



Systematic Literature Review

How to establish a foundation for your research and write your first paper

Points Covered



What is a literature review and why is it so important?



Methodology of Systematic LR.



How to draft your search keywords and research questions?



How to conduct a spiral review to reach your point of research?



How to prepare your knowledge base and paper repository for your research?



Quick demo on tools,

Google Scholar

Jabref

Microsoft Excel

Referencing and citation in Microsoft Word



What is a literature review and why is it so important?

- A discussion of your knowledge about the topic under study
- A discussion of your knowledge that is supported by the research literature
- A foundation for the study – where you should start your study

The literature is “the works you consulted in order to understand and investigate your research question.”



What is a Literature Review?

- The selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfill certain aims or express certain views on the nature of topic.
- Exploring how the research in a specific area of interest is to be investigated
- The effective evaluation of the documents in relation to the research being proposed.



What Literature Review Looks Like?

- NOT a summary of articles
- Conceptually organized synthesis of the results of your search
- MUST
 - Organize information and relate it to the research question
 - Synthesize results into what is and isn't known
 - Identify controversy when it appears in the literature
 - Develop questions for further research



What Literature Review Is NOT?

- **A study-by-study, or article-by-article, description of studies previously done**
- **A re-statement of the studies previously done**
- **A brief overview of articles**



Why Literature Review?

- to identify **gaps** in the literature
- to **avoid reinventing the wheel** (at the very least this will save time and it can stop you from making the same mistakes as others)
- to **carry on** from where others have already reached (reviewing the field allows you to build on the platform of existing knowledge and ideas)
- to identify other **people** working in the same fields (a researcher network is a valuable resource)



Why Literature Review?

- to increase your **breadth of knowledge** of your subject area
- to provide the **intellectual context** for your own work, enabling you to position your project relative to other work
- to identify **opposing views**
- to put your work into **perspective**
- to demonstrate that you can access **previous work** in an area
- to identify information and ideas that may be **relevant to your project**
- to identify **methods** that could be relevant to your project

