

# LITERATURE REVIEW

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# Learning Outcomes

- By the end of this lecture you should be able to:
  - i. Define what is review of literature
  - ii. Identify the importance of a good literature review
  - iii. List the ideal procedures for review of literature
  - iv. Describe common weaknesses in review of literature
  - v. Critique a journal article

# 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:
  - i. Approaches
  - ii. Methods
  - iii. Variables used
  - iv. Statistical procedure

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## Note

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

- 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.
- Review of literature also reveals **techniques** and **statistical** procedures that have not been attempted by others.

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- 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.**

## Food for thought

Think of some obstacles graduate students are facing when doing literature review in Mathematics for their thesis or research report.

# Functions 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:
  - i. Provides theoretical background to your study or field of interest
  - ii. Helps justify how your findings are related to the body of knowledge in your field of research
  - iii. Establish the links between what you propose to examine and what has already been found. Helps you refine your research methodology

# Importance of Literature Review

## 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

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## 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.



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## 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.

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## 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.

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## 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

# Review of Literature Procedures

- Generally there are 4 steps in literature review:
  - i. Step 1: Search existing literature in your research area of interest
  - ii. Step 2: Review the literature obtained
  - iii. Step 3: Develop a theoretical framework
  - iv. Step 4: Writing up the literature Review

# 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.
- The sources can be:
  - i. Indices of Journals
  - ii. Abstract of articles
  - iii. Citation indices

# 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.

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- As you read further do some critical review with critical preference to:
  - i. Note the theories put forward, critics, methods used
  - ii. Note whether the knowledge relevant to your designed framework has been confirmed beyond doubt
  - iii. Find differences of opinions among researchers and jot down your opinions about their validity
  - iv. Examine the gaps that exist in the body of knowledge

# Writing 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 emphasis.
- 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.
- Most importantly, avoid plagiarism when writing. Give due recognition to the works of other researchers.



# Common Weaknesses

- 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.
- Students tend to cut and paste, which SHOULD NOT be encouraged. Original works should be cited and quoted.
- Journals or reports that are included are not critically evaluated. Critically evaluate the research questions, the methodology used and recommendations made by the researcher.

# 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 steps are describe in the preceding section.

# Step 1: Read and Understand the Abstract

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

# Step 2: Read and Understand the Introduction

- 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.
- Do some critique on the research questions whether it is applicable to the theme mentioned or not.

# Step 3: Read the Methodology Section

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

# Read the Results Section

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

# Read and Understand the Discussion Section

- This section describes main findings and relating it to the Introduction section.
- It also speculates reasons for the results.
- You need to identify what are the weaknesses or limitations identified by the author or something you found but was not mentioned.
- You must analyse whether the author's way is the only way to interpret the predicted results

# 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.



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- 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.

# Thank You