence. In this example, the court relied on poor evidence with devastating consequences.
A legal issue

The disastrous consequences that can happen if you do not do this are illustrated in the following video.

- **Weighing up the evidence**

  The Honourable Mrs. Justice Evans: Well you may remember the recent high profile case in which a leading expert in child health was struck off the General Medical Council because he brought misleading evidence to the trial of two mothers who’d been accused and convicted of the murder of their children who they claimed had been victims of cot death. The child health expert claimed that the chance of a cot death occurring twice in one family as 73 million to one. This evidence was used as vital evidence in the trial that secured the conviction of the two women. After the trial, the statistic was challenged and found to be inaccurate. The evidence he brought had been wrongly and inappropriately interpreted at the trial with disastrous results. This case illustrates the importance of giving the appropriate weighting to each piece of information in your review. It’s your job to assess the literature as a whole to judge the overall picture that the literature presents in response to your review question.

How to make your review critical

It is essential that you incorporate your critical appraisal into your review. This means that you must interrogate each piece of literature and assess the contribution that it makes to your review, and make this assessment explicit in your review.

Identify which of the two statements below illustrates the most use of critical appraisal.

**Eg. 1 Jones 2008 reports that students prefer lectures to seminars**

Eg.2 In a sample of 3000 students attending lectures at 2 red brick universities Jones (2008) found that 60% preferred lectures to seminars.

Response: In your postgraduate work this type of referencing is never sufficient. As a general rule, you must be able to justify the contribution made by the authors. By writing simply ‘Jones (2008)’ we do not know if this finding was his observation of one incident occurring or the result of a large scale research project. You need to state the context and quality of Jones’s contribution to the argument you are making.

Response: You should describe the evidence you have to support the statements you make. One approach is this: the first time you cite a new piece of literature, provide a brief but critical summary of the evidence that it brings. When you then refer back to this literature later on, you do not need to repeat this critical summary because it is already stated.

Summary

In summary, the main point to emphasise here is to avoid making reference to an author or a published paper without acknowledging what this paper is and its strengths and weaknesses. This principle applies whether you write up your review chronologically or thematically.
Using a chronological approach, you can demonstrate a critical approach by giving as much detail as you can about each piece of literature as you progress through your review. Using a thematic approach, you need to ensure that you give this critique of each piece of literature the first time you refer to it. Do not leave your reader to guess the importance of 'Smith 2009' - tell your reader what he did, why this was important and what the limitations of the work are.

For example, if there are some papers that report one finding and others that report a different findings, these can be carefully mapped and the reader can see how the findings in one paper are reflected in another paper or how they do not. Also, using this approach, the historical context is also evident. For example, if you were exploring the abolition of slavery, you would find that the momentum behind this movement reflected the historical context of views on race in US.

There is no right or wrong way to structure your review, as long as you follow a logical approach that you can defend. However you are likely to find that your approach will follow one of the approaches outlined above.

In principle, your review is likely to be structured as follows:

1. Purpose of literature review in relation to your research question.
2. Outline of search strategy
3. Outline of critical appraisal strategy
4. Outline of approach taken in combining the literature - chronological or thematic
5. Presentation of main findings with integration of critical appraisal

Summary of main findings and discussion.

You should now have an understanding of the processes involved when undertaking a literature review.

In this course we have discussed the importance of setting an appropriate question to guide your literature review, followed by developing appropriate systematic searching strategies and literature evaluation techniques. Finally, we have discussed the importance of writing up your review in such a way that you represent the literature fairly and honestly, so that one piece of high profile literature that is misleading does not dominate your entire review. It is also important to make the processes involved in the literature review (review question, literature searching strategy and evaluation) explicit when you write up your review.

It is our aim that the principles laid down in this course are generic and can be applied appropriately to whichever type of review you embark upon. Good luck!

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Books


Journal references


Websites for the Critical Appraisal Skills Programme

http://cochrane.org/reviews/en/ab004985.html
Cochrane Collaboration. Review on the Use of Topical Antiseptics

http://www.phru.nhs.uk/Pages/PHD/resources.htm
These are critical appraisal tools for quantitative and qualitative and evaluation research, available on line.

Websites on the so-called 'Iraq Dossier'

These websites give reference to newspaper articles which illustrate the examples given in the screen entitled 'What literature will be relevant to my review'.


http://www.timesonline.co.uk/tol/news/uk/article870395.ece