

Study guide/thesis handbook

Chapter 4 literature search

4 Literature search

Reviewing the literature is important in all stages of the research process. Research does not occur in isolation - it is always conducted in the context of what is already known about the topic and what still needs to be known. Even though a literature search and review is often depicted as a discrete step in the research process it is more usually a continuous process throughout a project, with peaks at the beginning and near the end of the project. The two following sections aim to cover the following:

- purpose of a literature review (section 4)
- accessing and retrieving information (section 4)
- organising research information (section 4)
- critiquing research reports (section 5)
- summarising and synthesising information in the form of a literature review (section 5).

Purpose of a literature search and review

A literature review is where a researcher “critically reviews the literature that is directly and indirectly related to both the topic and the proposed strategy of conducting the research” (DePoy & Gitlin, 1994, p.61). A key word in this definition is “critical” in that the literature is not just reviewed and restated but it is reviewed, summarised, and synthesised *in the context of the proposed study*. The author of a good literature review interprets and organises the literature so that it clarifies the problem, makes clear the relevance of the problem and states what is presently known and not known about the problem.

The purpose of a literature review is to determine the existing knowledge base around a particular topic or practice area. In particular it aims to:

- Determine what is known and not known about a subject, concept or problem
- Determine trends, gaps, and inconsistencies in the literature about a topic
- Describe the strengths and limitations of previous studies
- Discovers how concepts have been defined in other studies
- Help determine an appropriate research design for the research question
- Determine the need for replication of a study eg. using a different sample group, in a different location etc.

DePoy and Gitlin’s (1994) chapter on developing a literature review gives a good overview of the process involved.

Some useful pointers are given on; setting boundaries to your literature search (this is only possible if a clearly defined problem and question has been formulated); tips on organising information once it is collected; and how to critically evaluate research reports. Some of these points are just touched on in this chapter and more detailed reading about these areas are provided later in this section.

Preliminary search

When considering a topic for investigation, the first steps are often to talk to experts within the area about your idea and to do a preliminary literature search. The aim should be to *read around* your topic area. Phillips (1992) writes about the “search in research” and discusses that the initial search should be broad because “it is the broad perspective of search that places the emphasis on a process of discovery rather than on seeking to verify the initial theoretical rationale or the focus created by the inquiry.” (p. 50). In other words he is saying that when looking at an idea, a researcher should be open-minded and look at the wholeness of a phenomena and not just its parts. After having done this it may be necessary or desirable to then concentrate on the parts. However, by having considered the whole to begin with you will be much better at seeing the relatedness of the factors in your research to the ‘bigger picture’.

Carrying out a literature search

Literature searching is a skill worth developing. In conducting research, literature searching is the activity that can often consume the most time and cause the most frustration. The steps involved in a literature search are described in the reading by Muir (1993). This reading is short and is really only intended to give an overview of the process involved in searching for information relevant to your study.

The key to successful literature searching is becoming familiar with a library. University libraries are equipped with computer searching facilities (CD ROM) and gaining skill in doing CD ROM searches is extremely worthwhile. It is probably not too far in the future that we will be able to sit at home and have access to these literature searching databases.

CD ROM searching

CD ROM searching is the most efficient way of scanning thousands of references but the success of a search is dependent on the strategy used. The reading by Meloche details how to plan and conduct a CD ROM search. The flow diagram on page 28 of the article gives a very clear picture of the steps involved in doing on disc searches.

The use of more than one literature search database to ensure comprehensive coverage of a topic is illustrated in the article by Schulz and Bohannon (1995). In this article a search strategy and the result is mapped out. This article also illustrates that even with a well designed and executed search the references must be scanned in order to determine their relevance to your study.

Primary and secondary sources

Primary sources are written by the person(s) who developed the theory or conducted the research. They are first hand accounts of an event. Secondary sources are written by a person(s) other than the individual who developed the theory or conducted the research (ie. second hand accounts). Often a secondary source is a summary or review of other researcher's work. It is preferable to use a first hand report of research or theory. Therefore primary sources are always preferred to secondary. In fact the only times that secondary may be acceptable is if the primary is unavailable or written in a foreign language. In these cases a review by another author may assist the interpretation of the information. However, in learning to be a researcher it is important that most, if not all, of your references are primary references.

Reflect about why primary sources are preferable. What happens when information is transferred from the originator to the recipient via an intermediary?

