

---

# Topic ▶ Review of 3 Literature

## LEARNING OUTCOMES

By the end of this topic, you should be able to:

1. Define what is review of literature;
2. Identify the importance of a good literature review;
3. List the ideal procedures for review of literature;
4. Describe common weaknesses in review of literature; and
5. Critique a journal article.

## ▶ INTRODUCTION

A literature review uses as its database reports of primary or original scholarship, and does not report new primary scholarship itself. The primary reports used in the literature may be verbal, but in the vast majority of cases reports are written documents. The types of scholarship may be empirical, theoretical, critical/analytic or methodological in nature. Second, a literature review seeks to describe, summarise, evaluate, clarify and/or integrate the content of primary reports.

Cooper, H. M. (1989) Integrating research: a guide for literature reviews, 2nd Ed, Sage Publications, Newbury Park, Calif.

Do you agree with the statement by Cooper? The review of literature has not been properly understood by some graduate students. Some students have the opinion that literature review means collecting and compiling facts for the research being undertaken. In fact, the literature review process needs analytical thinking, critiquing ability and empirical approach. The review of literature is a standard topic of a research report especially thesis or dissertation. Review of literature is an integral part of an entire research process. When you undertake a research process, review of literature will help you to establish the theoretical roots of your field of interest, clarify your ideas and develop your methodology. The review of literature also helps you to integrate your findings with the existing body of knowledge once. You must remember that one of your important responsibilities in research is to compare your findings with those of others, and that is why we said review of literature plays a very important role in the research process.

In this topic, you will first define what is literature review. In Section 3.2, we will explain to you the importance of literature review. Following that, you will look at the 4 steps in literature review. After that, the topic will present to you the common weaknesses faced by researchers in completing a literature review. Finally, this topic will invite you to look at the steps required in reviewing journals. We hope this topic will guide you in your research progress. All the best!

## 3.1 WHAT IS LITERATURE REVIEW?

The aim of literature review is to *highlight what has been done so far* in the field of interest and how your findings relate to earlier research. The review of literature also indicates the following:

- (a) Approaches;
- (b) Methods;
- (c) Variables used; and
- (d) Statistical procedure.

Of foremost importance in a literature review is the findings itself. In the field of ICT, compiling literature review has always been a challenge. This is due to the nature of computing and information field which go through tremendous changes and new findings within a short period. The review gives an overview on findings based on previous research work done at the time of research period. The review also traces the general patterns of the findings and the conclusions that can be made based on the findings.

Generally, review of literature provides in-depth understanding and explanation on how your findings are similar to or novel from previous research work.

For example, your literature review could justify whether your work is an extension of what others have done. It could also indicate whether you are trying to replicate earlier studies in a different context. A good example would be a researcher who uses Service Oriented Architecture of software system to develop hardware modelling requirements. This is a good example of using existing studies in different contexts.

Review of literature also reveals *techniques* and *statistical* procedures that have not been attempted by others. To accomplish review of literature, you need to locate, read and evaluate research documents, reports as well as thesis and other sources of academic materials. Review done for one particular research process must be extensive and thorough because you are aiming to obtain a detailed account of the topic being studied. Normally, the emphasis and weight are heavier for PhD work since the results of PhD should be novel and narrowed down to a very specific research problem.

