GenAI Competencies in Higher Education:
An Analysis of Existing Literacy Frameworks

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INTRODUCTION

BACKGROUND
- Alongside college students' growing use and opportunities of AI augmented learning, GenAI tools present considerable challenges.
  1. **Students lack technical skills**, such as crafting and refining prompts for academic work.
  2. **Students struggle to critically analyze and assess the quality and credibility of AI outputs.**
- Even with many academic librarians' efforts, GenAI literacy instruction remains largely fragmented and lacks a strong theoretical foundation.
- **Broader Objective of the Study**: To develop a GenAI literacy framework and toolkit for higher education.

GENAI LITERACY
A set of competencies that enable individuals to understand, critically assess, effectively interact with, and responsibly apply GenAI technologies across diverse contexts.

COMPETENCY
- "An underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation" (Spencer & Spencer, 1993, p. 9).
- In the context of GenAI literacy, competencies encompass not only **technical knowledge** and **skills** but also **attitudes and values** needed to use evolving GenAI tools effectively and ethically.

RESEARCH QUESTION
How do current literacy frameworks inform the identification and structuring of core competencies for students' GenAI literacy in higher education?

METHODS

DATA COLLECTION
- We searched academic databases and consulted experts in information literacy framework design and library information services.
- We identified seven relevant frameworks.
- **Data: Seven frameworks published in academic papers or reports in English, focusing on GenAI or AI literacy relevant to college students** (Annapureddy et al., 2025; Hervieux & Wheatley, 2024; Hibbert et al., 2024; Mills et al., 2024; Ng et al., 2023; The University of Adelaide, 2024; UNESCO, 2024)

DATA ANALYSIS
- **Thematic analysis** using NVivo 15
- Deductive coding with inductive expansion and revision
  - A priori codes are from established literacy frameworks, such as ACRL Framework and DigComp 2.2
- Based on one author's coding, the research team resolved discrepancies and identified competencies in an iterative process.
- The identified competences were organized based on **Bloom's taxonomy.**

FINDINGS & CONCLUSION

We identified 10 competencies essential for GenAI literate students in higher education in 4 progression levels.

Progression	Competency	Definition
4. Create	**4.2 Ideate and theorize novel applications of GenAI**	Generate creative ideas and theoretical frameworks for innovative uses of GenAI in diverse domains.
	4.1 Customize or develop GenAI tools	Modify existing GenAI tools or create new ones to meet specific needs.
3. Analyze & Evaluate	**3.3 Justify or critique the use of GenAI tools**	Formulate well-reasoned arguments for or against the use of GenAI tools in specific situations.
	3.2 Evaluate the societal, ethical, and legal implications of using GenAI tools	Assess the broader impacts of GenAI use by examining potential societal consequences, ethical concerns, and legal considerations.
	3.1 Assess the appropriateness of GenAI models and tools	Compare and contrast the features, performance, and limitations of various GenAI models and tools for specific goals.
2. Apply	**2.2 Document and acknowledge the use of GenAI**	Record the use of GenAI tools and provide proper attribution or disclosure in accordance with academic and professional standards.
	2.1 Apply task-appropriate GenAI tools	Select and use a suitable GenAI tool to complete a defined task, using known procedures or guidelines to produce and evaluate results that meet task-specific requirements.
1. Understand	**1.3 Understand the current and future capabilities and limitations of GenAI**	Describe the current and emerging capabilities of GenAI tools, along with their limitations, risks, and appropriate use contexts.
	1.2 Understand the technical foundations of GenAI	Explain the underlying technical mechanisms of GenAI systems, such as training data, model architecture, and output generation process.
	1.1 Develop a conceptual understanding of GenAI and recognize GenAI systems	Know what GenAI is and the ability to identify when and where GenAI is being used in digital tools, applications, or services.

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