Organising information

This section covers the organisation of material once it has been located. The *note taking template* in the study activity (see later) will be useful for recording information from relevant articles. Another aspect which is important is the storage of articles which may need to be located at a later point. The readings in this section present various ideas about organising information. They are included so that they may help you determine a way to store and organise your research material.

Recording information from references and organising references is an important part of the literature review process. Hours can be wasted going back through references because you have no record of where a particular quote or definition was taken from. Lefering and Neugebaur (1991) discuss several ways of organising reference material; in piles of articles, by using a cardindex and by computer. This authors touch on the use of computer based reference systems. These are useful and Endnote™ is probably one of the better known programs and it is available for both PCs and Macintosh computers. The advantage of these systems is that they can be used for both retrieval of references by search words and for citations when writing articles or assignments.

Reading 4.5
Lefering and
Neugebaur (1991)

The reading by Orna and Stevens (1995) is included primarily for the section on storing information (p 47) . It covers, in a very clear and logical way, the different ways that you can classify articles to increase the ease of finding them later.

Reading 4.6
Orna & Stever
(1995)

Study activity

Prior to going to the library or organising a search on your topic you will need a plan of what you need to find out. Reading 4.7 suggests strategies to help you focus your research topic and determine key terms and keywords. These few pages are taken from a book aimed at introducing

Reading 4.7
Gawith, (1991)

secondary and tertiary students to study skills. Strategies of mapping, keywords, questioning and scanning and skim reading are highlighted. An example of how the strategies can be used are included.

By using these techniques you should not only save time but should achieve a focused review of your topic area. Worksheets to assist you carry out the first three steps suggested in the reading are included at the end of the reading. These worksheets may be worth copying and used to help plan the assessment exercise for this section

Reference

Phillips, J. (1992). Search in Research. *Nursing Science Quarterly*, 5(2), 50-51.

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Critiquing the literature

Once you have obtained the articles identified in your search, you will need to read and critique them. This step enables you to assess the merits of each article and their importance in building an understanding of the topic area.

The reading by Phillips (1986) discusses the elements that are important in a research critique. She defines a research critique as “an objective, systematic attempt to identify, appreciate and weigh the merits and demerits, of a particular piece of scientific research” (p. 87).

Reading 5.1
Phillips (1986)

The first section of the reading discusses the characteristics that should be present in a fair and unbiased critique. The second section gives an excellent information (from p 101) on evaluating a research report. The characteristics discussed in this section, that is, clarity of presentation, progression of arguments, explicit rationale, and documentation from the literature are factors that are essential to well formulated literature reviews and research studies. In reading this section it would be worthwhile noting the characteristics which make a study strong and reflect about these in relation to your own study.

In the reading by Williams (1992), critical appraisal of information is discussed in the context of educating readers to be objective research consumers. This reading highlights that you look both at the quality of the research *and* the implications of the research.

Reading 5.2
Williams (1991)

Most useful in this reading is a series of examples where the search strategy used to identify relevant information is illustrated and then the most relevant article is appraised. This chapter basically sums up what has been covered throughout this section but illustrates it with examples (using quantitative research methods only). This is a lengthy reading. Scanning the examples for clues about the strengths and weaknesses of the studies and the literature search strategy used is probably the most useful process at this stage, rather than in-depth study of the whole

reading.

The short reading by Parse, Coyne and Smith (1985) is included to provide a framework for critiquing qualitative research studies. Most information about performing research critiques use quantitative studies as examples. The table on page 116 of the reading is worth noting if you are thinking about using a qualitative design yourself or need to critique qualitative studies.

You may find it useful to use the note making template as a recording sheet when you come to critically appraise the research articles you will be asked to find as part of the assessment exercise for this section.

Writing a literature review

The literature review sets the scene of a study. It provides the information on *what* the topic is and what has been done before on this topic, *why* you are doing the study and why you propose to do it in the way you do, and *how* the phenomena has been studied before.

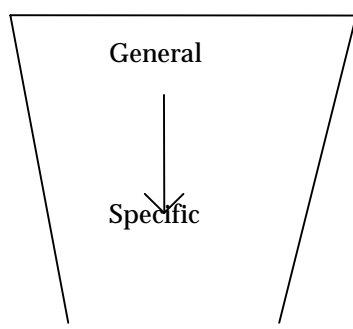
In writing a literature review there are a number of important points to remember. These are that the literature review:

- is a critique of *relevant* articles not just an account of articles,
- contains a coherent theme that leads to a description of your proposed study,
- provides supporting evidence from the literature for claims you make
- is appropriately and consistently referenced (in this subject you may choose the style you are most familiar with)

Structure of a literature review

There are two main ways of arranging material in a literature review; the general-to-specific method and the chronological method.

