



Literature Review: An Introduction

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About the Presenter



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Presentation Outline

- 1 What is a Literature Review (LR)?
- 2 Why do we conduct LR?
- 3 Where do we conduct LR?
- 4 How do we conduct LR?
- 5 Benefits of LR?
- 6 Pitfalls to avoid
- 7 Final Checklist



Introduction

- Research involves identifying problem and providing a solution to that problem.
- You can develop a new solution, or improve an existing solution.
- Literature Review provides a great starting point in your research journey.
- A good review of literature gives you a proper direction in your research work.



What is a Literature Review (LR)?

- A literature review discusses published information in a particular subject area, and sometimes information in a particular subject area within a certain time period.
- A literature review can be just a simple summary of the sources, but it usually has an organizational pattern and combines both summary and synthesis.
- LR can contain both theoretical background and review of existing, related works in literature.



What is a Literature Review (LR)?

- The format of a review of literature may vary from discipline to discipline and from assignment to assignment.
- A review may be:
 - a self-contained unit
 - a preface to and rationale for engaging in primary research.



What is a Literature Review (LR)?

- The terms literature search, literature review and literature survey are used interchangeably.
- A review is a required part of :
 - Grant proposals
 - Research proposals
 - Papers (journals, conferences, books)
 - Theses and dissertations (often a chapter).

What is a Literature Review (LR)?

Good LR

Synthesis of available research

Critical evaluation

Breadth and Depth

Clear and Concise

Rigorous and consistent methods

Bad LR

Annotated bibliography

Description

Narrow and Shallow

Confusing and Longwinded

Arbitrary



Why do we conduct LR ?

- Generally, the purpose of a review is to analyse critically a segment of a published body of knowledge through summary, classification, and comparison of prior research studies.
- The purpose of a literature review is for you to take a critical look at the literature (facts and views) that already exists in the area you are researching.
- A literature review is not a shopping list of everything that exists, but a critical analysis and evaluation of the existing literature and a relationship between the different works.



Why do we conduct LR ?

- There is a possibility that the same or similar research idea had occurred to someone else who has already carried out experiments and published the results a long time ago.
- Unless LR is done, it is not possible to know whether the proposed research has already been done.
- No LR leads to duplication of the work others have already done. This is a waste of time, energy and resources.
- LR demonstrates the relevance of the research.



Why do we conduct LR ?

- Purposes of LR:
 - Distinguishing what has been done from what needs to be done;
 - Discovering important variables relevant to the topic;
 - Synthesizing and gaining a new perspective;
 - Identifying relationships between ideas and practice;
 - Establishing the context of the topic or problem;



Where do we conduct LR ?

Journal and
Conference
Papers

Books

Theses and
Dissertations

Grant and
Research
Proposals

Technical
and Progress
Reports

Curriculum
Development

Research
Projects

Businesses

Government



Before the Review

- Clarify
 - If your assignment is not very specific, seek clarification from your supervisor/lecturer:
 - Roughly how many sources should you include?
 - What types of sources (books, journal articles, websites)?
 - Should you summarize, evaluate, or critique your sources by discussing a common theme or issue?
 - Should you provide subheadings and other background information, such as definitions and/or a history?



Before the Review

- Find models
 - Look for other literature reviews in your area of interest or in the discipline and read them to get a sense of the types of themes you might want to look for in your own research or ways to organize your final review.
 - You can simply put the word "review" in your search engine along with your other topic terms to find articles of this type on the Internet or in an electronic database.
 - The bibliography or reference section of sources you've already read are also excellent entry points into your own research.



