Fostering AI Literacy and Information Literacy with Generative Artificial Intelligence

Ryan Slattery

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Dr. Gerald Knezeck

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Abstract

As faculty and students in higher education contend with the new technological trend represented by ChatGPT and other forms of generative artificial intelligence, librarians must adapt and incorporate generative artificial intelligence into library instruction to help students develop AI literacy in addition to information literacy skills. This effort will aim to reduce potential misuse of generative AI and prove its capabilities as a research and teaching tool in the hands of both students and faculty, while encouraging users to engage with generative AI on a critical basis. This paper will briefly review information literacy and AI literacy, discuss the applications of generative AI in developing these skills, and provide a guide on how to work with faculty and students in using generative AI ethically and appropriately.

Introduction

Generative artificial intelligence (AI) can potentially prove to become a disruptive factor in the field of higher education, leading to frustration and misgivings from both faculty and students. Faculty struggle with concerns that generative AI could be misused, leading to a rise in incidents of academic dishonesty and plagiarism when students utilize it to generate and submit work as their own. This could potentially lead to a lower quality of education and ultimately devalue the academic program and overall detract from the institute of higher education. A core responsibility of librarians in higher education lies in the development of information literacy skills through the instruction on how to conduct research using library resources, making them well-positioned to also foster AI literacy. To help ameliorate the problem, academic librarians must take the initiative in fostering both AI literacy and information literacy, employing a

multi-pronged approach on educating faculty and students how to appropriately use generative AI to supplement the research process and their academic endeavors.

Brief Literature Review

Intersections of Literacy

Academic librarians routinely engage in library instruction, teaching information literacy, which can serve as the basis of their approach in incorporating generative AI. The American Library Association (2015) defines information literacy in their framework, referring to it as an integrative set of skills that encompasses navigating, identifying, evaluating, utilizing information as well as an understanding of how information is produced. In relation to the exploration and utilization of generative AI, the development of AI literacy could prove just as crucial. According to Long and Magerko (2020), AI literacy represents the proficiency to critically evaluate AI, communicate and collaborate with it, and use AI as a tool in various contexts. In short, information literacy helps students develop critical thinking regarding the information they encounter throughout their academic studies and beyond, while developed AI literacy gives users critical awareness of the technology and its myriad uses. These two literacies would intersect to hopefully allow students to expand their critical thinking in both domains.

Perceptions of Generative AI

Generative AI represents a potentially disruptive factor in the field of higher education for a number of reasons. One popular point of discussion circulating around generative AI lies in the concern of academic dishonesty and plagiarism: that students could potentially use it to generate full-fledged articles and responses to submit as their own work. A survey conducted by

Amani et al. (2023) at Texas A&M University sheds some further light on faculty perceptions, indicating some worry about students' lack of knowledge regarding the limitations of generative AI, as well as acknowledging the need to teach how to use it appropriately to avoid misuse or negative impact on the students' education. Although the future of generative AI remains unclear, it is currently a necessity to educate students on how to utilize the technology in a more ethical and appropriate manner.

Details of Problem

Faculty and students have needs that may overlap in some aspects that need addressing separately. Students need instruction in the appropriate use of generative AI as well as understanding its limitations, including on how to use it to supplement their academic work, which can take place in a variety of ways. First and foremost, a tutorial module that can establish a basic understanding of generative AI as well as discuss appropriate use to avoid conflict with the existing academic honesty policy. Instruction sessions conducted by librarians can incorporate some form of generative AI into the lesson to help facilitate further understanding of its use and applications regarding research and information seeking activities.

Faculty must have a reliable source of information as well as guidance on the capabilities of generative AI and how they can navigate its utilization in their classes, as well as how to implement its use through assignments and overall curriculum. A workshop series targeting faculty could help demonstrate how generative AI works as well as outline considerations for its incorporation into coursework. Librarians can also work with faculty to develop appropriate assignments to help develop AI literacy and related concepts in a subject-specific context.

Collaboration with faculty is crucial to a successful implementation of any instructional efforts launched by the library.

Incorporation of Technology

A variety of generative AI models currently exist and depending on the model, they can generate text, audio, images, even code. Initial steps of this project will focus on applications of text-based generative AI, which includes ChatGPT, Bard, Copilot, etc, with potential expansion to other forms of generative AI such as those that produce images or audio. Selected text-based generative AI can then be used to facilitate assignments, such as the example listed out in **Figure 1**.

Figure 1

Timeline / Resources

The rollout of the project entails the creation of multiple resources that target the needs of faculty and students alike. However, generative AI applications such as ChatGPT or Bard are relatively easy to integrate into the developed products since they are separate and maintained externally with no mandatory financial costs: all that is required is some guidance on how to register with selected generative AI. The beginning stages should ideally target faculty sometime before the academic year begins to allow for time to ascertain their needs and develop student-facing instructional resources and materials to align with their curriculum before the courses start in the fall semester. Overall, setting up training and collaboration opportunities with faculty will take time, especially if relationships need to form between the library and various academic departments.

Assessment of Impact

Successful implementation should take in the form of improved perceptions from faculty on the use of generative artificial intelligence as a research tool, as well as demonstrated understanding of its use and relevant information literacy concepts from students. To help assess information literacy, Carter (2013) discusses the creation and implementation of a rubric as a method to evaluate understanding after an in-class instruction session conducted by a librarian. Adaptation of this rubric could serve to help provide immediate feedback after completion of an in-class activity. In a similar vein, Daniels (2010) provides insight on the implementation of a targeted rubric for the overall course. The use of both options potentially allow for assessment in the short-term and long-term. While AI literacy refers to a different set of skills, they can also be included in the assessments created with some adaptation, especially in their overlapping aspects.

Summary / Conclusion

As mentioned prior, collaboration between librarians and faculty is vital to the success of any integration of generative AI into the curriculum. Furthermore, inclusion of information literacy as well as AI literacy can provide long-term benefits to learners that last well beyond their time in academia: the skills developed could help them navigate future challenges with new technology especially as artificial intelligence continues to grow and extend its influence further into modern day life.

References

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