The general-to-specific method uses a structure where broad concepts relevant to your study are introduced first and these are followed by more specific concepts. It can be illustrated as a inverted pyramid. Within this framework you would also identify the reasons why it is important to pursue your direction of investigation by demonstrating gaps or questions raised in the literature. The diagram on the next page illustrates a research topic being introduced. The introduction would incorporate the literature review.



FIRST STAGE: General statement(s) about a field of research to provide the reader with a *setting* for the problem to be reported

SECOND STAGE: More specific statements about the aspects of the problem *already studied* by other researchers

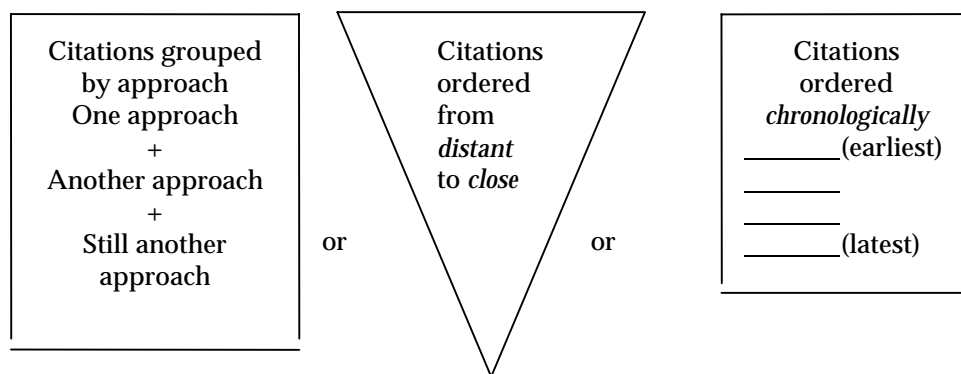
THIRD STAGE: Statement(s) that indicate *the need for more investigation*

FOURTH STAGE: Very specific statement(s) giving *the purpose/objectives* of the writer's study

From: Weissberg, R., & Buker, S. (1990). *Writing up research: Experimental research report writing for students of English*. (p. 22) New Jersey: Prentice-Hall Inc.

The second method of ordering the literature review is chronologically. This means that citations may be used in order of the time that the research reported within them occurred or your topic can be introduced by relating developments within the fields as they occurred historically.

The diagram below from Weissberg & Buker (1990) illustrates the grouping of citations for the methods mentioned above. It also shows another structure in which approaches to a particular problem are introduced with citations being grouped according to approach being described.



From: Weissberg, R., & Buker, S. (1990). *Writing up research: Experimental research report writing for students of English*. (p. 46) New Jersey: Prentice-Hall Inc.

As you can see there is no one way to write a literature review. The major point to be made is that whatever method is used is must be organised in a way that develops a clear theme as to why the study you are proposing is warranted. The literature must be used to support your thesis, argument or rationale for the study.

The information provided in the reading by Leedy (1993) will assist you to construct a literature review. It offers practical suggestions of how to plan and write a review and will assist you in completing the study activity.

Study activity

Read the following abstract which was published in the Australian Occupational Therapy Journal on Ageing. After reading it once or twice, make a list of questions, the answers to which you would look for in the article. This can be a useful technique to make sure you read critically rather than accepting what is written at face value

Richmond, D. & McCracken, H. (1996). Health promotion and education for the elderly: Experience in an academic department of geriatric medicine. *Australian Journal on Ageing*, 15(1), 18-21.

A health promotion and education program for elderly people was based in the academic Department of Geriatric medicine of the University of Auckland for four and a half years. Its major objectives were to undertake health education and promotion research, develop community based initiatives in health education, produce educational resources relevant to older adults and train other personnel to lead health education programs. Considerable progress was made in meeting these objectives. Formal evaluation of the long term impact of programs, whose results may not be evident until after many years, is difficult. However, despite the fact that the program was terminated sooner than had been anticipated because of loss of funding, there was evidence that it had been successful. The achievements of the program were not only of value to the community of older people but to the Department itself. It is concluded that health promotion and education programs are worthwhile activities to be included within university departments of geriatric medicine.