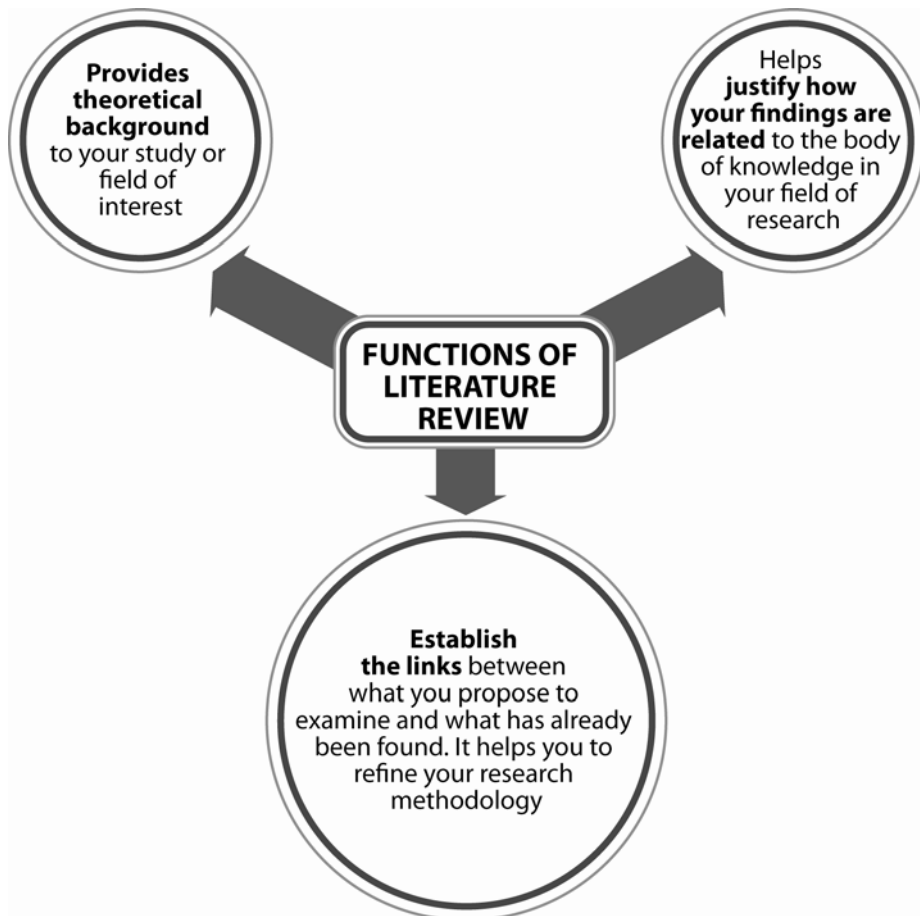


### ACTIVITY 3.1

Think of some obstacles graduate students are facing when doing Literature Review in ICT for their theses or research report.

## 3.2 THE IMPORTANCE OF LITERATURE REVIEW

Reviewing literature can be time-consuming and daunting. However, it is always rewarding. A review of literature has a number of functions in research methodology, as illustrated in Figure 3.1 below.



**Figure 3.1:** Functions of literature review in research

The following are the main importance of literature review:

(a) **Improve your Research Methodology**

Literature review helps you to acquire methodologies used by other researchers to find and solve research questions similar to the ones you are investigating. It will explain the procedures other researchers used and methods similar to the ones you are proposing. It will give you an idea whether the methods other researchers used worked for them and what are the problems they faced. By doing a review of literature, you will become aware of pitfalls and problems and could strategise well to select a methodology that you feel will suit your research work better.

(b) **Focus on Research Problem**

Review of literature could help you shape your research problem because the process of reviewing the literature helps you to understand the subject area better and thus helps you to conceptualise your research problem clearly and precisely. In addition, it also helps to understand the relationship between your research problem and body of knowledge in your research area.

(c) **Cater to Knowledge Base for Research Area**

One of the most important objectives of literature review is to ensure that you read widely around the subject area in which you intend to conduct research study. It is fundamental that you know what others are doing in your field of interest or the similar topic you have been working on as well as understanding theories that have been put forward and gaps that exist in the particular field. M.Sc and PhD candidates are expected to be experts in their area of study, therefore a thorough review of literature helps to fulfil this expectation.

(d) **Contextualising Research Findings**

Obtaining answers for your research questions is easy. The difficulties lies in how you examine your research findings in the existing body of knowledge. How do you answer your research questions compared to what other researchers concluded? What is the new knowledge contribution from your research work? How are your findings distinguished from those of other researchers? To answer these questions, you need to go back to the review of literature. It is important to put your findings in the context of what is already known and understood in your field of research.

(e) **Ensure Novelty in your Work**

By doing a review of literature, you do not run the risk of “reinventing the wheel,” meaning that wasting efforts on trying to rediscover something that is already known or published in the research arena. Therefore, through literature review, you could ensure novelty and new contribution in your research work.

Figure 3.2 below summarises the main importance of literature review explained earlier.



