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## Information Creation as an AI Prompt: Implications for the ACRL Framework

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## Information Creation as an AI Prompt: Implications for the ACRL Framework

### Abstract

There is much interest in higher education in the teaching and learning aspects of generative AI, including its potential uses in information literacy instruction. However, less attention has been paid to the educational implications of generative AI's impact on academic publishing. Because AI can produce deceptively authentic scholarly articles and falsified data sets, it is fueling the scientific paper mill industry. This has led to record numbers of AI-generated article submissions and scientific paper retractions, even in reputable journals. As a result, AI-generated fake scholarship poses a threat to students' information literacy and learning development. This paper discusses the implications of generative AI for the Framework for Information Literacy for Higher Education.

### Keywords

Generative AI, Information Literacy, ACRL Framework, Fake Scholarship

## INTRODUCTION

There is much interest in higher education in the teaching and learning aspects of generative AI (Crompton & Burke, 2023; Jafari & Keykha, 2024), including its potential uses in information literacy instruction (Lo, 2023; Zhang, 2024). However, less attention has been paid to the educational implications of generative AI's impact on academic publishing. While AI is lauded for its potential to enhance the academic writing process (Khalifa & Albadawy, 2024), it can also produce deceptively authentic scholarly articles (Májovský et al., 2023) and falsified data sets (Chen, 2024; Pogla, 2023). In fact, some of the signature phrases of AI-generated text are beginning to appear in published journal articles, including “regenerate response,” “as an AI language model,” and “as of my last knowledge update” (Maiberg, 2024). AI is also fueling the scientific paper mill industry, leading to record numbers of AI-generated article submissions and scientific paper retractions, even in reputable journals (Van Noorden, 2023). As a result, readers of scholarly articles may unknowingly expose themselves to false data and hallucinations in their daily research activities, adversely influencing their decision making (Vicente & Matute, 2023). Because college students regularly interact with scholarly articles, AI-generated fake scholarship poses a threat to their information literacy and learning development. This paper discusses the implications of generative AI for the Framework for Information Literacy for Higher Education (Association of College and Research Libraries [ACRL], 2015) and provides recommendations for rethinking information literacy instruction in response to the threat AI poses to the integrity of academic publishing.

## GENERATIVE AI IMPLICATIONS FOR THE ACRL FRAMEWORK

Each frame in the Framework for Information Literacy for Higher Education (ACRL, 2015) carries new implications as a result of the rising prevalence of generative AI. Skepticism and strategic thinking are necessary dispositions to counteract the threat of the AI-generated fake scholarship that students and librarians should expect to be exposed to as they navigate academic literature. More critically, because the source of AI-generated output from large language models (LLMs) cannot be determined, a shift from the tradition of analyzing academic literature based on text authority (e.g., journal reputation) to analyzing it with a focus on cognitive authority (i.e., author reputation) is necessary. The following sections describe these implications, frame by frame.

### AUTHORITY IS UNKNOWN

Generative AI shifts authority from “constructed and contextual” (ACRL, 2015, p. 4) to authority as unknown. When the corpus that an LLM uses to generate output

is unknown, then the authority of the information cannot be determined because there are no longer any indicators of authority to verify source credibility, such as author or name of publication. This introduces a significant disruption to the knowledge practices outlined in the frame, Authority is Constructed and Contextual. While the popular strategy of lateral reading, or fact checking, may serve as a weak surrogate for authority, it is not ideal. A lateral reader that lacks subject expertise on a topic will not recognize missing facts or nuanced errors in the information, and fact checking can only be conducted on verifiable information. Expert opinion and analysis, even if summarized by a generative AI tool, cannot be verified by a novice.

#### INFORMATION CREATION AS AN AI PROMPT

The ACRL (2015) Framework describes information creation as the “iterative processes of researching, creating, revising, and disseminating information” (p. 5), reflecting a human-led and -created process. Generative AI, on the other hand, is machine-generated text, nothing more than the probability distribution of human-created training data (Peck, 2023). This adds a new lens of interpretation to the knowledge practices of Information Creation as Process. When the source of information is disclosed as generative AI, then an information user can determine its appropriateness and usefulness for meeting their information needs. Knowledge practices remain intact. However, when an AI-generated information source is not disclosed as such, it may be mistaken as human-generated, disrupting an information user’s ability to assess its constraints and capabilities. As generative AI continues to advance, the latter situation is expected to occur more frequently (Fetzer, 2024).

#### RESEARCH AS VERIFICATION

Research as Inquiry describes inquiry as a process that includes the formulation of research questions, the implementation of research methods, and the organization and synthesis of information from multiple sources and in meaningful ways (ACRL, 2015). With generative AI, the process becomes an exercise in prompt engineering and output, upending the knowledge practices of the frame. Though the iterative nature of prompt writing may produce content that resembles the product of human-conducted inquiry, it is important to remember that the output is only a machine-generated approximation of the inquiry process. Research inquiry cannot be outsourced to machines because the process itself must be learned to be understood. Generative AI only creates a product, though there may be ways to use it to support the inquiry process (Leung et al., 2023). Nevertheless, it is increasingly used by scholars as a convenient proxy for inquiry that produces genuine appearing research, albeit riddled with errors and hallucinations (Stokel-Walker, 2024). Source verification has quickly become a necessary practice during the research process.

