

# Conducting an E Literature Review

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# About me

Data Science & Research  
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Dr. Aj



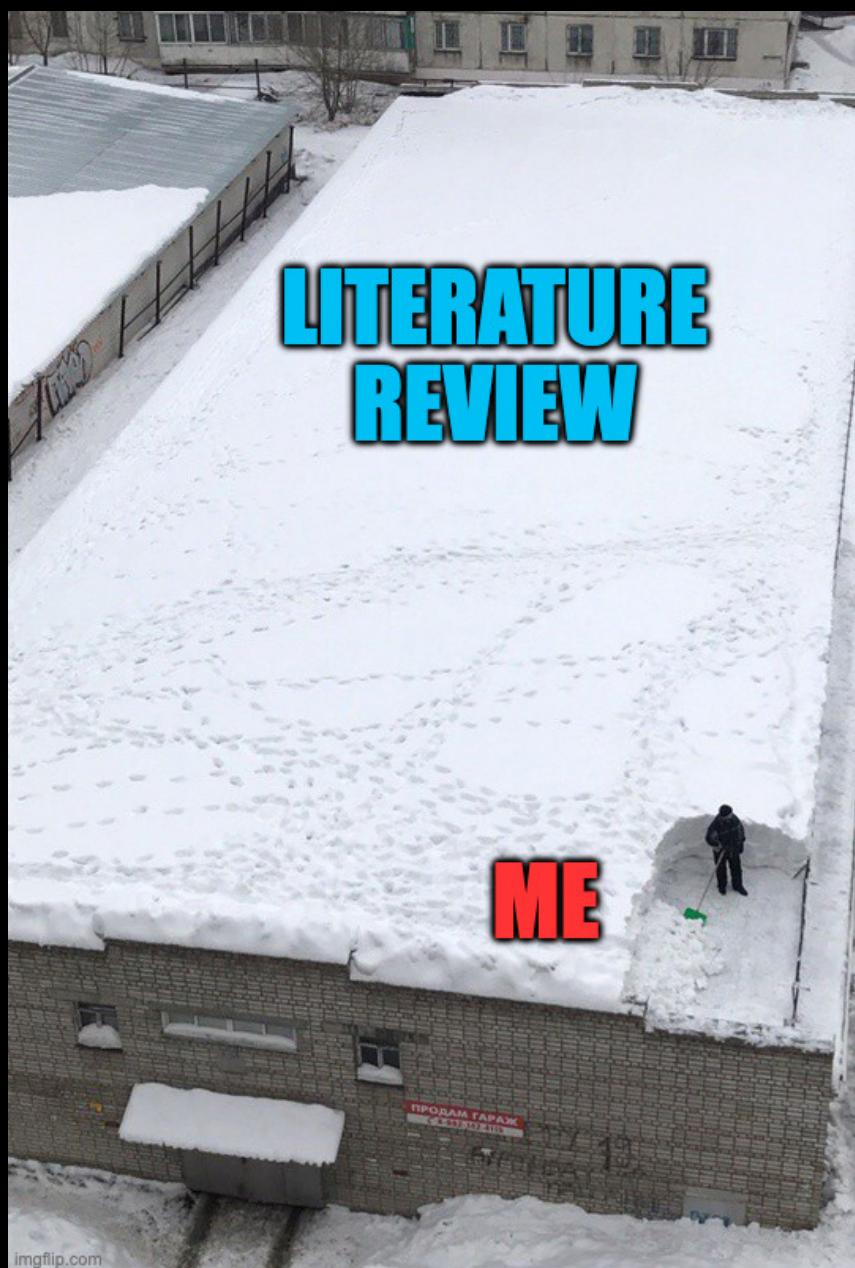
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# Quick Logistics:

1. Please keep yourself muted unless speaking
2. Use chat for questions - I will monitor throughout
3. We have slide numbers
4. All **slides** will be shared after the session

# LITERATURE REVIEW

ME



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- **Introduction & Foundations**
- **Research Questions & Scope**
- **Reading & Analysis Strategies**
- **Synthesis & Argumentation**
- **Writing & Structure**
- **Wrap-up**

# What is a Literature Review

## ✗ What it is not:

- An annotated bibliography.
- A list of summaries : “Author A said X, Author B said Y”
- A comprehensive catalog of everything ever written about a topic.
- Book reports strung together.

# What is a Literature Review

## What it is:

- **Critical** analysis of existing research.
- **Synthesis** that creates new understanding
- An **argument** about the state of knowledge
- A foundation that **justifies** YOUR research

# The Formula

Effective Literature Review = Critical  
Synthesis  
Argument

# Example Comparison



**Summary approach:** Smith (2020) found that was effective. Jones (2021) also studied only found it helped students. Kumar (2022) researched education and discovered benefits.

