AI Researchers
Embedding Responsible AI in Research

USE CASE 1, ITEM 02: LITERATURE REVIEW AND SYNTHESIS

From summary to synthesis

Using generative AI without losing researcher judgement. 60-minute workshop

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AI proposes structures; researchers authorise interpretations

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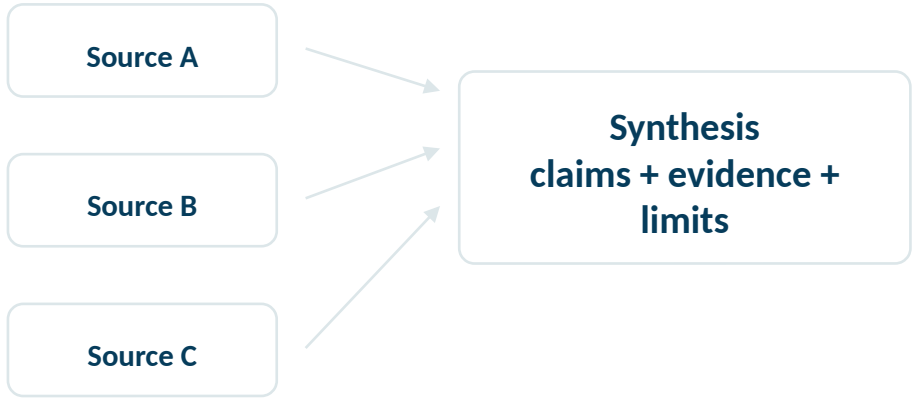
From Summary to Synthesis

Using generative AI without losing researcher judgement

60-minute workshop: literature review & synthesis



What participants will produce

The workshop is designed around evidence, not around a specific AI tool.

1 Evidence map

What each source says, what it does not say, and what remains uncertain.

2 Claim–source audit

A check of whether AI-generated claims are supported, partial, unsupported or misleading.

3 Improved prompt

Instructions that require evidence, limitations, disagreement and no invented certainty.

4 Revised synthesis

A short, balanced paragraph that remains under researcher responsibility.

Summary is not synthesis

A summary reduces sources; a synthesis relates them and explains what they mean together.

SUMMARY
Source A says X.
Source B says Y.
Source C says Z.

→

SYNTHESIS
Across the sources, X appears under conditions A and B, but Y complicates this because…

→

RESEARCHER JUDGEMENT
Which evidence matters?
How strong is it?
What interpretation is justified?

Key rule: a fluent paragraph is not a synthesis unless its claims are balanced, qualified and traceable.

Human–AI responsibility boundary

AI can help organise evidence. It must not own the interpretation.

AI can help	Researcher must decide
cluster source notes	which sources are relevant
summarise bounded excerpts	how evidence quality is weighted
surface provisional themes	how contradictions are interpreted
suggest alternative structures	what the final narrative argues
check whether claims cite sources	whether a claim is ready to use

Boundary rule: every source and interpretation is checked against the original before use.

Should we use real article abstracts?

Yes—but for reusable toolkit material, use them carefully.

Why real articles help
More credible for researchers
Shows authentic complexity
Encourages source-based discussion
Avoids purely toy examples

Reuse caution
Full abstracts may be copyrighted
Licences differ by journal
Avoid pasted PDFs or unpublished papers
Do not use personal/confidential data

Recommended for this workshop
Use short, attributed, paraphrased source cards from open-access papers. Participants work with evidence without reproducing full abstracts.

Today's mini-corpus uses five real open-access papers, represented as paraphrased teaching cards.

Mini-corpus: five real source cards

Topic: how GenAI supports literature review workflows—and where it can mislead.

A: AI for SLR tools
AI supports screening/extraction and semi-automation. Challenges: evaluation, usability, transparency.

B: Knowledge development
GenAI can support synthesis, critique, gap identification and agenda building, but as human-centred collaboration.

C: Reliability limits
Efficiency gains are reported; accuracy varies. Simple screening outperforms nuanced synthesis; hallucination is a major risk.

D: Ethics mapping
GenAI ethics literature includes hallucination, privacy, bias, safety and interaction risks; synthesis should reveal imbalances.

E: ChatGPT in education
Benefits include feedback, writing and productivity; risks include overuse, weakened innovation/collaboration and need for guidelines.

Participant task: mark one benefit, one limitation and one uncertainty in each card.

Step 1: Build a manual evidence map

Before using AI, establish what the sources actually support.

Card	Main finding	Limitation	What remains uncertain?
A			
B			
C			
D			
E			

Why this matters

The manual map is your baseline. It protects participants from accepting a fluent AI answer as the starting point.