**Figure 3.2:** Importance of literature review

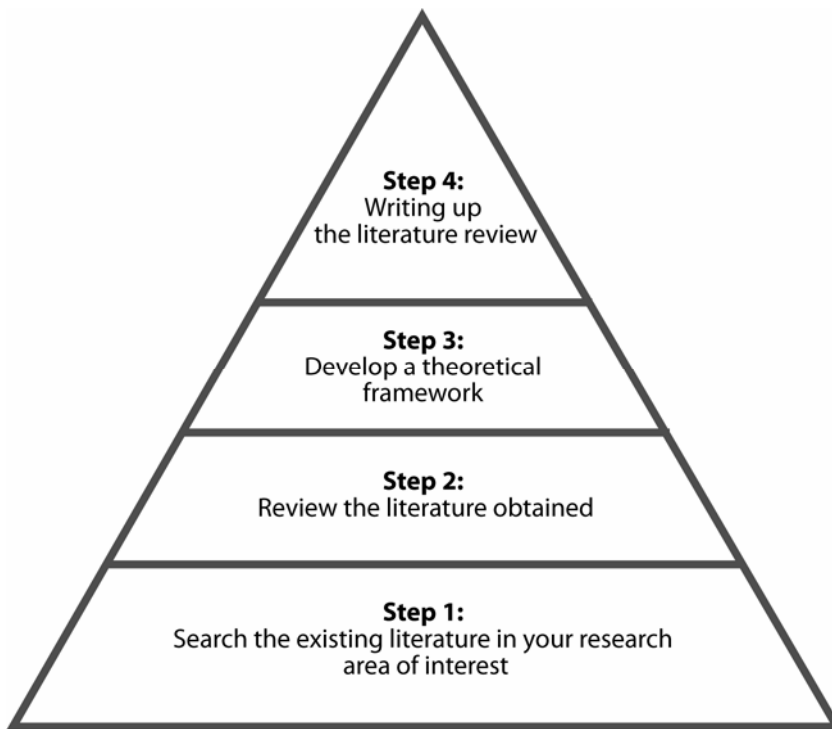


**SELF-CHECK 3.1**

1. What is meant by literature review?
2. List out the three importance of doing a literature review.

### 3.3 REVIEW OF LITERATURE PROCEDURES

Since ICT has a broad range of research problems, with various research designs and approach, it is important for you to have a specific idea of what you want to research. This is because there is danger in reviewing literature without having a reasonably specific idea of what you want to study. It can condition the thinking about your research and the methodology you might prefer, resulting in a less innovative choice of research problem and methodology than otherwise would have been the case. Therefore, try to draft your main idea before proceeding to review the literature. Generally there are 4 steps in literature review, as demonstrated by Figure 3.3 below.



**Figure 3.3:** Four important steps in literature review

Let us look at each of the steps in more detail.

#### **Step 1: Search the Existing Literature in your Research Area of Interest**

Once you choose your topic of interest, make sure it is a well-researched area and well studied which could give you more lines of research to choose from. Narrow your topics so that you can cover in depth. Comprehensive and narrowness of topic go hand in hand. Now, you can proceed to search the existing literature. To effectively search literature, have in mind some idea of the broad subject area and

the problem you wish to investigate. The first task would be compiling a bibliography in your research area. Books and journals are always the best sources for literature in particular research area. Information technology and communication (ICT) research findings can be sourced out in several prominent sources and these can save you enormous time. The sources include:

- (a) Indices of Journals ( e.g. ACM, IEEE Transactions and Elsevier )
- (b) Abstracts of articles (e.g. Dissertations Abstracts International, Emerald and IT Knowledge Base)
- (c) Citation indices(e.g. ProQuest and Scopus)

In most libraries, information on books, journals, dissertations and so on are stored in computers and CD-ROMs. OUM's Tan Sri Dr Abdullah Sanusi Digital Library has a vast collection of e-journals and digital books for ICT. This Digital Library can also help you prepare a bibliography and review the literature for your research topic.

### **Step 2: Review the Literature Obtained**

Once you have identified several journals and books, the next thing to do is to start reading them critically to pull together themes and issues that are associated with your research topic. Read and read! That is the bottom line of doing a review. If you do not have a framework or theme to begin your research with, use a separate paper to jot down the main points you extract from journal articles and books. Once you create a rough framework, you may slot in the extracted information accordingly. As you read further, do some critical review with particular references to the following aspects:

- (a) Note the theories put forward, critics, methods used (sample size, data used, measurement procedure)
- (b) Note whether the knowledge relevant to your designed framework has been confirmed beyond doubt
- (c) Find differences of opinions among researchers and jot down your opinions about their validity
- (d) Examine the gaps that exist in the body of knowledge

### **Step 3: Develop a Theoretical Framework**

Reviewing the literature can be a never-ending task. You must know that with the limited time you have to complete your research, it is important for you to set the boundary and parameters by looking into literature relevant to your research topic. Every information you obtain from literature sources must be sorted out accordingly with the themes and issues you put in your framework. Unless you review the literature with regard to the framework you developed, you will not be able to develop a focus in your literature search. This means your theoretical



framework will provide you a base and guide to read further. The best practice would be to develop a framework first and then dive into literature search or vice versa. Of course, as you read more about your research area, you are likely to change the framework. Do not worry much about this because it is part of a research process.