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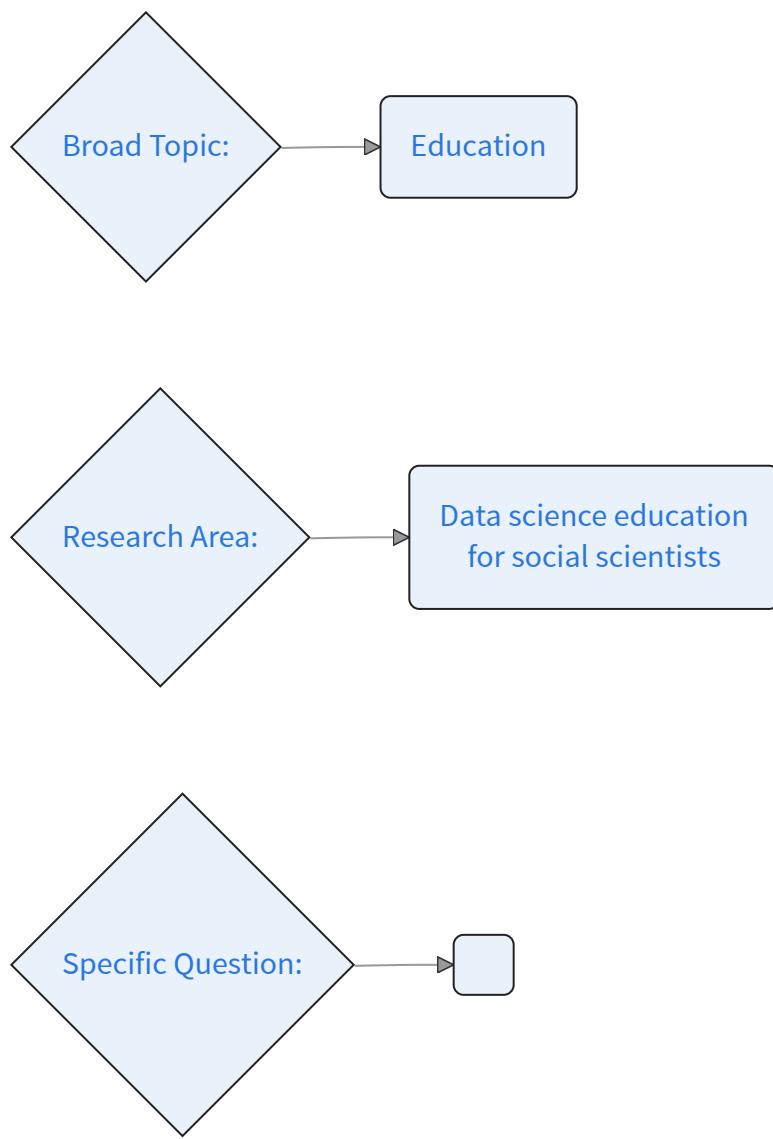
# The Foundation - Research

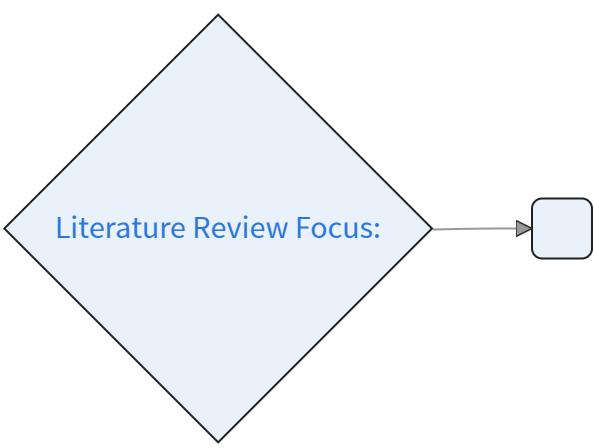
Broad Topic

↓  
Research Area

↓  
Specific Question

↓  
Literature Review Scanning





# Good Research Questions

- **Specific:** Not “Is online learning good?” but “Does online instruction improve statistical reasoning in undergraduate psychology students?”.
- **Answerable:** Can be addressed through research.
- **Significant:** Matters to your field.
- **Novel:** Addresses a gap or extends existing knowledge.

# Questions to Ask Yourself

1. What **EXACTLY** am I trying to find out?
2. What do I **NEED** to know to answer this?
3. What are the **KEY CONCEPTS** in my quest?
4. What **DISCIPLINES** might have relevant info?
5. What's my **TIME FRAME** of interest?