### SEARCHING AS STRATEGIC PROMPT

Generative AI adds a new lens of interpretation to Searching as Strategic Exploration by calling for a change in strategy when evaluating the “range of information sources” (ACRL, 2015, p. 9). When authority is unknown and output is nothing but the probability distribution of a data set, the ability to strategically explore is lost. This may be remedied by using a customized corpus of text that comes from carefully curated information sources. Searching is strengthened through strategic prompt writing. Tools like docAnalyzer.ai go beyond the knowledge practices of Searching as Strategic Exploration by allowing researchers to interact with documents to summarize studies, compare and contrast findings, analyze theories and methodologies, and confirm or develop hypotheses.

### SCHOLARSHIP AS AN AI-GENERATED CONVERSATION

As generative AI continues to evolve in the world of academia, scholarship can no longer be viewed solely as a human-led discourse “in which ideas are formulated, debated, and weighed against one another over extended periods of time” (ACRL, 2015, p. 8). In this new environment, scholarship may also be an AI-generated conversation that can produce deceptively human-like discourse. Since generative AI is not yet capable of human reasoning (Kidd & Birhane, 2023), the present implications of scholarship as an AI-generated conversation call for discernment and vigilance during the research inquiry process. Increased emphasis on oral scholarly conversation, such as classroom discussion, academic symposium, and conference presentation can assure that cognitive authority and human reasoning remain central to scholarly discourse in the age of generative AI.

### AI-GENERATED INFORMATION HAS WHAT VALUE?

The Information Has Value frame acknowledges that information is both a social and economic good (ACRL, 2015). As an economic good, copyright law protects the intellectual property rights of the creator or owner. Yet, OpenAI is testing the limits of intellectual property rights, as evidenced in the growing number of copyright lawsuits by authors and publishers against the company (Niemeyer & Varanasi, 2024). Though the outcomes of these lawsuits will not be known for some time, the fact that they are occurring at all highlights the important issue of information as a valued asset. In the meantime, instead of centering Information Has Value around the knowledge practices of recognizing intellectual property rights and proper attribution, the questions we should begin to ask are ethical with economic consequences: How do we value information in the age of generative AI? Is data more valuable than information?

## RECOMMENDATIONS FOR INFORMATION LITERACY INSTRUCTION

Generative AI implications for the ACRL Framework call for new strategies to embed AI literacy skills into information literacy instruction. A major goal should be to challenge current conceptual understandings of academic authority when the source of information is unknown or suspected to be AI-generated. Prerequisite to this change is an understanding of how generative AI works, followed by strategies to evaluate authority beyond text and to teach students how to read scientific sources.

### FOCUS ON THE FOUNDATIONS OF AI

In a survey sponsored by Turnitin (Shaw et al., 2023), nearly half (49%) of college students reported using generative AI tools for both academic and non-academic uses. The adoption of AI is only expected to grow, making AI literacy as essential as information literacy. First, AI literacy should emphasize the fundamental differences between information retrieval and information generation. ChatGPT is not a search engine, nor are chatbots embedded within search engines (Mitchell, 2024). Second, students need to understand how large language models work, what the statistical concepts behind AI mean, and when to use (and not use) AI tools. The open access IBM SkillsBuild (<https://skillsbuild.org>) course *Artificial Intelligence Fundamentals* is recommended as a starting point for both students and librarians. AI literacy will help students become skeptics of AI-generated text authority.

### EMPHASIZE COGNITIVE AUTHORITY

An AI-generated scientific article creates the appearance of text authority when it escapes detection and is published in a peer reviewed journal with a high impact factor (Mitchell et al., 2011). To overcome this, an emphasis on cognitive authority is needed to shift the focus to human author(s) versus peripheral measures of their authority via text. Wilson (1983) defined cognitive authority as the reputation of an individual who has proven expertise in their given field and as a result, is widely accepted as a credible source. To determine cognitive authority, students should look beyond the authors' educational credentials and institutional affiliations to gather evidence about their background experience and how it relates to the goals of the paper.

### TEACH SCIENTIFIC READING

Transitioning students' focus from text authority to cognitive authority requires a shift in strategy from source analysis (e.g., lateral reading) to structural analysis. Structural analysis is a method for reading scholarly articles that focuses on the intention of format (Carey et al., 2020). Headings that organize a scholarly article, as well as figures and tables, provide clues to the type of article, purpose of the research, and its findings and significance. As students become familiar with the

various formats of different types of scholarly articles, they will begin to see patterns in scientific language expression. Deviations from those patterns or even the over-expression of certain words (Chawla, 2024) may signal that the article lacks human cognitive authority, i.e., that it was written all or in part with the help of a chatbot. In such circumstances, verification of the article's reference citations is warranted.

## CONCLUSION

With nearly half of college students reportedly using generative AI, it is crucial that they become AI literate so that they are better able to navigate an increasingly deceptive information environment of AI-generated academic literature. This calls for an expanded interpretation of the knowledge practices that make up the ACRL Framework and new strategies that shift attention away from traditional measures of text authority to a focus on cognitive authority that increases the emphasis on oral scholarly conversation, which is observably and verifiably of human origin. Classroom discussions, academic symposiums, and conference presentations are a few methods for shifting the focus to cognitive authority; and when known, the author's experiences should become the central focus of analyzing source credibility, rather than their educational credentials alone or the peer review status of their article. Finally, students' ability to read scientifically and analyze a scholarly article structurally will help them identify clues in the text that may indicate an AI-generated origin.

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