#### **Step 4: Writing up the Literature Review**

Now, the final task would be compiling and writing all the literature you read and reviewed. Begin your review with some theme or points that you want to emphasise. Organise and list all the themes you would like to discuss and relate. Organisation is of utmost importance and make the structure known to your reader. While writing, identify and describe various theories relevant to your field and specify gaps in body of the knowledge in that area. Proceed to explain recent advances in the area of study as well as current trends. Note that in the field of ICT research, current trends are always given great importance. We describe, do comparison and evaluate findings based on:

- (a) Assumptions of research
- (b) Theories related to the area of study
- (c) Hypotheses
- (d) Research designs applied
- (e) Variables selected
- (f) Potential future work speculated by researchers

We will go in depth on hypotheses and research designs in coming topics in this module. Most importantly, avoid plagiarism when writing. Give due recognition to the works of other researchers. Quote from other researchers' work to show how your findings contradict, confirm or add to them. This function is undertaken when writing about your findings, that is after finalising your data analysis during the research process. It does not cost anything to acknowledge sources. In fact, it shows the breadth and depth of your review and shows that your work is precise.

## 3.4 COMMON WEAKNESSES

Normally, beginners in research make the following mistakes as soon as they start writing the review of literature:

- (a) The review made is a mere description of various materials without making an effort to show the relation between the studies and main objective of the research topic.
- (b) Students tend to cut and paste, which SHOULD NOT be encouraged. Original works should be cited and quoted.
- (c) Journals or reports that are included are not critically evaluated. Critically evaluate the research questions, the methodology used and recommendations made by the researcher.

There is some evidence to suggest that students have not read the original works but instead have taken someone's work and cited it as though they had read the primary source.

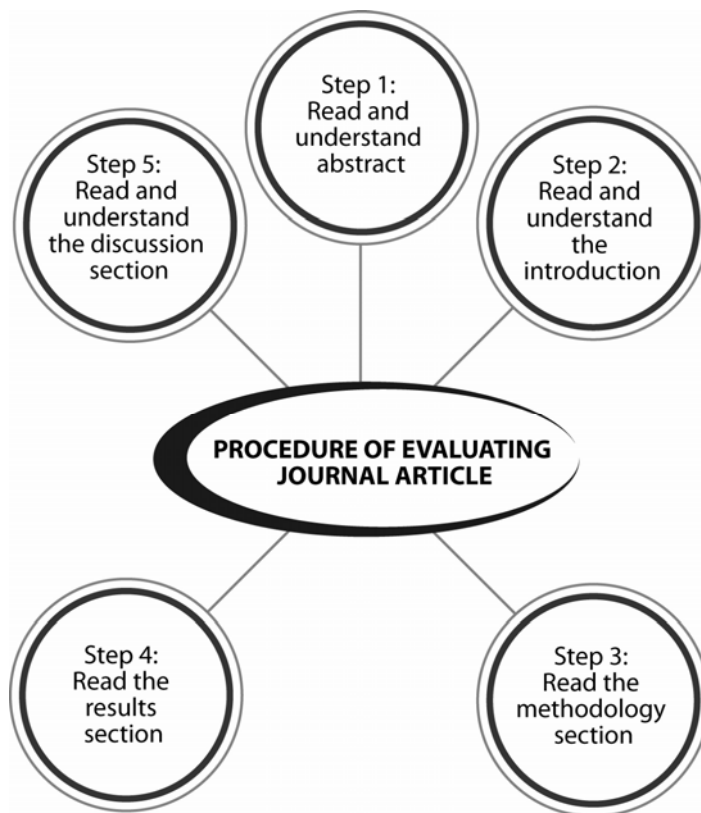


### SELF-CHECK 3.2

1. What are the procedures involved in the review of literature?
2. What are the common weaknesses in doing literature review?