# Common Inclusion/Exclusion

## 1. Time Period

- Last 5 years? 10 years? 20 years?
- Include seminal older works?

## 2. Publication Type

- Peer-reviewed journals only?
- Include books, dissertations, conference papers?
- Grey literature (reports, working papers)?

## 3. Geography/Context

- Specific countries or regions?
- Global scope?
- Cultural context matters? [sara-institute.github.io/gju-literature-review/](https://sara-institute.github.io/gju-literature-review/)



# Pro Tip: Document your critiquing methods

- Keep a methods log.
- You'll need to justify them later.
- Helps you stay consistent.
- Makes your review reproducible.

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# Strategic Reading

Not all papers deserve equal time.

Strategic reading means knowing WHEN to read **carefully**, and when to study **deeply**.

# Pass 1: SKIM (5-10 minutes)

- **Read:** Title, Abstract, Introduction (first few paragraphs), Conclusion
- **Scan:** Section headings, figures, tables
- **Decision:** Is this relevant to my question?
- **Outcome:** Sort into “Highly Relevant,” “Most Relevant,” “Not Relevant”

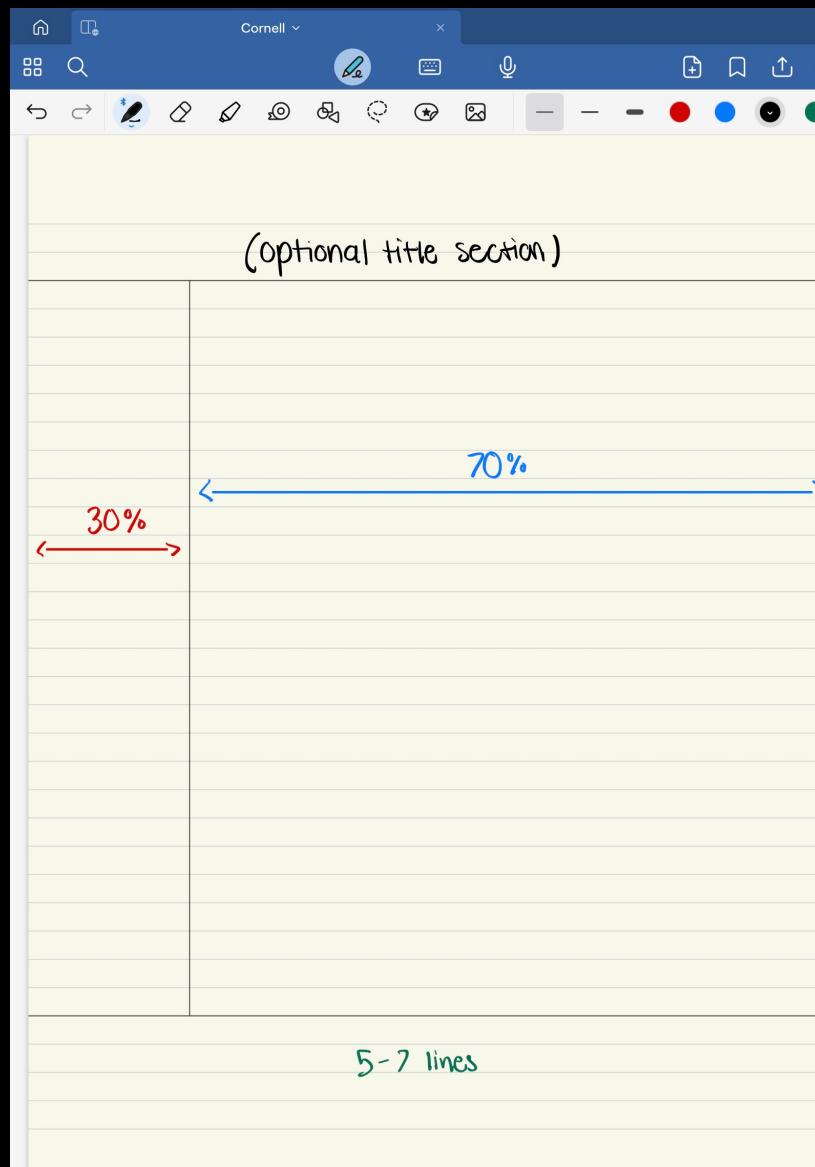
## **Pass 2: ACTIVE READING (20-30 min)**

- **Do this for:** “Highly Relevant” papers
- **Read:** Full paper but strategically
  - Introduction: What’s the question and
  - Methods: How did they study it? Approach?
  - Results: What did they find? (Read carefully)
  - Discussion: What do THEY think it means?
- **Action:** Highlight key points, take structured notes
- **Ask:** What’s the main contribution? How does it relate to MY question?