Reading 5.4

Leedy, P. (1993)

Now re-read the introductory paragraph and the literature review in article by Jongbloed & Morgan (Reading 1.3)

- Make a note (4-5 words) of the purpose or key point raised in each paragraph. (This should read like a brief outline of the first review).
- Is the authors' key point clearer in some paragraphs than others? If so, why is this?
- Are the important concepts and ideas developed in a logical way?
- Have any important issues not been covered?

Make sure you are ready to discuss these activities in the next audio conference.

Assessment activity

Outline of a literature review and statement of the aims of the study

15%

The assessment activity related to this stage of the research process is to construct a detailed *outline of a literature review* that relates to your research topic and research question. The required length is 1 to 1 1/2 pages.

The reason an outline has been chosen is that it forces a researcher to plan what they will put into their review prior to writing it. It is often this initial step that gets passed over and as a consequence the literature review can lack logical sequencing and links to the research question

The first step is to locate 4 to 5 articles relevant to your study. You may find many more but by using the techniques discussed by Gawith (1991) in the previous chapter you should be able to identify the ones that contain aspects which focus on specific key areas related to your topic and question.

An outline involves ranking and ordering main ideas and key supporting points which will be included in your literature review. It provides a map of what will be included in each paragraph of your literature

review and how the information in the articles you have found will be incorporated to support key points. Two readings have been included at this point to assist you develop an outline.

The first reading by Sheridan and Dowdney (1986) is a chapter from a book on “How to write and publish articles in nursing”. There are some good ideas in this chapter about getting your ideas and information onto paper. The second reading by Bates (1980) gives a step by step description of how to develop an outline.

Reading 5.5
Sheridan & Dowc
(1986)

Your outline should conclude with a statement about the aim/aims of your study. It should be possible by tracing through the outline to see the need for the study.

Reading 5.6
Bates(1980)

To assist you to prepare your work for marking the following have been provided:

- An example of a Literature Review Outline
- Self assessment check list (provided in your Subject Information book)

Example: outline of a literature review

PARAGRAPH 1: Frequency and disablement:

- Forty-five percent of people who have had rheumatoid arthritis longer than five years will experience metacarpophalangeal (MCP) joint ulnar drift (Wilson, 1986).
- Ulnar drift is defined as abnormal ulnar deviation of the fingers at the MCP joints (Melvin, 1989).
- This is a disabling deformity and effects on function include:
 1. Initial loss of dexterity due to inability to position thumb, index and mid fingers in pinch to grasp small objects (Fess & Philips, 1987).
 2. Eventual reduction in MCP joint extension, preventing the positioning of the fingers to grasp large objects (Wilson, 1986).

PARAGRAPH 2: Major factors contributing to ulnar drift:

- The basic structure of the hand favours ulnar deviation, but supporting structures prevent deformity (Melvin, 1989). Chronic MCP synovitis causes ulnar drift via:
 1. Damage to the joint capsule and capsular distension (Wilson, 1986; Melvin, 1989).
 2. Cartilage loss and bone erosion (Wilson, 1986).
- MCP ulnar drift with wrist radial deviation deformity is called zigzag deformity.

Wrist radial deviation can aggravate ulnar drift deformity, but it is unclear whether it is a casual factor (Wilson, 1986; Fess & Philips, 1987; Melvin, 1989).

PARAGRAPH 3: Other factors contributing to ulnar drift:

- Flexor tenosynovitis tends to shift the flexors in an ulnar direction (Wilson, 1986).
- Flexor force during grip and pinch also aggravates ulnar drift (Fess &

Philips, 1987; Melvin, 1989).

- Intrinsic muscle spasm also favours ulnar drift (Wilson, 1986).
- With quiescent MCP synovitis the extensors move ulnarward and become fixed between joints. Eventually the MCPs dislocate volarly (Wilson, 1986).