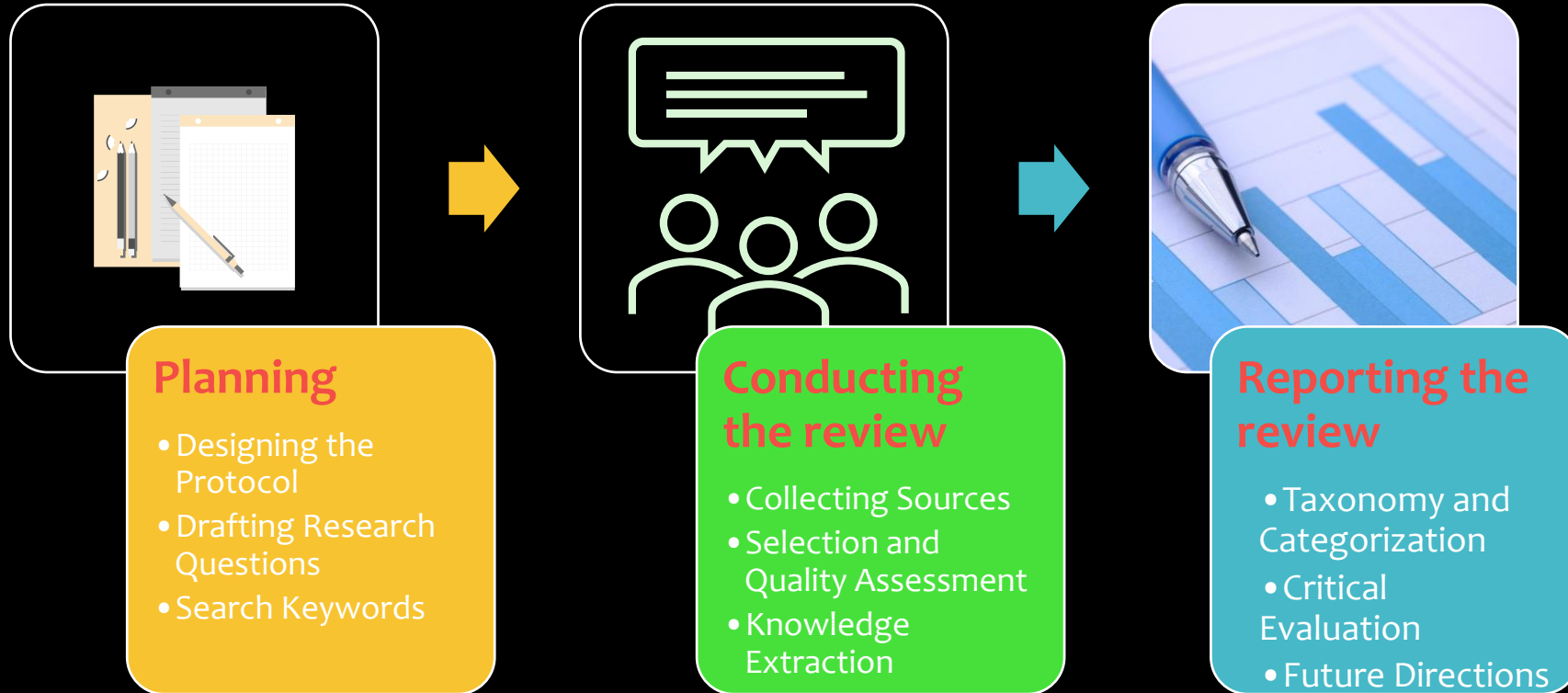


Systematic Literature Review

- A **Systematic Literature Review** is a means of identifying, evaluating and interpreting all available research relevant to a particular research question, or topic area, or phenomenon of interest.
- Individual studies contributing to a systematic review are called primary studies; a systematic review is a form a secondary study.
- An SLR is a methodologically rigorous review of research results.
- The aim of an SLR is not just to aggregate all existing evidence on a research question;
- It is also intended to support the development of evidence-based guidelines for practitioners and Researchers.



Methodology and Phases of an SLR.



? Search key-words and research questions?

- RQ1: What is “Your Topic or Field” and its related topics?
- RQ2: What is the classification of “Your Topic or Field” techniques and methodologies?
- RQ3: How to create a methodology or solution in “Your Topic or Field”?
- RQ4: What is the performance metrics that evaluate solutions and proposals in “Your Topic or Field”?

? Search key-words and research questions?

- Transfer Questions into Search Key-words, start with General Trendy Words!!
- Use advanced search and synthesize a search query
- Think about prompt engineering for GPTs



Selection and Quality Assessment

- Relevance to Topic
- Publisher and Source
- Authors
- Citation
- Critically Analyzing the Literature



Critically Analyzing the Literature

- **Abstract**
 - the author's description of the study
 - related to your area of interest?
 - conclusions relevant?
- **Statement of the Problem**
 - restate the topic
 - problem stated clearly?
 - purpose?
 - significance?
- **Hypothesis or Research Question(s)**
 - Clearly stated?
 - Relevant?
 - Related to your area of interest?
- **Assumptions**
 - Explicit assumptions?
 - Implicit assumptions
 - Similar to yours?



Critically Analyzing the Literature

- **Delimitations**
 - How was the study narrowed?
 - Which considerations are relevant to your study?
- **Definitions**
 - Key concepts & terms?
- **Method**
 - research design?
 - population & sample?
 - measurement?
 - procedures?
- **Findings**
 - make sense?
 - what do they say about your area of interest?



Critically Analyzing the Literature

- Discussion
 - Presented clearly?
 - Meaningful interpretations?
 - Implications discussed?
 - Suggestions or recommendations?
 - Limits to practical application?
- Conclusion
 - What did you learn?
 - Re-state your new knowledge



Knowledge Extraction

Critical Evaluation

- What do you already know about the subject? Major works?
- Is there a gap in the knowledge of a particular subject?
- Has the author formulated any problem statements/issues?
- What is the orientation of the research?
- What is the theoretical framework of the author?
- Are there further researches by other researchers?
- Who are the main players in the research communities?



Knowledge Extraction

Critical Evaluation

- Is the analysis accurate and relevant?
- What is the strength and weakness of the research?
- How is the article (conf proceeding / journal) related to your research question(s)?
- What is the methodology /methods/ issues/ problems that past researchers identified?
- How do past research can give an impact to your own work?



Knowledge Extraction

- Field of Study
- Keywords in the paper
- Problem and/or application
- Methodology and/or framework
- Most Important Points
- Results and/or Solution
- Challenges
- Future Study



How to conduct a spiral review to reach your point of research?



1. Selection of Specific Field or Points and Highlighting the papers
2. Repeating the Process:
 1. New Keywords
 2. Citations: Updates and focus



knowledge base and paper repository

- Use the tools to download full text,
- Index and identify your papers



Writing your Review Articles

- Introduction and Problem Definition
- Concepts, Issues and Challenges
- Document your SLR
- Taxonomy and Categorization
- Critical Evaluation
- Pave the way for your own research
- Future Directions



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Questions and Comments

