

Teaching search expertise in the age of Generative AI: An autoethnographic exploration of liminality

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ABSTRACT

AI literacy is increasingly seen as a necessary set of proficiencies for the 21st century, and the continuing development of Artificial intelligence (AI) technology has an impact on library and information services, along with the ethical implications it poses. This can be seen as a wicked problem for the field of LIS, and there is a need to address this foundational technology in our curriculum, which requires an understanding of the perspectives of students, faculty and practitioners. It also represents a transformative and challenging period, not just for students but also for educators, and this process of understanding and integrating this technology could be seen as a liminal state. Using the concept of liminality, this paper presents an autoethnographic analysis of the experience of learning and teaching about Generative AI as part of a course on information retrieval and developing search expertise.

ALISE RESEARCH TAXONOMY TOPICS

Artificial intelligence; Information literacy; Curriculum; Pedagogy; Teaching faculty.

AUTHOR KEYWORDS

AI literacy; Threshold concepts; Autoethnography; Liminality.

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INTRODUCTION

Due to its dynamic and adaptive capabilities, Generative AI (Gen AI) can be seen as a foundational technology (Lo, 2024a). AI literacy is increasingly seen as a necessary set of proficiencies for the 21st century, noted by a 2023 US Department of Education report and the European Union's Digital Competence Framework among others. According to Long & Magerko (2023), AI literacy can be defined as a "set of competencies that enables individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace" (p. 2). The ever growing literature on Gen AI's impact on library work highlights aspects like enhanced access to information, automation of routine tasks and provision of personalized learning experiences among others (Cox & Tzoc, 2023, Houston & Corrado, 2023, Lund & Wang, 2023) while keeping in focus the ethical challenges that come in its wake. In the context of academic librarianship, Lo (2024b) states that "without an understanding of AI's principles, capabilities, and ethical considerations, higher education risks falling prey to AI's pitfalls rather than leveraging its benefits" (p. 635). As "facilitators of information and knowledge" (p. 635), this applies to librarianship at large and consequently there is need for development of LIS curriculum to effectively address this foundational technology through the identification of skills, competencies and threshold concepts. As an effort towards this, the author is in the process of doing a retrospective study of student work, to understand student perceptions towards this technology and its use as part of a course teaching search expertise (Kizhakkethil & Perryman, 2024).

Liminality

Tucker et al., (2014) notes that search skills and associated concepts have been a part of LIS program coursework for at least thirty years and as such can be looked upon as a fertile area for exploring threshold concepts. A threshold concept can be transformative, troublesome, irreversible, integrative and bounded. The experience of liminality is a crucial aspect of developing, understanding of a threshold concept. According to Baillie, Bowden & Meyer (2013) liminality is a "state in which there are two competing ways of seeing a situation, one the established but increasingly inadequate way" (p. 240) and a newer more comprehensive and powerful way of seeing. The learning that takes place in liminal spaces is not linear, there is "an ebb and flow of understanding, oscillation in terms of the ontological dimension of variation, and 'stuck places'" (p. 240). Liminality has been likened to a rite of passage as "threshold concepts are a challenge to conceptual understanding and even professional identity formation" (Yukawa, 2015, p. 162). Threshold concepts have been studied in relation to information literacy (Townsend et al., 2016) and search expertise (Tucker, 2014) in LIS. According to Yukawa (2015) an "understanding of threshold concepts in LIS could be a powerful conceptual and ontological tool for solving wicked problems" (p. 162). The advent of Gen AI and its continuing development with the arrival of agentic systems represent a wicked problem, especially for LIS education, not just through its impact on library and information related services, but even more

importantly through the myriad ethical implications that it poses. The author holds that experience of liminality is not just for students but also for faculty who are trying to navigate this new and disruptive scenario. This paper presents an autoethnographic analysis of the author's experience of liminality when it comes to learning and teaching about Gen AI.

