Lecture 1

Literature Review

Undergraduate Course

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Definition

- A literature review is a comprehensive summary and evaluation of existing research and scholarly works on a specific topic. It involves identifying, analysing, and synthesising relevant sources to provide an overview of what is known, highlight gaps in knowledge, and establish a foundation for further research or discussion (Boote & Beile, 2005).

What is it?

- A critical summary of relevant literature relating to your chosen research topic(s).
- A ‘process’ – an ongoing part of your research (Sourcing, reading, organising, analysing).
- A ‘product’ – a specific part of the dissertation To provide background information and justification for your study.

It is not…

- A summary of everything you have read on your topic
- A chronological account of how research has developed in your field

Why do we need it?

"The works of **W**, **X**, and **Y** have explored sufficiently about my question; the investigations of **Z** have added this much to our knowledge. I propose to go beyond **Z**'s contribution in the following way". Thus, it contributes to:

- demonstrating awareness of key issues and debates relating to your topic.
- critically understanding relevant prior research
- demonstrating how your research fits within and builds upon previous studies
- identifying gaps
- developing your research questions, hypotheses and methodology
- comparing your findings with previous research findings

Quantitative Vs Qualitative studies

- **In quantitative research**, the literature review is typically seen as a foundational step to establish a clear, objective basis for the study. It's viewed as a systematic way to identify what is already known, justify the research question, and position the study within a measurable, hypothesis-driven framework. It's goal is to fill empirical gaps and test hypotheses in a structured deductive way.
- **In qualitative research**, the literature review is often seen as a dynamic, interpretive process that situates the study within a broader context of meanings, experiences, or theories. It's less about filling a "gap" in data and more about understanding the landscape of perspectives or exploring under-researched phenomena. It's goal is to explore meanings and build theory in a reflective, inductive or thematic way.

Criticality

- Be critical on how you read: what are you looking for - ask yourself key questions:
  - How does this study build on other research?: Evaluate how each study builds on previous research, and discuss your assessment of its contribution.
  - How was the research conducted?: Evaluate the appropriateness of research design and methodology, sample selection and size, data collection and analysis methods, limitations …etc
- Criticism involves analysis of positive as well as negative features. It means acknowledging the strengths and the weaknesses of research that others have undertaken and being able to articulate why and how you think their ideas or theories might be improved.
- Authorial voice: Critically engage with texts, forming opinions on methods, findings, and implications. Present your own synthesis and analysis of the literature, reflecting your unique perspective and arguments. It's about making your voice heard, not just summarizing what others have said, but adding your own insights and evaluations.

What could you read?

- Academic journals (peer-reviewed)
- Professional journals
- Dissertations/ theses
- Literature/systematic reviews
- Government publications
- Books
- Reports from educational research organisations (e.g. BERA)

