

Empowering Student Literature Searches with GenAI: Causality-Focused Research on Community Needs

Jingcheng FU (Residential College 4), Lex LEE Keng Yan (CHS), FANG Yi (Business)
Questions and queries can be sent to: jingcheng.fu@nus.edu.sg

1. Teaching Context & Pedagogical Challenge

UTC2729 Mastering Causal Inference:

Equips students to become **critical consumers of causal claims across disciplines**, with a dual emphasis on **theoretical rigor** and **real-world relevance**.

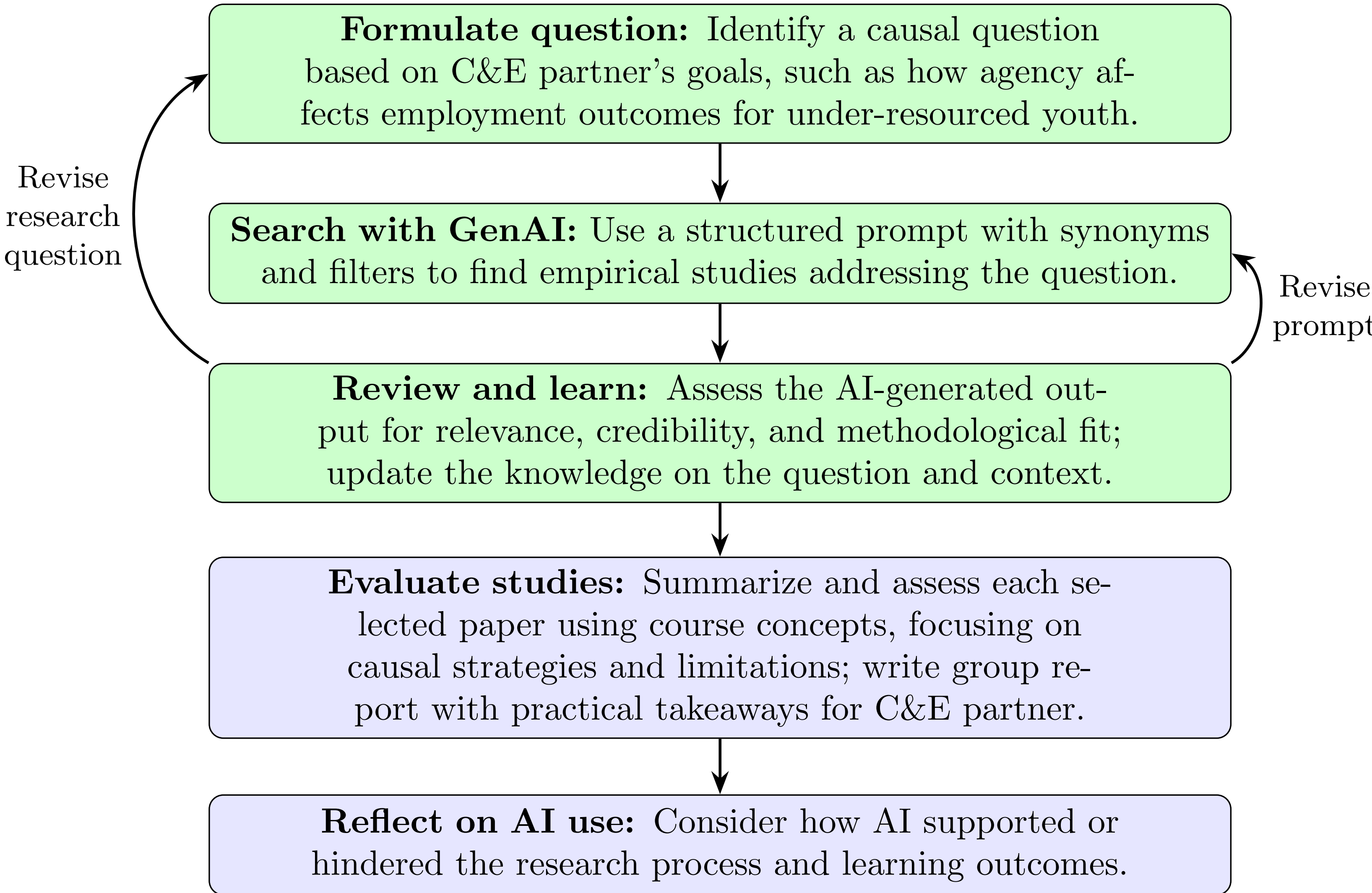
- UG of **diverse disciplinary backgrounds**, **limited research experience**
- Project work for **social enterprises supporting under-resourced youth** (C&E partners), e.g., evaluating a social program or a planned change of practice

Challenge:

Students struggled to **locate, screen, evaluate and use** empirical research relevant to partner needs because the topic typically lies outside their academic comfort zones. Use of GenAI makes the task less daunting, but may overwhelm students rather than assist them in absence of guidance.