Step 2: Compare with a naive AI synthesis

A broad prompt often produces broad certainty.

Naive prompt
“Summarise what these sources say about the value of generative AI for literature reviews and synthesis.”

Prepared AI output
“The literature clearly shows that generative AI improves the quality and efficiency of literature reviews. Across the five sources, researchers agree that AI tools can screen and extract papers, identify themes, reduce bias and produce more original syntheses. The main concern is simply that users should check citations and follow institutional rules. Overall, generative AI can be treated as a reliable co-reviewer…”

Pair task: underline every claim that would need source-level verification.

Step 3: Claim–source audit

Classify claims before using them.

AI-generated claim	Status	Evidence question
AI improves review quality	Supported / Partial / Unsupported / Misleading	Which card directly tests final quality?
AI reduces bias	Supported / Partial / Unsupported / Misleading	Which card shows bias reduction?
AI produces original syntheses	Supported / Partial / Unsupported / Misleading	What source supports originality?
Citation checking is enough	Supported / Partial / Unsupported / Misleading	What risks remain after citation checking?
AI is a reliable co-reviewer	Supported / Partial / Unsupported / Misleading	What does “reliable” require?

Rule: a claim can sound reasonable and still be unsupported by the provided sources.

Facilitator reveal: what went wrong?

Most AI synthesis errors are not obvious hallucinations; they are subtle distortions.

Issue type	Example	Why it matters
Overstatement	“Clearly improves quality”	Efficiency or support is not the same as final quality.
False consensus	“Researchers agree”	The sources include warnings and uncertainty.
Unsupported inference	“Reduces bias”	No card directly supports this claim.
Smoothed disagreement	Risks become a minor caveat	Hallucination, low precision and human judgement are central.
Role drift	“Reliable co-reviewer”	The evidence supports cautious assistance, not delegated authority.

Better synthesis names benefits, conditions, limitations and who remains responsible.

Step 4: Improve the prompt

Ask AI to organise evidence, not to invent certainty.

Use only the source cards provided.
Separate findings, interpretation and limitations.
Identify agreement, disagreement and uncertainty.
Name the source card behind each major claim.
Say “insufficient evidence” when needed.
Do not add sources or infer consensus.

Model prompt starter
Using only the five source cards, create a critical synthesis. Separate efficiency benefits, support for organising literature, limitations and risks, areas of disagreement or uncertainty, and implications for researcher responsibility. For every major claim, name the source card that supports it. Do not add sources, do not infer consensus where sources differ, and do not claim improved final quality unless directly supported.

Step 5: Draft a defensible synthesis

Specific, balanced, qualified and traceable.

Model paragraph

The selected literature suggests that generative AI can support literature review workflows by accelerating screening, extraction and the organisation of source material, and by helping researchers explore possible synthesis, critique and gap-identification activities. However, the evidence does not justify the stronger claim that AI reliably improves final synthesis quality or can act as an autonomous co-reviewer. Reported benefits are conditional: AI appears more useful for bounded, structured tasks than for nuanced interpretation, where hallucination, low precision, overgeneralisation and loss of disagreement remain risks. A responsible workflow should therefore treat AI outputs as provisional prompts for human judgement.

Participant task: write 120–150 words including benefits, conditions, limitations and responsibility.

GO / STOP checklist

A synthesis is ready only when the evidence trail is ready.

01 Every major claim can be traced to an original source.

02 Contradictions and minority findings are represented.

03 Methods and limitations qualify the interpretation.

04 No unsupported consensus, quality or originality claims remain.

05 A second person could verify the evidence trail.

GO	STOP / REVIEW

AI can accelerate the route. Evidence and accountability remain human.

References for the source cards

Open-access sources paraphrased for the mini-corpus.

Bolaños et al. (2024). Artificial intelligence for literature reviews: opportunities and challenges. Artificial Intelligence Review, 57, 259.

Schryen, Marrone & Yang (2025). Exploring the scope of generative AI in literature review development. Electronic Markets, 35, 13.

Adel & Alani (2025). Can generative AI reliably synthesise literature? AI & Society, 40, 6799–6812.

Hagendorff (2024). Mapping the Ethics of Generative AI: A Comprehensive Scoping Review. Minds and Machines, 34, 39.

Albadarin et al. (2024). A systematic literature review of empirical research on ChatGPT in education. Discover Education, 3, 60.

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About this resource

Toolkit reference	UC1-02, AI Readiness Toolkit, use case 1: Literature review and synthesis
Developed by	UPF Barcelona School of Management, Ana Freire
Find it at	airesearchers.eu/ai-readiness-toolkit

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