Evaluating Internet Sources

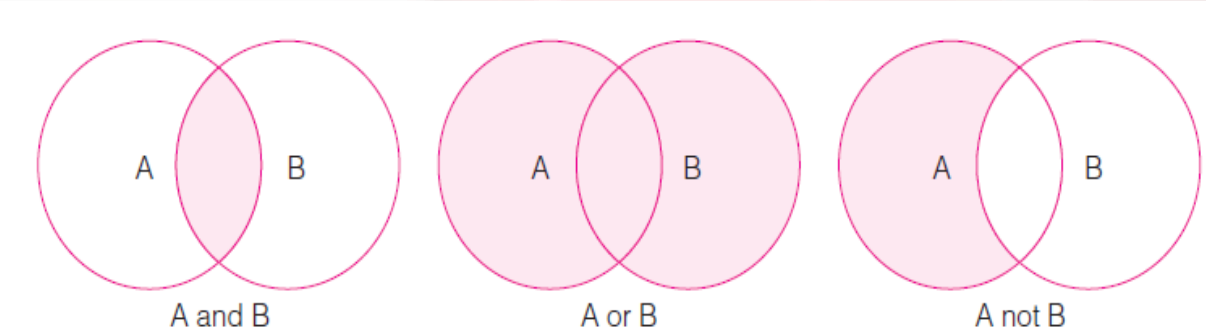
- “Generally speaking, fee-based products provided via a college or university have greater authority, accuracy, and credibility than the free sites located via a search engine such as Google” (Ary, 2014, p.84)
- Research Authority refers to its author. Who is he? Is he known in the field? Did he publish in peer-reviewed journals? …etc. If the answer is yes to these questions, this would provide authority to that research.
- Look for citations, data, or links to primary sources. Cross-check claims against reputable literature or databases (e.g., Google Scholar, X posts with links). Unsupported claims or broken links suggest poor quality.
- Shallow articles (e.g., short blog posts) may lack the depth of peer-reviewed studies. Assess if it contributes meaningful insights or merely repeats common knowledge. A source with no new perspective might not advance your argument.
- Outdated data (e.g., pre-2020 stats in a fast-moving field like AI) may not reflect current knowledge. Check publication dates or revision history. Older sources might be foundational but insufficient alone

Locating related literature

Indexing and abstracting databases

- Database companies compile scholarly publications within a particular field. Each article's key terms in the journal are determined and indexed.
- Because you may enter your key terms of interest and the database will find relevant journal articles by journal, date, volume number, and page number. Databases that include many indexing and abstracting products are particularly helpful.

Boolean Logic



Shaded Areas Represent What Is Retrieved by Each Logical Statement

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Examples of Boolean Logic (A and B)

Scenario: A teacher is researching teaching strategies for a professional development workshop and wants to find resources about active learning that also focus on STEM subjects.

A: Resources about active learning.

B: Resources about STEM (Science, Technology, Engineering, Math) education

A and B: The teacher searches an educational database for "active learning AND STEM," retrieving only materials that discuss active learning techniques (e.g., hands-on experiments) specifically applied to STEM subjects (e.g., physics labs or coding projects).

Application: This narrows the search to highly relevant, specific content, ensuring the teacher focuses on strategies that meet both criteria for their workshop. This aligns with criticality by requiring the teacher to evaluate whether these resources are rigorous, credible, and directly applicable.

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Examples of Boolean Logic (A or B)

Scenario: A teacher is researching teaching strategies for a professional development workshop and wants to find resources about active learning or STEM subjects (or both).

A: Resources about active learning.

B: Resources about STEM (Science, Technology, Engineering, Math) education

A or B: The teacher searches an educational database for "active learning OR STEM," retrieving all materials that discuss active learning (e.g., hands-on experiments in any subject, like history or literature), all materials about STEM education (e.g., lecture-based STEM courses or theoretical STEM research), and any materials that cover both (e.g., active learning in physics labs).

Application: This broadens the teacher's research, ensuring they capture a wide range of strategies and subjects, which is useful for a comprehensive workshop but requires critical evaluation to filter out irrelevant or lower-quality sources.

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Examples of Boolean Logic (A not B)

Scenario: A teacher is researching teaching strategies for a professional development workshop and wants to find resources about active learning but exclude those focused on STEM subjects, as they're focusing on active learning in other disciplines (e.g., humanities or arts).

A: Resources about active learning.

B: Resources about STEM (Science, Technology, Engineering, Math) education

A not B: The teacher searches an educational database for "active learning NOT STEM," retrieving only materials that discuss active learning techniques (e.g., group discussions, role-playing) applied to non-STEM subjects (e.g., history, literature, or art), excluding any resources that mention STEM (e.g., physics labs or coding projects).

Application: This refines the search to focus on the teacher's specific interest, avoiding irrelevant STEM-focused content. This aligns with criticality by requiring the teacher to evaluate whether these non-STEM active learning strategies are still applicable or credible for their workshop.