Before the Review

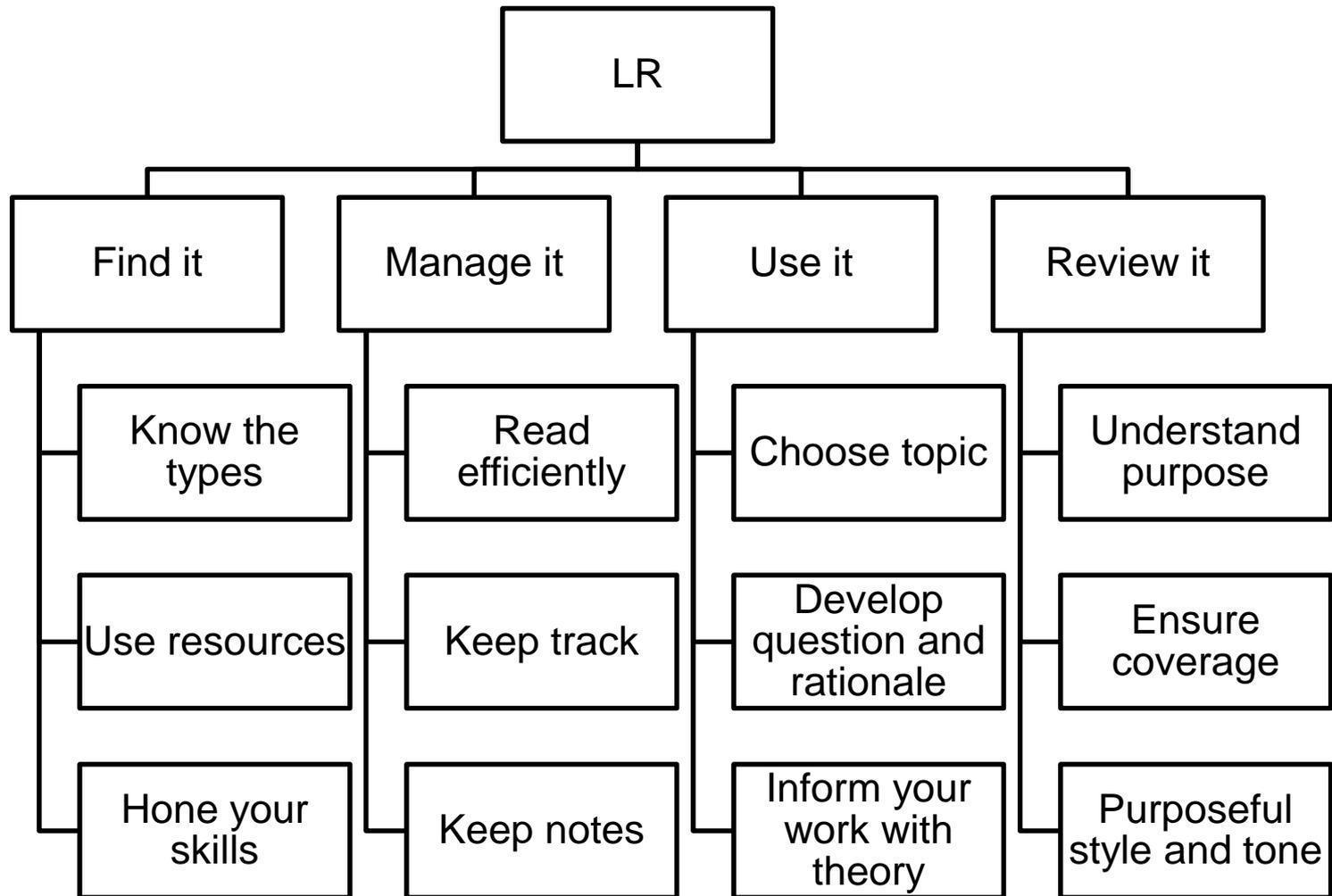
- Find a focus and narrow your topic
 - There are hundreds or even thousands of articles and books on most areas of study.
 - The narrower your topic, the easier it will be to limit the number of sources you need to read in order to get a good survey of the material.
 - Your instructor will probably not expect you to read everything that's out there on the topic, but you'll make your job easier if you first limit your scope.
 - A literature review is usually organized around ideas, not the sources themselves as an annotated bibliography would be organized.



Before the Review

- Consider whether your sources are current
 - Some disciplines require that you use information that is as current as possible.
 - In the sciences, for instance, treatments for medical problems are constantly changing according to the latest studies. Information even two years old could be obsolete.
 - In a review in the humanities, history, or social sciences, a survey of the history of the literature may be what is needed.
 - Browse through some other current bibliographies or literature reviews in the field to get a sense of what your discipline expects.

How do we conduct LR ?





How do we conduct LR?

- The whole process of reviewing includes:
 - Searching for literature
 - Sorting and prioritising literature
 - Analytical reading of papers
 - Evaluative reading of papers
 - Comparison across studies
 - Organisation of content
 - Writing the Review



How do we conduct LR?

Searching for Literature

- Use sources that can be authenticated
- Common sources include:
 - Journal articles
 - Books and book chapters
 - Conferences & Conference proceedings
 - Electronic sources
 - CD-ROM/DVD
 - Journal article on the Internet
 - Book/Monograph on the Internet
 - Website



How do we conduct LR?