METHODOLOGY

According to Dali & Charbonneau (2024), autoethnographies can be seen as “more reflective of unique personal experiences (and, by extension, more valid)” but can also empower research participants, “helping them to improve their well-being and situations in their communities or organizations” (p. 183). It differs from other qualitative methodologies, since words as data come directly from the researcher as the sole participant. The words can represent the lived experience of the researcher “as well as considerations of praxis” (Bordonaro, 2020, p. 165) which in this case involved teaching. Personal memory, journal notes, discussion posts and reflections written for a course and interactions with AI tools like ChatGPT were used to write up the self-reflection. Adopting an approach similar to Roeschly et al ., (2025, the writing of the author self reflection enabled the critical analysis thereby allowing the exploration of liminality, not just as a new faculty member, but also in thinking about the impact of a disruptive technology and how the same should be addressed in the course been taught. The aim of presenting this autoethnographic self-reflection, is to encourage conversation about it as a valid method of inquiry, and to spur conversations around what needs to be done to address Gen AI in our curriculum, the organizational support it entails, especially from organizations like ALISE, towards the formulation of best practices that guide LIS educators at large.

AUTOETHNOGRAPHIC SELF REFLECTION

“Just check if there is another person with the same name”. This was my husband's answer to my exclamations on the response churned out by ChatGPT when I asked it about myself. A response that made me go “wow! I need to meet this person!”. It had nothing to do with me, someone who had defended her dissertation during a pandemic, struggled to find meaning and purpose post that, dealt with losing a parent and had now landed a tenure track position. The hallucinated “me” was working for an R1 institution, had secured big grants and whose research interests were different from mine. I must admit, I had to prompt it a few times, adding more information each time, to get the response. See Figure 1 (identifiable information has been redacted).

In the summer of 2023, the enthusiasm associated with starting a new position, was also tinged with anxiety over what came across as a tipping point in technological development. The hallucinations, especially the made up citations I had received in some of my experiments with this new tool, underscored the information literacy implications that this new technology presented. While writing this, I looked up my past interactions on ChatGPT and saw a response of “you just made that up” to a hallucinated list of citations provided as an answer. I would ask myself, what would the implications be for the profession of librarianship and how do I prepare

my students for a future where Generative AI and even more powerful technologies will be the norm? I knew I had to educate myself if I had to help students navigate this new reality. I would look up information in the form of journal articles on a regular basis, with the hope of finding material that would help guide me, without much success. There were increasing number of articles written by librarians talking about the areas this technology could impact. I made note of potential articles I could assign my students to read.

Figure 1

Response from ChatGPT

Thank you for providing additional information. I was able to conduct a search and found an academic named .. who is currently an Assistant Professor in the School of Information at the. ...research interests include social computing, human-computer interaction, and computer-supported cooperative work... work focuses on understanding how technology can be used to facilitate communication and collaboration among individuals, particularly in contexts such as healthcare and education... has published several articles in toptier information science and human-computer interaction conferences and journals, including the Proceedings of the ACM Conference on Human Factors in Computing Systems, the Journal of Medical Internet Research, and the Proceedings of the Association for Information Science and Technology Annual Meeting. Additionally, ... has received multiple grants to support her research, including a National Science Foundation grant to investigate the use of social media in healthcare. is also actively involved in teaching and mentoring graduate students in the School of Information. Overall, seems to be an accomplished academic with a strong research record in the field of information science, particularly in the areas of social computing and human-computer interaction.

ChatGPT response to a question about the author

I signed up for a course offered by ALA titled “Exploring AI with Critical Information Literacy” and it helped me to think of AI critically. As I go over my discussion posts and the reflection assignments for the course, I see a pattern of my dawning awareness about how I had been using AI in innumerable ways but had just not perceived it as such. In a reflection, I had written, “I realize that I hadn’t thought of facial recognition on my phone as AI, it was something I had taken for granted as a feature and not really thought of the technology behind it”. It also shows how I wanted to address it as part of my curriculum. In a discussion post I had written for the course, I have said “One aspect of AI that has been on my mind, and it is in line with what I would like my students to explore this semester; the hallucination part. That it basically can make up things, important that we remember what “generative” means in this context. The line from an internal Microsoft document that terms AI as persuasive and not truthful, sums up the hallucination part well”. I go on to describe my experience of using the tools, “I have asked both the same question, for example; “Find me papers that focus on use of artificial intelligence in library and information science education”, and both of them just made up citations. ChatGPT had proper citations, where the journals/conferences were real. Bard just gave me titles of paper, year and surname of author/s. I assumed Bard would have access to google scholar and so will

not hallucinate”. I had ended the post saying that “we need a broader understanding of what we mean by information literacy and will need collaborative effort from all stakeholders”. As I write this, I realize that I hadn’t made that leap then of knowing that one doesn’t use tools like ChatGPT as a search engine or as a source for scholarly resources. Currently we have many AI tools like Elicit and Research Rabbit to help us with that.

