

Practical considerations for attending to artificial intelligence (AI) in online learning

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ABSTRACT

Evolving artificial intelligence (AI) capabilities and related concerns about their effect on higher education continue to emerge. Following are suggestions for educational leaders to support faculties in adapting to these advances at the classroom and institution-level. AI challenges and solutions to online learning, including strategies and ethical concerns for leveraging AI tools in the classroom are addressed. Resources and training opportunities for educators about the implementation of AI are provided.

Keywords: artificial intelligence, AI, data ethics, teaching, higher education

Consideraciones prácticas para abordar la inteligencia artificial (IA) en el aprendizaje en línea

RESUMEN

Las capacidades de la inteligencia artificial (IA) en constante evolución y las inquietudes relacionadas con su efecto en la educación superior siguen surgiendo. A continuación, se presentan sugerencias para que los líderes educativos apoyen al profesorado en la adaptación a estos avances tanto en el aula como a nivel institucional. Se abordan los desafíos y las soluciones de la IA para el aprendizaje en línea, incluyendo estrategias y preocupaciones éticas para aprovechar las herramientas de IA en el aula. Se ofrecen recursos y oportunidades de capacitación para educadores sobre la implementación de la IA.

Palabras clave: inteligencia artificial, IA, ética de datos, docencia, educación superior

关于在线学习中应用人工智能(AI)的实用考量

摘要

人工智能(AI)技术的不断发展和关于其对高等教育影响的关切日益增多。本文旨在为教育领导者提供建议,以支持教师在课堂和院校层面适应这些技术进步。本文探讨了人工智能对在线学习的挑战和解决方案,包括在课堂上运用人工智能工具的策略和伦理考量。此外,本文还提供了有关人工智能实施的资源和培训机会。

关键词: 人工智能, AI, 数据伦理, 教学, 高等教育

Artificial intelligence (AI) is not new. It has been gradually working its way into many people's lives for some time. Whenever we use a search engine, virtual assistant, navigation app, social media, or shop online, we are using AI (Kennedy et al., 2023; Poola, 2017). However, for most people, AI runs unnoticed and discreetly in the background. With AI's increasing presence in higher education, many institutions struggle to catch up their policies to attend to the ever-changing technology (UNESCO, 2023).

Suggestions for Educational Leaders to Support Faculty in Adapting to AI

Technology advances have opened choices for using specific AI applications in more interactive and direct ways. Evolving access to AI may overwhelm and confuse many especially in higher education settings. Accordingly, the discomfort that comes from that fear and confusion needs to be addressed.

The first recommendation is to identify the sources of the fear and confusion—specifically, whether one or both stem from an overall discomfort with technology or to the specific AI application. Some older faculty may be less comfortable using new technologies in general, particularly if they do not understand them or think they might be difficult to use (Weilage & Stumpfegger, 2022). The best way to address these issues is to provide training on the specific digital tools faculties and educational leaders intend to use, focusing on both *why* they may be helpful and *how* to use them.

It is important to provide training on AI in general. Faculty members do not necessarily need in-depth training on how AI models are developed, but they need a broad understanding of what AI is and that it learns from the information fed into it. Relevant examples of how faculty members are already using it in their daily lives should be included, such as library searches, auto-correct tools, and plagiarism detection.

When it comes to deciding what AI tools for students and faculty to use, a cross-section of faculty should be included in the decision-making process. This helps to ensure that tools are chosen based on purpose and ease of use, leading to more efficient time and resources being put into effective AI tool adoption. Faculty can foresee and help navigate issues related to the classroom that administrators might not anticipate.

Addressing Challenging Aspects of AI in Online Learning

There are three significant challenges related to AI and online learning. First, there is concern about students using generative AI to cheat, especially since many assessments in online learning are text-based. Many faculties have raised concerns about students using AI to write papers and cheat on other types of assessments (Cotton et al., 2023; Crawford et al., 2023). Unfortunately, programs developed for detecting AI-generated content tend to be unreliable (Chaka, 2023; Elkhatat et al., 2023; Weber-Wulff et al., 2023). This makes it difficult to prove violations of academic integrity.

Cotton et al. (2023) offer several suggestions for addressing the problem of students using AI to cheat. To prevent cheating, they suggest incorporating assessments that may be less conducive for AI use, such as interactive activities like presentations and group projects. Cotton et al. recommend activities that are designed around critical thinking, such

as creating original ideas. Faculty members may use proctors: for exams and to identify misuse of AI; verify citations and references, which may be missing or falsified; and check for inconsistencies in tone and word use as well as factual errors in general. AI writing may include repetitive and generic writing and typically includes fewer grammar errors observed in student writing.