DATABASE SELECTION:
CITATION INDEXES

Scopus

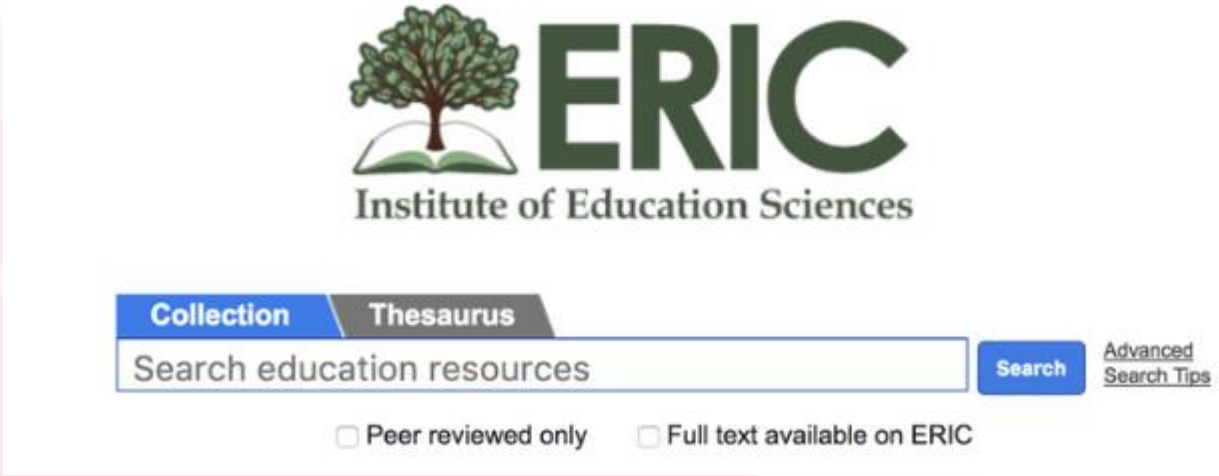
ProQuest

Web of Science

IEEE Xplore® Digital Library

ERIC
Institute of Education Sciences

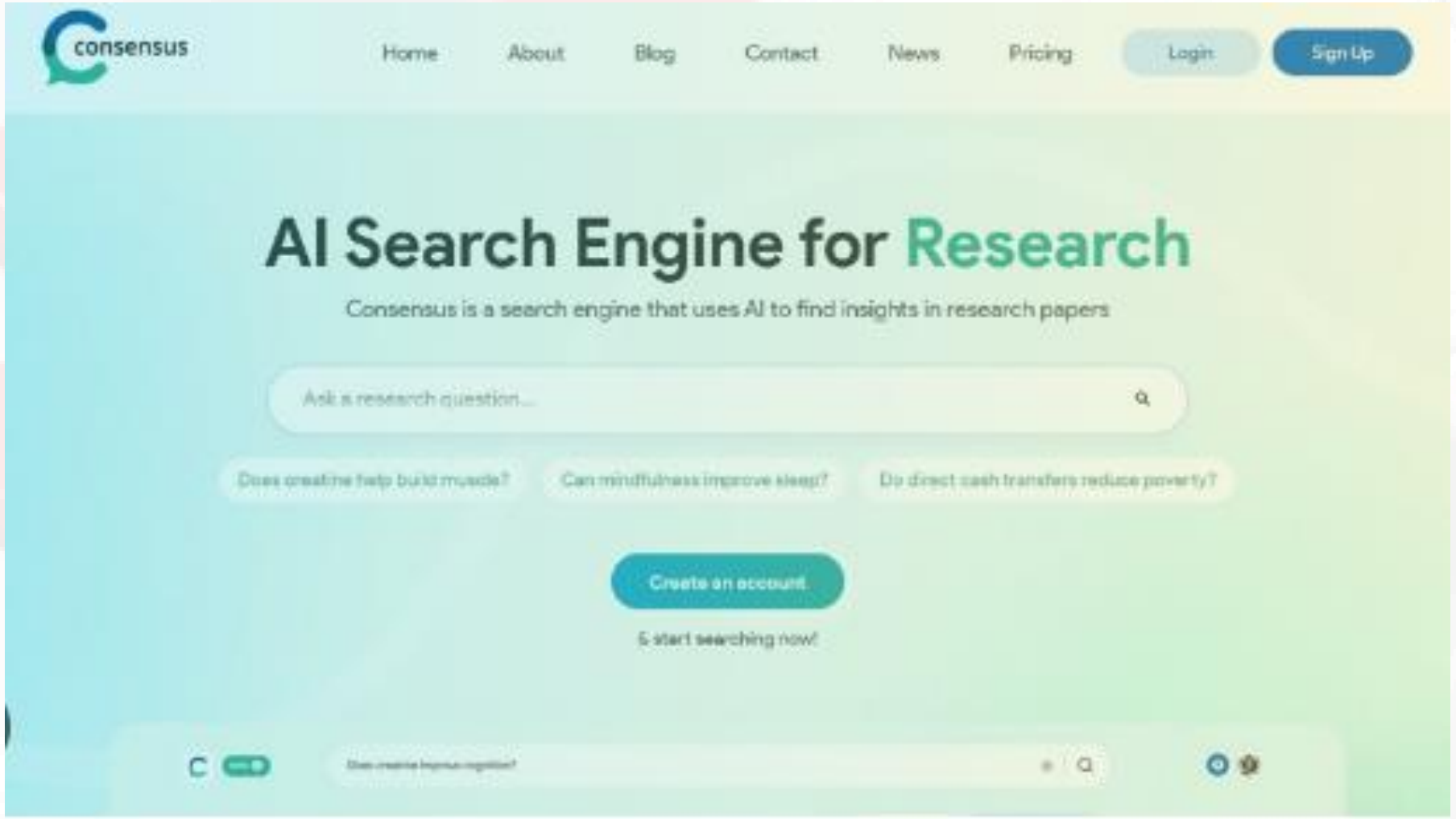
Educational Resources Information Center



This is a more education-related database and the largest education database in the world. It indexes more than 1000 journals and more than 1 million other documents.

- It includes useful primary sources that were never published.
- It can be accessed for free at www.eric.ed.gov.

Locating Literature using AI



https://consensus.app/search/

Organising the Related Literature

- Identify keywords or variables to guide your review (conceptual framework)
- State a central research question
- Create a preliminary working title
- Start with the most current research, and work backward
- Skim the source
- Read the abstract or summary sections of a report
- For every book or article, you read, write a brief summary in your own words that illustrates the essential points.
- Keep a record of each book or document you consult (e.g., endnote)

What needs to be included in a literature review

Your literature review should focus on:

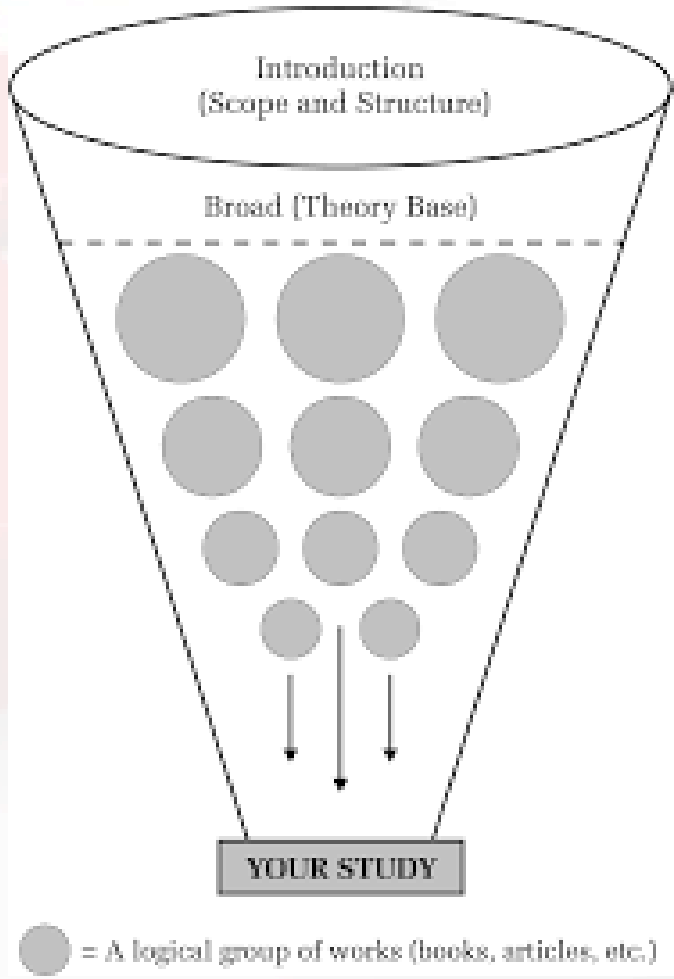
- the key issues which underlie your research project
- the major findings on your research topic, by whom, and when
- the main points of view and controversies that surround the issue you are investigating
- a critical evaluation of these views, indicating strengths and weaknesses of previous studies on the topic
- general conclusions about the state of the art at the time of writing, including what research still needs to be done, that is, the gap that remains that your study will aim to fill.

Organizational framework

- **Chronological:** Discuss your sources in order of their appearance. This approach is useful for historical research or other studies where time is a crucial factor.

- **Thematic:** Discuss your sources in the form of themes, topics, important concepts, or major issues.

- **General to Specific -the "V" or "funnel" approach**: Discuss general material to provide a comprehensive picture. Then, discuss the material most closely related to your study.



Structuring a literature chapter (Writing)

- **Introduction:** a short opening paragraph clearly stating the focus and structure of your Literature Review chapter.
- **Concepts:** use headings and sub-headings and funnel the discussion
  - define each concept and demonstrate your critical thinking
  - what do scholars say about each concept
  - what are the ongoing debates and opposing views
  - how do they ‘measure’ these concepts
  - critique definitions and studies
  - which definition will you use and why
- **Summary & research questions**
  - highlight research gaps and how your research will address these
  - list your research questions clearly

Example: Structuring

Title:

An investigation exploring achievement in reading by social class of Year 2 boys and girls.

Questions:

- Is there a relationship between achievement in reading and social class?
- Is there a difference in achievement in reading between Year 2 boys and girls?

Example: Structuring …. continued

- Introduction
- Definitions of social class
- Overview of social class and educational outcomes
- Social class and achievement in reading
- Gender disparities in academic achievement
- Achievement in reading and boys and girls
- Summary

Advice on Writing a Literature Review

1. Be thorough: provide a strong background to your research
2. Critique Rather Than Just Report the Literature

    a. Comparing and contrasting different research discussing the controversial aspects helps to identify the main gaps that need to be investigated

    b. The strengths and drawbacks of other research that have tackled the problem

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- **Assessing credibility:** look at the reputation of the authors, the publication venue, and whether the research was peer-reviewed.
- **Examining methodology:** evaluate the research design, sampling methods, and data collection tools.
- **Analysing data and results:** consider whether the data supports the conclusions, if statistical analyses were appropriate, and whether alternative interpretations are possible.
- **Checking for relevance:** consider how the findings relate to your own research topic or question, and whether they add value to your understanding or contribute to the field.
- **Considering limitations:** recognise any limitations or weaknesses in the study, such as sample size, lack of generalizability, or potential confounding variables.
- Avoid Excessive Use of Quotations
- Be Selective
- Be Careful Not to Plagiarize
- Use Primary Sources (original): they give you information straight from the horse’s mouth. On the contrary, secondary sources provide non-original or second-hand information.