2. Teaching Innovation

A scaffolded, iterative GenAI integration within the research process.



3. Key Uses of GenAI

- Refining the Research Question**
Clarify vague questions and generate synonyms (e.g., “agency”, “under-resourced youth”) to improve search focus.
- Generating Search Queries**
Use GenAI to construct logical and filtered search strings with AND/OR, date range, and exclusions.
- Identifying Relevant Studies**
Use tools like Consensus or Elicit to discover empirical papers and screen quickly via AI-generated summaries.
- Summarizing Academic Papers**
Use ChatGPT or PDF-reading tools to summarize key methods, findings, and limitations in lengthy articles.

4. Example Prompts

From Students’ Documentations of AI Use

Prompt:
Find empirical papers on experimental career opportunities, such as internship and work placements and their impact on career clarity or self-efficacy among under-resourced emerging adults.

Results (Consensus):

Here is a list of empirical papers on experimental career opportunities, such as internships and work placements, and their impact on career clarity or self-efficacy among under-resourced emerging adults:

- 1. “Work and Surroundings”: A Training to Enhance Career Curiosity, Self-Efficacy, and the Perception of Work and Decent Work in Adolescents
 - This longitudinal study compared a control group with an experimental group that participated in career counseling activities, showing improvements in professional curiosity and self-efficacy (1).
- 2. Furthering Proactivity and Career Adaptability Among University Students: Test of Intervention
 - A randomized control trial tested a training course aimed at developing proactive personality and career adaptability, resulting in higher career adaptability resources and self-efficacy among university students (2).
- 3. A Longitudinal Study of Relationships Between Vocational Graduates’ Career Adaptability, Career Decision-Making Self-Efficacy, Vocational Identity Clarity, and Life Satisfaction
 - This study used structural equation modeling to explore how career decision-making self-efficacy mediates the relationship between career adaptability and vocational identity clarity among Czech vocational graduates (3).
- 4. An Exploration of Career Transition Self-Efficacy in Emerging Adult College Graduates
 - This mixed-method study examined the relationship between perceived adulthood and career transition self-efficacy among college graduates, suggesting that a developed sense of adulthood predicts higher self-efficacy (4).
- 5. Future Work Self and Career Adaptability in the Prediction of Proactive Career Behaviors
 - The study found that clarity of future work self and career adaptability dimensions predict proactive career behaviors, such as career planning and skill development, among university students (5).

These papers provide insights into how career interventions and adaptability can enhance self-efficacy and career clarity among emerging adults.

[View Results of Papers](#) [Download Results](#)

Construct an Effective Search Query

Prompt:
Can you help me construct a Google Scholar search query to find empirical papers on community engagement and its impact on career aspirations among disadvantaged youth? I want to focus on quantitative studies from the last five years. Also, include synonyms for key terms and exclude studies on children or elderly populations.

Response:

- (“Community engagement” OR “civic participation” OR “social involvement”) AND (“career aspirations” OR “job ambitions” OR “professional goals”) AND (“disadvantaged youth” OR “low-income youth” OR “marginalized young adults” OR “at-risk young people”) AND (“quantitative study” OR “statistical analysis” OR “empirical research”) AND (2019..2024) -children -adolescents -elderly -seniors