## 3.5 EVALUATING JOURNAL ARTICLES

Writing your literature review is essential so that you would be able to interpret the works of other researchers. How do you go about evaluating journal articles or proceedings? The procedure for evaluating journal or research articles is shown in Figure 3.4.



**Figure 3.4:** The 5 step procedure of evaluating a journal article

### **Step 1: Read and Understand the Abstract**

- (a) What was the research about? Are the objectives or aims of the study specified clearly?
- (b) Was the design used described?
- (c) What are the reasons for understanding the research?

### **Step 2: Read and Understand the Introduction**

- (a) You should keep in mind that the author is assuming that the reader is an expert in the field and has some background knowledge about it.
- (b) References made may be short and brief because it is assumed that you know the people in the field (e.g. if you are exploring “search engine usage in ICT” then names like Larry Page or Sergey Brin must be known to you.)
- (c) Do some critique on the research questions whether it is applicable to the theme mentioned or not.

**Step 3: Read the Methodology Section**

- (a) This section describes the methods used to collect data and the background of the subjects used.
- (b) You should be able to do some critique on whether the subjects selected is clear
- (c) Are the issues of validity and reliability discussed?
- (d) If the topic was design and development, was the framework explained in sufficient detail? Could it have been done in another way?

**Step 4: Read the Results Section**

- (a) This section describes the connection between the results and the research questions or hypotheses
- (b) It also reports results relating to the research questions and other statistically significant results
- (c) Were the results clearly reported and presented? (e.g. usage of tables and graphs)
- (d) Do the results reflect predictions made in the Introduction section?

**Step 5: Read and Understand the Discussion Section**

- (a) This section describes main findings and relating it to the Introduction section.
- (b) It also speculates reasons for the results.
- (c) You need to identify what are the weaknesses or limitations identified by the author or something you found but was not mentioned.
- (d) You must analyse whether the author's way is the only way to interpret the predicted results (a good researcher would look into this aspect to justify his/her findings firmly).

**SELF-CHECK 3.3**

1. What are the major aspects you will look at when evaluating a journal article?
2. When you critique the Methodology and Results sections, what will you look for?

## SUMMARY

.....

- Literature review shows what has been done in the research field and how the intended study relates to earlier research.
- Literature review consists of research findings as well as propositions and opinions of researchers in the field.
- Literature review delimits the study, relates the methods used by other researchers, recommendations of earlier works and provides the basis for the intended research task.
- All journals and research articles reviewed should be critically evaluated.
- Literature review can reveal methods of dealing with the research problem that may be similar to the difficulties you are facing.
- Literature review will increase your confidence in your research topic if you find other researchers have an interest in this topic and have invested time, effort and resources studying it.

## KEY TERMS

.....

Abstracts of Articles

Research Journal

Body of Knowledge

Review of Literature

Citation indices

Theoretical Framework

Indices of Journals



## DISCUSSION

1. Select three journals in the research area you are interested in and identify the main contributions of those papers.
2. Locate full-text journals in ICT that are available for free on the Internet. Check to see if they are refereed journals. Share what you obtained with your coursemates.



## REFERENCES

### OUM's Digital Library

Budgen, D. & Brereton, P. (2006). Performing systematic literature reviews in software engineering. *Proceeding of the 28th International Conference on Software Engineering ICSE'06*. ACM Press. [available at ACM]

Schwarz, A., Mehta, M., Johnson, N. & Chin, W. W. (2007) Understanding freworks and reviews: a commentary to assist us in moving our field forward by analysing our past. *ACM SIGCSE Database*, Volume 38, Issue 3, ACM Press. [available at ACM]

### Books

Cooper, H. (1998). *Synthesizing research: A guide for literature reviews*. Thousand Oaks, California: Sage Publications.

Cooper, H. M. (1989). *Integrating research: A guide for literature reviews* (2nd ed.). Newbury Park, Calif: Sage Publications,.

Leedy P. D., & Ormrod J. E. (2001). *Practical research: Planning and design*. Merrill Prentice Hall.

### Internet Resources

Macauley P. (2007) The Literature Review [Electronic version]  
<http://www.deakin.edu.au/library/findout/research/litrev.php>

The University of Wisconsin-Madison Writing Center. (2001). *Writer's Handbook: Academic Writing: Reviews of Literature* [Electronic version]  
<http://www.wisc.edu/writing/Handbook/ReviewofLiterature.html>