Following this trajectory, I had an assignment in the Information Retrieval course I was soon to teach, where the students were asked to use either ChatGPT or Bard (now Gemini) as a source of information. In hindsight, it was a big mistake, not helped by the provision of a prompt “find me scholarly resources on”. I soon hit a wall, because I realized ChatGPT had stopped giving hallucinated citations by the time the Fall semester started off. It would give a message that it didn’t have access to real time information, and gave suggestions for search terms and databases one could use to find the needed information. My hopes of students finding out that citations were fake and consequently the importance of evaluating the sources of information fell flat. The truth was I didn’t know how to navigate this. I decided to let the assignment stand as I had set it up. In the meantime, I continued my exploration of this rapidly developing area, newer tools and newer versions came one after the other. There were plenty of webinars, but I soon realized that I was not really learning anything new. There were no best practices I could draw on. In the meantime, I struggled with my students in their quest to develop search expertise. This was a new area for me, I had experience in teaching information organization, which helped of course. I made videos of database searches along with flow charts and infographics, of using subject headings, natural language terms, applying truncation and proximity and combining both subject headings and natural language terms in a search. I felt gratified reading the reflections of the students on their search experience, the slow gaining of understanding, the realization they would’ve benefited greatly if they had known these skills earlier. I still didn’t have a clear idea of what I hoped the students would gain from trying AI tools, just that it was important they experimented with it and thought of the implications it could have on the profession they were learning to be a part of.

The end of semester was soon on us, and the time for testing AI tools. I talked to them about keeping the ethical implications in mind while understanding that this technology was here to stay and as librarians, we couldn’t look away from it. We had to play the bigger role of helping our patrons and the communities we serve on how best to use them. The students’ perceptions fell on a continuum with the majority having more negative perceptions. Some failed to catch the hallucinations, even mesmerized by the tidy list of citations they received especially if they used Bard, giving me pause for thought, on whether I had failed to imbue the importance of evaluating sources. The majority though, understood the information literacy implications, the schoolteachers especially worrying about its impact on thinking skills of children. The small minority who were cautious, but could see the potential for its use, were the ones I learned from the most, who helped me to traverse the liminal space I was in. Seeing what they had done with the responses they got from the AI tool, like the search term and database suggestions, made me realize that in my focus on the hallucinations and only certain aspects of information literacy (evaluation of sources), I had missed seeing how these tools could fit into the information environment surrounding search. A comment I had made for a student assignment “I think this

would be an efficient and smart way of using these tools”, encapsulates this realization. This experience helped me to see how I should address it in future semesters, and what and where I should add readings to help the students navigate this new scenario. It also made me think of analyzing the student work to really understand their perspectives and how they could contribute towards ways to address AI in our curriculum. After the semester was done, I obtained an IRB approval to retrospectively look at student work. The reflections my students write as part of their assignments help me to understand where they need more support or what changes are necessary. In a similar way, reflecting on my own experience, helps me to see that liminality is something that we will need to traverse, whatever the stage we are in as far as our career is concerned, and this is especially true in times of disruption, whether it is a pandemic which required us to move to online learning and teaching environments or whether it is the arrival of new technologies like Gen AI.

CONCLUSION

Pratschke (2024) notes that building AI literacy is only a start, and the competencies associated with it are a vast area. “AI literacy teaches us to view such developments from a critical and informed standpoint” (p. 97). As we acknowledge the importance of AI literacy, it is equally crucial that we understand the liminality that is associated with it. Not just on an individual level but even on organizational levels as we figure out ways to “nurture so-called human or future skills or competencies, we also need to update the skills and competencies in hard disciplinary areas, where AI is changing practice” (Pratschke, 2024, p. 97). As a term used to describe a transition phase, liminality is a useful concept to study our own experiences of becoming AI literate not just as individuals but as a profession also. This calls for methodologies that span the spectrum, and approaches like critical literacy and Paul Freire’s “strategy of problem-posing, in particular the engagement of creative and reflective dialogue, as a starting point” (Tewell, 2015, p. 31). Such dialogues can be with oneself and with others, to find ways to address the liminality surrounding wicked problems.

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