# **Pass 3: DEEP READING (1-2 hours)**

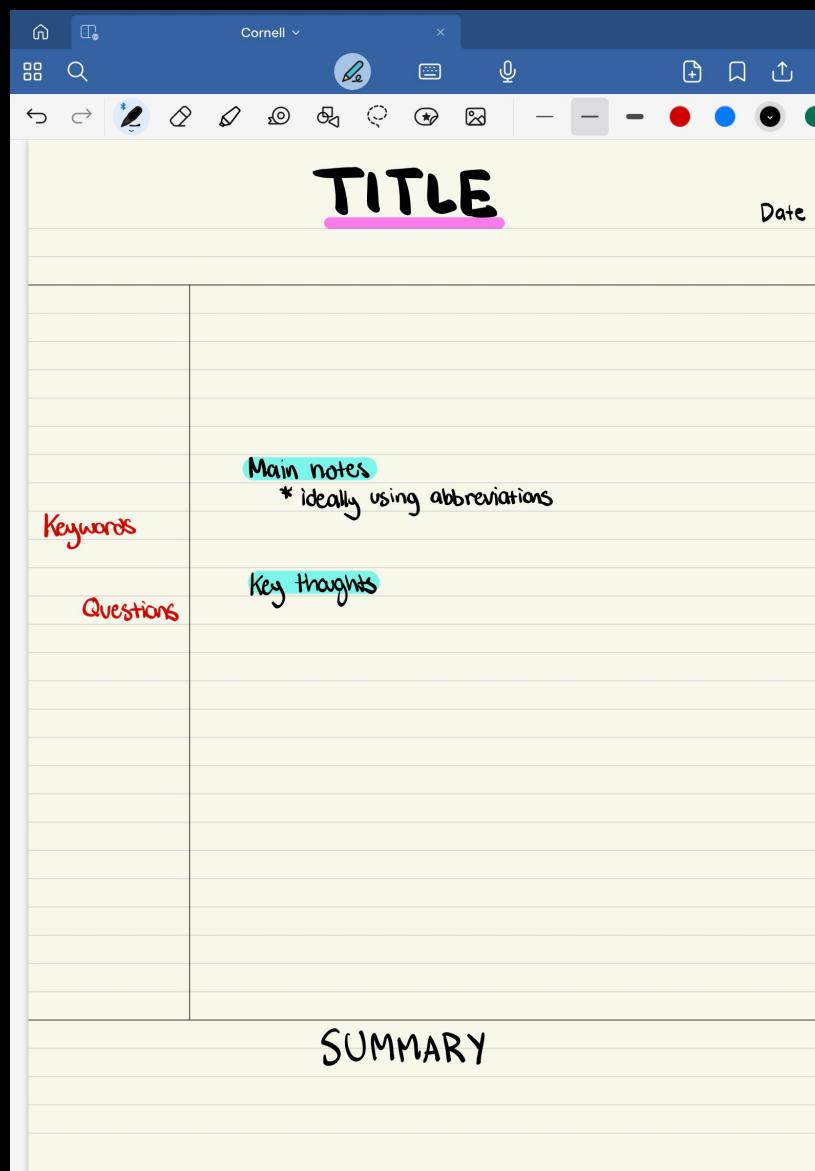
- **Do this for:** 5-10 most critical papers
- **Read:** Every word, every citation, every diagram
- **Action:**
  - Detailed notes on methodology
  - Critique strengths and limitations
  - Follow up on key citations
  - Connect to theoretical frameworks
- **Ask:** Can I reproduce their logic? What are their assumptions?

# The Cornell Note-Taking S





# The Cornell Note-Taking S





# Key Principles

## 1. Consistency

- Use the same format for every paper
- Makes it easier to compare and synthesize

## 2. Distinguish

- Author's words (mark as quotes with p)
- Your paraphrase (cite but no quotes)
- Your own analysis/thoughts (clearly marked)
- This prevents accidental plagiarism

## 3. Action-Oriented

- Always note: “How does this relate to my research?”
- Tag by themes you’re seeing emerge

# Pro Tips DO:

- Take **notes immediately** after reading (w)
- Always **include page numbers** for quotes
- **Tag/categorize** by emerging themes
- Note your **gut reactions** and questions

# Pro Tips ~~X~~DON'T:

- Just highlight in the PDF (you'll never look)
- Rely on memory (you'll forget)
- Copy large chunks without paraphrasing
- Wait until you've read 20 papers to start writing (overwhelming)

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# Summary vs. Synthesis

This is where most literature reviews fail.