Sorting and Prioritising

- Organise according to:
 - Chronology
 - By publication
 - By trend
 - Theme
 - Methodology
 - Questions for Further Research
- Reference Manager (Mendeley, EndNote)



How do we conduct LR?

Analytical Reading

- Familiarise yourself with theoretical & practical issues.
- Find orientation & up to date information with what is current in the field.
- Obtain background and clarify the relationship between your topic and previous work.
- Identify reasons why your topic is important enough to be researched.



How do we conduct LR?

Evaluative Reading

- Identify research findings, facts & statistics.
- Understand theory and interpretation.
- Familiarise yourself with methods and procedures implemented.
- Highlight opinions and point of view.



How do we conduct LR?

Comparison across studies

- The aim is to extract key points by comparing and contrasting across studies, instead of reading one paper after another.
- Key points for a review may concern areas of similarities and/or differences in:
 - Research aim(s) or hypotheses
 - Research design and sampling
 - Instruments and procedures used
 - How data were analysed
 - Results or findings
 - Interpretations



How do we conduct LR?

Organisation of Content

- Just like most academic papers, literature reviews also must contain at least three basic elements: an introduction or background information section; the body of the review containing the discussion of sources; and, finally, a conclusion and/or recommendations section to end the paper.
- Consider organisation at both Local and Global levels.



How do we conduct LR?

Organisation of Content

- **The introduction** should provide the reader with the scale and structure of your review. It serves as a map.
- **The body** of the review depends on how you have organised your key points. Literature reviews should be evaluative and not merely descriptive. For example possible reasons for similarities or differences between studies are considered rather than a mere identification of them.
- **The conclusion** of the review needs to sum up the main findings of your research into the literature. The findings can be related to the aims of the study you are proposing to do.



How do we conduct LR?

Local Organisation of Content

In [32], an asphalt pavement potholes and cracks detection system was developed using multispectral imagery on unmanned aerial vehicles. The technique presented spatial and spectral features of road anomalies and machine learning algorithms such as support vector machines, neural networks and random forest were used for classification between normal pavements and pavements with damages. **The results showed a 98.3% accuracy in classification.** However, spatial resolution limitations of the UAV pavement images was a major limitation, and this led to the system's inability to capture cracks less than 13.54 mm in width.



Introduction



Methodology



Results and findings



Conclusion and analysis



How do we conduct LR?

Global Organisation of Content

- Literature reviews should comprise the following elements:
 - An overview of the subject, issue or theory under consideration, along with the objectives of the literature review.
 - Division of works under review into categories.
 - Conclusions including general observations, open areas for research, and conclusive comparative statements.



How do we conduct LR?

Writing the Review

- What you should write:
 - the accepted facts in the area
 - the popular opinion
 - the main variables
 - the relationship between concepts and variables
 - shortcomings in the existing findings
 - limitations in the methods used in the existing findings
 - the relevance of your research
 - suggestions for further research in the area



Benefits of LR

- **Literature search will reveal :**
 - The aspects/topics researched and not researched - Choose to study the not-yet-researched aspect/topic so that your work is original.
 - The pitfalls/weaknesses in other studies - Rectify them in your study.
 - The difficulties faced by the other workers - Be prepared and avoid them.
 - A better or modified procedure/method of experimentation - Do not hesitate to use it.



Benefits of LR

- **Literature search will reveal :**
 - The details of use of modern equipment and/or software - Procure and use it, if possible.
 - The details of dose of drugs, animal model, number of subjects and statistical methods of data analysis - Make use of the details to design your study.
 - The data of primary and secondary variables - You might need them to calculate the sample size for the current study.



Pitfalls to avoid

- Vagueness
- Inappropriate generalisations
- Limited range
- Insufficient information
- Irrelevant material
- Omission of contrasting view
- Lack of recent work



Final Checklist

- Have I fulfilled the purpose of the literature review?
- Is it written at a level appropriate to its audience?
- Are its facts correct?
- Is all the information included relevant?
- Are the layout and presentation easy on the eye?
- Is the language clear, concise and academic?
- Does the abstract summarise the entire review?
- Does the introduction adequately introduce the topic?



Final Checklist

- Is the body organised logically?
- Does the conclusion interpret, analyse and evaluate?
- Are the recommendations reasonable?
- Does the table of contents correspond with the actual contents? Are page numbers correct?
- Have I acknowledged all sources of information through correct referencing?
- Have I checked spelling, grammar and punctuation?
- Have I carefully proof-read the final draft?

**Thank
you**