Another challenge related to AI and online learning is the shiny object syndrome. Just as babies and toddlers may be distracted by shiny objects, shiny object syndrome is a tendency for organizations and leaders to chase after new ideas and technologies, even if they offer minimal or no value or have not been tested as to how well they help to meet objectives (Sroka, n.d.). It is easy to be enticed by the excitement and promises of new technology and implement it without proper assessment and planning. Higher education leaders should have a clear goal and plan for the use of AI tools in meeting strategic goals and outcomes. Before implementing any new tool, the costs and benefits should be evaluated, and it should be tested on a smaller scale to ensure that it meets the organization's needs. This should assist with avoiding wasting time and resources on the implementation of tools that do not serve any measurable purpose or, worse, ultimately work against meeting organizational goals.

A third challenge is that technology changes rapidly. By the time policies and trainings are planned or created to address current technology, there will be something newer with unantici-

pated features and challenges available. Just in the past ten years, AI has gone from not being able to recognize images as well as humans to surpassing humans at some image recognition tasks (Roser, 2022). Moreover, AI can be used to generate images realistic enough to potentially threaten national security (National Security Agency et al., 2023). As we have seen with AI-generated text detection tools, the technology to detect fake images lags behind the advances in the technology that creates them. Such a challenge will likely be an ongoing issue. The best way to try to mitigate it is to be vigilant and follow the development of new technologies closely to have early awareness.

Ways that Faculty May Leverage AI

There are two areas of focus when considering how to leverage AI as a teaching tool. One is how to teach students to use AI in an appropriate and ethical way. The other is how faculty use the tools to help them do their jobs better or more efficiently. Starting with the latter, AI helps with predictive analytics, such as identifying students who are at risk of dropping out (Crompton & Burke, 2023). This can assist faculty members with knowing where to focus outreach to improve retention. AI may be used to automate the outreach to such at-risk students or students who may need more support. AI assistants could answer basic student questions and direct students who do not do well on an assessment to helpful resources to better grasp course con-

cepts. In addition, AI may be used to provide basic personalized feedback on things like writing mechanics, freeing the instructor to focus more on content. AI may streamline faculty members in the processes of writing content and developing assessments for courses.

Regarding student use of AI, the foci need to be on information and data literacy, critical thinking, and academic integrity. Students need to know what tools are available and their limitations. There is a lot of potential for bias in AI (Nguyen et al., 2023). AI tools are only as good as the information used to train them. Not only can AI make decisions based on biased algorithms, but students interacting with AI may develop some of the same biases from the interactions (Leffer, 2023). Students need to learn to recognize when the information is biased or otherwise incorrect and create prompts that are phrased in a way that will return the information they are seeking. For example, it might be beneficial to students to complete assignments where they use AI for searches and/or for generating essays and then evaluate the results for bias and/or inaccuracies.

There is also a risk of students using AI tools to cheat (Cotton et al., 2023; Crawford et al., 2023). Some of this risk may be mitigated by teaching students to use AI ethically. Learners need to know what they may and may not use AI for in accordance with honor codes and institutional policies. For example, it is generally okay to use AI to assist with brainstorming topics, proofreading for mechanical errors, and creating

unique images to use in presentations. It is not okay to use AI to write an assignment for the student or for the student to present that work as their own. Students need to understand where those limits are, and that different classes and programs may set different parameters as to what is acceptable use.

When considering which AI tools to allow in the classroom, faculty should consider how AI can be used as assistive technology to help students with disabilities and/or international students with language barriers (Cullican, 2023; George-Briant & Brown, 2023). Some AI tools help provide individualized support to students with a variety of needs, increasing the opportunities for them to be successful in ways that may have been difficult to address otherwise. For example, AI may assist students with attention deficit hyperactivity disorder organize materials and/or their schedules into manageable chunks or those with expressive disorders find ways to demonstrate their learning.

Addressing Ethical Concerns

AI is built on data and uses data in educational tools. This has raised many ethical questions around the collection, interpretation, privacy, ownership, and use of data (Nguyen et al., 2023). Many of the people tasked with developing AI have expressed concerns and have asked for a moratorium on AI research so that regulations may be developed to ensure responsible use (Clarke, 2023). The U.S. President has worked with

leaders of major AI companies to get their commitment to take steps to ensure safe and ethical development and use of AI (The White House, 2023) and has issued a framework for an AI Bill of Rights (Office of Science & Technology Policy, 2023). UNESCO offered policy guidance on how to use AI ethically and responsibly in education (Miao et al., 2021). However, there are calls for increased regulation of AI and for educational leaders to ensure they are asking the right questions of educational technology companies to ensure that the tools they choose are unbiased and allow for faculty review and overrides (Scanlon, 2023).

