

Tipsheet: Leveling up the Research Process with Generative AI

This guide provides practical tips for using generative AI tools effectively, ethically, and strategically throughout the academic research process.

1. AI Tool Tips Across the Research Process

Generative AI tools can support—*not replace*—your thinking at each stage of your research. Below are examples of how AI can assist throughout the research process.

Planning Your Research Project

- Use tools like **Goblin.Tools** to break large projects into actionable steps.
- Ask LLMs (e.g., ChatGPT, Copilot) to help refine your research question, identify components of an information need, and outline a research timeline.

Developing Search Strategies

- Use AI tools to:
 - Brainstorm keywords and related concepts.
 - Map out synonyms and broaden/narrow search terms.
 - Draft Boolean search statements for library databases (refine manually).

Finding & Analyzing Sources

- LLMs can:
 - Help interpret unfamiliar theories, frameworks, or terminology.
 - Summarize long articles to support comprehension (*does **not** replace reading the source*).

Mapping the Scholarly Landscape

- Tools such as **ResearchRabbit** help visualize citation networks, trace influential works, and discover related scholarship.

ResearchRabbit Tips:

- Begin by selecting **2–4 articles** closely related to your research question.
- Include **2–3 slightly older articles** (published 2–3 years prior to the current year); these typically accumulate more citations and yield richer “similar works” results in ResearchRabbit.
- Remember: **not all similar articles will be relevant**—review each one individually to determine whether it meets your research needs.
- To view similar works in **chronological order**, use the *About* button in the lower-right corner → select **Y Axis** → check **Publication Date**.
- Some articles link directly to full text or PDFs but if not, search for the item in your library’s catalog/discovery system or request it through interlibrary loan at your institution.

Organizing & Synthesizing Research

- AI can help:
 - Generate outline templates for literature reviews.
 - Identify emerging themes across sources.

2. Best Practices for AI-Assisted Research

Use AI to Support, Not Replace, Your Thinking

- Treat AI as a brainstorming partner, not an author.
- Maintain ownership of interpretation, argumentation, and analysis.

Verify All AI-Generated Content

- AI tools may fabricate citations, misrepresent theories, or introduce bias.
- Always check:
 - Citations in library databases
 - Factual claims in scholarly sources
 - Definitions through authoritative references

Stay Updated and Be Curious

- AI tools evolve quickly—regularly revisit new features and best practices.
- Explore multiple tools to understand their strengths and limitations.

Practice Ethical and Informed Use

- Avoid entering sensitive or personal data (especially of others) into public AI tools.
- Recognize and mitigate algorithmic bias.
- Use closed or institutionally approved tools when handling protected information.

Be Transparent

- When required, disclose:
 - Which AI tools you used
 - How they contributed (e.g., keyword brainstorming, summarizing)
- Include this information in a methodology, footnote, or acknowledgments.

3. Pitfalls, Limitations, and Ethical Considerations

Understand what AI cannot do — or should not do — within academic research.

Hallucinations and Inaccuracies

- AI may generate:
 - Fake citations
 - Incorrect quotations
 - Misleading explanations
- Always cross-check against authoritative sources.

Overreliance on AI

- Avoid using AI outputs as your primary source of information.
- Maintain critical thinking and scholarly judgment.

Bias and Incomplete Knowledge

- AI models may:
 - Reinforce dominant perspectives
 - Miss niche or emerging scholarship
 - Exhibit cultural or methodological bias

Data Privacy Issues

- Public AI tools store prompts and may use them for training.
- Do *not* input:
 - Personally identifiable information (PII)
 - Confidential student data
 - Proprietary or unpublished research