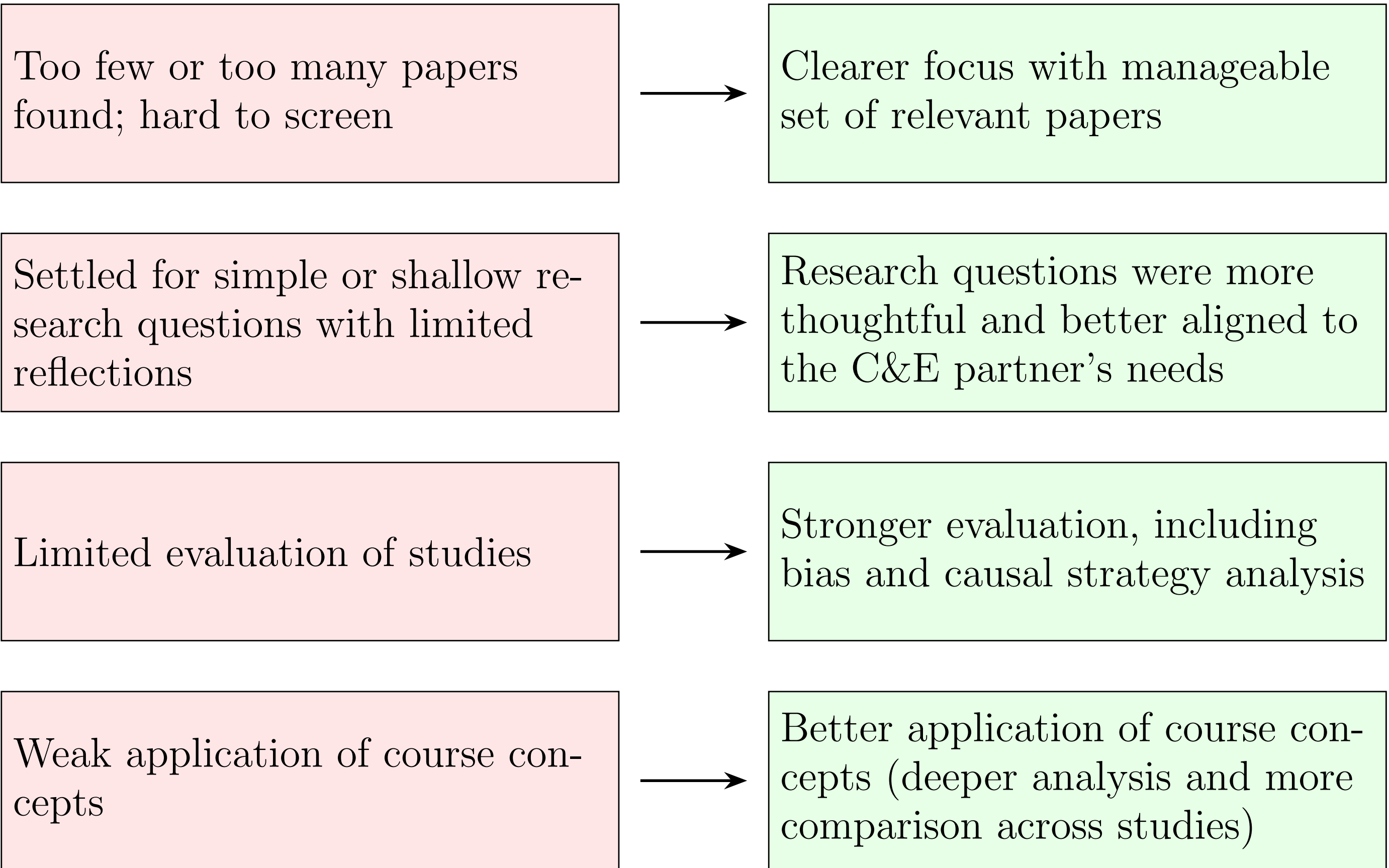
Prompt:
What are some alternative terms for ‘agency’ and ‘under-resourced youth’ that I can use in my search query?

Response:

- Agency: Self-efficacy, autonomy, empowerment, leadership capacity.
- Under-resourced youth: Low-income youth, marginalized young adults, at-risk young people, underserved youth.

5. Evidence of Impact

Before^[1] and After Comparison of Student’s Project Work



Student Reflections:

- “The use of AI...really opens up opportunities to leverage these tools for more effective learning, while still using them in a responsible way.”
- “Need to balance between efficiency and innovation...(as use of GenAI) could restrict the depth of analysis and innovation when working on our project.”

6. Reflections

Integrating GenAI within a guided process:

- Encouraged iterative questioning and deeper engagement with causal reasoning
- Helped students develop transferable AI search strategies
- Enabled more partner-relevant, methodologically sound outputs
- Promoted responsible AI use through clear guidelines, process documentation, and critical evaluation of AI outputs

Takeaway:

GenAI works best when embedded in a guided process emphasising reflection, evaluation, and alignment with authentic research needs.

Notes & References

^[1]GenAI use has always been permitted in this course; learning and research uses are common among undergraduates—see e.g., Freeman J (2025) Student Generative AI Survey 2025, HEPI.