The sudden proliferation of ChatGPT and other AI tools over the past year have prompted many universities to prioritize developing policies to prevent student cheating and define ethical uses of AI (Ferguson, 2023). A UNESCO (2023) survey of schools and universities conducted in May 2023 found that only about 13% of universities had developed policies to address the use of AI. Any higher education institution that does not have any policies in place by now should probably expedite that, especially since technology constantly changes. It is recommended that universities create standing committees on educational technology to continuously review advances and their policy implications, as well as be prepared to revise policies and procedures based on new information.

In addition to standing committees to review institutions' adoption and use of technology tools, including AI,

every organization should have a data code of ethics. Many organizations, including educational institutions, have focused on policies around the technical aspects of data collection and management (Edquist et al., 2022; Raffaelli, 2020; Stewart & Lyons, 2021). In general, a data code of ethics should focus on guidance related to answering the following questions (Cote, 2021):

- Who owns the data?
- How is data being collected?
- Why is data being collected and how will data be limited to use for that purpose?
- How will data be analyzed and used?
- How will privacy be protected?
- How long will data be held?

Additionally, the data code of ethics should address how bias and disparate impact will be avoided, as well as the ethical use of algorithms. The European Union's European Commission, Directorate-General for Education, Youth, Sport, and Culture (2022) drafted *Ethical Guidelines on the Use of Artificial Intelligence (AI) and Data in Teaching and Learning for Educators*. This, along with the guidance from UNESCO (Miao et al., 2021) could serve as a starting point for developing a data code of ethics that also addresses AI.

AI Resources

Though AI is not new, recent advances have made it a controversial current topic, so new resources are developing rapidly. Organizations like the Office of Educational Technology (<https://tech.ed.gov/highered/>) and Educause (<https://library.educase.edu/topics/infrastructure-and-research-technologies/artificial-intelligence-ai>) continue to develop resources for educators on implementation of new technology in the classroom. Contact North | Contact Nord in Ontario developed a resource hub for educators about AI in higher education (<https://teachonline.ca/ai-resources>). OpenAI, the company behind ChatGPT, put together an FAQ for educators that includes information on additional resources for faculty to learn about AI (<https://help.openai.com/en/collections/5929286-educator-faq>). Many universities curate resources on their websites for faculty. For example, Brandeis University's resource site, provides a collection of resources from a variety of sources (<https://www.brandeis.edu/teaching/chatgpt-ai/resources.html>). Topics related to AI are increasingly being included in higher education and professional conferences for various disciplines. Unite.ai has news about AI advances, as well as a list of upcoming conferences specifically related to AI (<https://www.unite.ai/conferences/>).

Conclusion

Despite the prevalence of artificial intelligence in everyday use, many in higher education were unprepared for the recent advances in generative AI and are working to catch up with institutional policies, recommendations, and use (UNESCO, 2023). Faculties express concerns about students using AI to cheat while technology to detect this cheating is lagging behind the advances in AI technology (Chaka, 2023; Elkhatat et al., 2023; Weber-Wulff et al., 2023). There are concerns that institutions could fall into the trap of implementing technology because it is new and different without tying the implementation to specific strategic goals (Sroka, n.d.). AI and its use of student, faculty, and institutional data brings unique ethical considerations related to data privacy and ownership in addition to issues of equity and inclusion (Maio et al., 2021).

Despite the challenges and concerns, AI has the potential to be helpful to online education. It can provide tools such as predictive analytics to help identify at-risk students as well as communication tools to help with retaining those students (Crompton & Burke, 2023). AI may help improve faculty productivity by providing initial basic feedback to students on assignments

such as writing mechanics, allowing instructors to focus on providing feedback related to course content. There is great potential for AI to help with equity and inclusivity, particularly for students with disabilities, by providing ways to accommodate for issues that are difficult to accommodate for otherwise (Cullican, 2023; George-Briant & Brown, 2023).

AI technology is advancing rapidly (Roser, 2022). Policy development and research into the implications of advances will likely continue to lag behind the technology. Some of the challenges posed by AI in online education may be mitigated through changes in how students are assessed on their learning by using methods that are more resistant to being generated by AI (Cotton et al., 2023). Faculty comfort levels might be increased through education about AI and inclusion in the decision-making process about acceptable use in the classroom and tools to be implemented by the institution (Weilage & Stumpfegger, 2022). Higher education needs to find a way to expedite research in the use of AI in education and its effect on students and faculty. In the meantime, faculty and administrators need to stay up to date on the advances being made and maintain an ongoing dialogue and attitude of flexibility to adjust policy and practice as needed.

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