# Summary (What people of

Smith (2020) studied online learning and found it was effective for engineering students.

Jones (2021) examined remote education and discovered that students appreciated flexibility.

Kumar (2022) investigated virtual classrooms and showed improved access for rural students.

## What's wrong?

- Each paper tr...
- No connectio...
- No pattern re...
- No critical ev...
- No argument...
- 😞 Boring to r...

# Synthesis (What you should know)

Research consistently demonstrates benefits of online learning, though these vary by context and outcome measure. Effectiveness studies show positive learning outcomes in STEM fields (Smith, 2020; Lee, 2021), while access studies highlight particular benefits for geographically isolated students (Kumar, 2022; Wang, 2023). However, most existing research focuses on undergraduate populations in North American contexts, leaving gaps in our understanding of graduate-level online learning in the Global South (Jones, 2021).

## What makes this synthesis useful?

- Groups studies (access vs. access)
- Identifies patterns (focus)
- Notes contradictions
- Identifies gaps
- Builds toward research)

# Synthesis Verbs

Showing agreement/patterns:

- “Studies consistently find...”
- “Converging evidence suggests...”
- “Across multiple contexts...”
- “Supporting this view...”

# Synthesis Verbs

Showing contradiction/debate:

- “While some studies show X, others demonstrate Y”
- “Contradicting these findings...”
- “This debate centers on...”
- “Results remain mixed regarding...”

# Synthesis Verbs

Showing progression:

- “Early research focused on X, but recent studies have shifted towards Y.”
- “Building on this work...”
- “Extending these findings...”
- “Contemporary research has shifted towards Z.”

# Synthesis Verbs

Showing gaps:

- “Despite extensive research on X, Y remain underexplored...”
- “Little attention has been paid to...”
- “What remains unclear is...”
- “Missing from this literature is...”

# Themes are:

- Similar findings across multiple studies
- Recurring debates or disagreements
- Different theoretical perspectives
- Methodological approaches
- Contextual patterns
- Conceptual frameworks used

# Common Organization Strategies

**THEMATIC:** (most common) Organize by theme

*What pedagogical approaches are most effective for teaching English language to graduate students in social sciences?*

- Theme 1: Effectiveness factors
- Theme 2: Design considerations
- Theme 3: Equity issues
- Gaps and future directions

# Common Organization Str

CHRONOLOGICAL: Organize by time period

- Early research (1990-2005)
- Emergence (2005-2015)
- Contemporary (2015-present)
- Gaps and trends

# Common Organization Strategies

METHODOLOGICAL: Organize by research methods

- Quantitative studies
- Qualitative studies
- Mixed methods
- Methodological gaps

# Common Organization Str

THEORETICAL: Organize by frameworks

- Behavioral theories
- Constructivist perspectives
- Sociocultural approaches
- Integrated framework

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# Literature Review Structure

- **Introduction** (10-15%) What it does:
  - Sets the context
  - States your research question
  - Explains scope and boundaries
  - Previews organization
  - Hooks the reader
- **Body** (70-80%) What it does:
  - Organized by your chosen structure (us)
  - Each section builds your argument
  - Shows what's known, what's debated,
  - Connects ideas across studies

# Academic Voice

- Maintain third person (avoid “I think”)
- Be authoritative but not absolute
- Use appropriate hedging: “suggests,” “in  
to”

# Top ~~X~~10 Mistakes to Avoid

- 1. Listing studies without synthesis:** “Author A said X, Author B said Y.”
- 2. Being too broad or too narrow:** Balance comprehensiveness with focus
- 3. Lack of clear organization:** Random organization makes it hard for readers
- 4. Uncritical acceptance:** Evaluate, don’t just accept
- 5. Ignoring contradictions:** Address conflicts between studies
- 6. No clear argument/thread:** Every section is equally important toward your gap
- 7. Outdated sources:** Include recent work (at least 5 years old) (review)

# The “So What?” Test

*After writing your literature review, ask:*

- Why does this matter?
- How does this justify MY research?
- What unique contribution will I make?
- Is it clear what gap I'm addressing?

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# **Summary - 10 Key Points**

1. Literature review = synthesis, not summary
2. Start with a clear, specific research question
3. Set inclusion/exclusion criteria systematically
4. Read strategically using the three-pass method
5. Take structured notes that support analysis
6. Ask critical questions, don't just accept what you find
7. Identify themes and organize meaningful connections
8. Synthesize across studies - show patterns and gaps
9. Build an argument that justifies YOUR synthesis
10. Structure clearly and write with purpose

# Thank You :)

*Finished thesis is the best thesis.*