PARAGRAPH 4: Literature suggests splinting has no effect:

- Early clinical opinion suggests that corrective splints can prevent or correct deformity and are indicated as soon as deviations from normal alignment are noted.
- However, the results of the first research study on this subject by Convery, Conaty and Nickel (1968) have been widely quoted as proof that splinting cannot consistently prevent deformity and cannot correct deformity (Souter, 1971; Fess & Philips, 1987). This is despite the authors stating that the rheumatoid hand could be amenable to a more functionally orientated splint, and admitting the study was seriously flawed (Convery et al., 1968). Melvin (1989) uses the Convery et al. study to state that splinting cannot correct ulnar drift, although results of splint use on ulnar drift are not included in the study.
- No research has since been attempted in this area, and clinicians have been advised by well respected texts such as Melvin (1989) not to attempt correction of ulnar drift via splinting. Thus, all articles describing clinical practice in this area since 1968 have merely described splints used to achieve better alignment of the fingers during activity performance only. There is thus a need for a well designed study of whether splinting can reduce ulnar drift deformity.

PARAGRAPH 5: Surgery is not the complete solution:

- There has been a growth in surgical literature on ulnar drift correction with the wane in splinting literature over recent years. However, both MCP synovectomy and arthroplasty are fraught with complications including reductions in motion and recurrence of ulnar drift. Many people are also not surgical candidates (Wilson, 1986).
- Because of the tendency, based on misinformation, not to attempt splinting to correct deformity in the early stages, essentially nothing is done until the hand becomes functionally useless. Surgery is often then considered as a last resort. This is not satisfactory, and surely evidence is required before splinting can be dismissed as valueless.
- In my practice I have found that I can achieve reduction in ulnar drift via splinting in some individuals with rheumatoid arthritis, provided certain preconditions are met.

PARAGRAPH 7: Preconditions for splinting:

- MCP synovitis has to be quiescent. With active synovitis corrective splinting is inappropriate as the joints are more vulnerable to damage from both internal and external forces (Fess & Philips, 1987). With the onset of local remission the joint assumes normal functional position

amenable to correction (Souter, 1971).

- The fingers need to be able to be actively radially deviated. This is one way to ensure necessary surrounding joint structures are intact. When considerable joint destruction has already occurred attempts to correct it via splinting may be detrimental and increase the likelihood of subluxation (Souter, 1971).
- The wrist needs to be included in the splint as radial deviation of the wrist will hinder the treatment of MCP ulnar drift and must be corrected before the digital deformities are treated (Wilson, 1986). The wear of a wrist splint may also help prevent the onset of ulnar drift (Souter, 1971).

CONCLUSION:

This study aims to determine the effectiveness of this “conservative treatment” (splinting and joint protection) in reducing ulnar drift deformity in people with rheumatoid arthritis and quiescent MCP synovitis.

REFERENCES:

Convery, F. R., Conaty, J. P. & Nickel, V. L. (1968). Dynamic splinting of the rheumatoid hand. Orthotics and Prosthetics 22 (March). pp. 41-45 (original work published 1967).

Fess, E. E. & Philips, C. A. (1987). Chapter 13: Splinting the arthritic hand. In E. E. Fess & C. A. Philips. Hand Splinting: Principles and Methods. (Pp. 309-324) St. Louis: The C. V. Mosby Company.

Melvin, J. L. (1989). Rheumatic Disease in the Adult and Child: Occupational Therapy and Rehabilitation (3rd ed.). Philadelphia: F. A. Davis Company.

Souter, W. A. (1971). Splintage in the rheumatoid hand. The Hand 3 (2). pp. 145-151.

Wilson, R. L. (1986). Rheumatoid arthritis of the hand. Orthopaedic Clinics of North America. 17 (2). pp. 313-343.

K. Baggaley 1996

Self assessment check list

The following criteria form the basis for critiquing your own work. A self assessment check list which matches these criteria is provided in the Subject Information book. You will be required to complete this and hand it in with your work. The self assessment activity serves as a means of evaluating your work against the important components of a literature review outline and forms the basis for the feedback you will receive from the teaching team.

The outline will be assessed on its:

- Structure -
 - logical development of outline

- key points relevant to topic presented
- concepts and terms defined
- introduction sets the scene for the study
- conclusion targets aim of the study
- links between key points are explicit
- need for the study is identified in relation to the

existing literature

- Style and presentation
- Sources
 - Referencing style
 - correct citation
 - critical appraisal of references
 - integration of references into outline

The completed Literature Review Outline and your self assessment should be mailed or faxed (08 8302 2645) to the School of Occupational Therapy by the due date.

References

Weissberg, R., & Buker, S. (1990). *Writing up research: Experimental research report writing for students of English*. New Jersey: Prentice-Hall Inc.