GENERATIVE ARTIFICIAL INTELLIGENCE (AI)

WHAT IT IS AND HOW TO WORK WITH IT IN PRACTICE

WHAT IS IT?

"Generative artificial intelligence (AI) refers to a class of machine learning models that can create new data similar to the training data it has been given. These models are capable of identifying patterns and relationships in large datasets, and using that knowledge to generate new data that resembles the original training data." (Definition provided by ChatGPT). Note: this definition of "generative AI" was created by an AI technology as a demonstration of precisely how effective and realistic artificially generated material can be!

WHY IS THIS IMPORTANT?

Although the popular discussion surrounding the use of generative AI tends to focus on the potential for AI tools to make acts of plagiarism and academic misconduct easier, emerging AI technologies can be used as a tool to support pedagogical practices in the classroom and to support student learning. For example, text generators, such as ChatGPT, can generate written content in response to prompts or questions inputted by the users; image generators, such as DALL-E, can generate visuals and other images, such as paintings, drawings, and charts, in response to key terms suggested by the user; and audio generators, such as text-to-speech, can produce spoken content and provide students with a different mode of presentation of course content (which also is beneficial for supporting accessibility).

Given that AI technologies will improve over time in terms of the sophistication of the material they can help produce, and given that these technologies are here to stay, they will invariably shape the work environments our students graduate into. As a result, not only do educators have a responsibility to help prepare students to be informed, critical, and effective users of these tools, but educators can also use these tools in creative ways to help transform the learning experience for students in numerous ways.

HOW CAN INSTRUCTORS IMPLEMENT GENERATIVE AI TECHNOLOGIES IN THEIR TEACHING?

For instructors who are interested in implementing generative AI technologies to support student learning in the classroom, consider the following suggestions:

1. **Incorporate generative AI technologies as teaching strategies.** For instance, instructors can ask ChatGPT a question during lectures and students can work in pairs or small groups to evaluate and assess the generated response. Similarly, you can ask students to come up with their own questions for ChatGPT based the course readings to allow them to engage with the course content more directly.
2. **Use generative AI technologies to assist with curriculum design.** Generative AI technologies such as ChatGPT can aide instructors with designing essay prompts or study questions for exams, creating detailed summaries of key concepts, or creating case studies to give students a chance to apply their understanding of core course content..
3. **Implement generative AI technology to develop students' critical thinking skills.** AI technology is not perfect, and there are occasions where it will provide factually incorrect information, fabricate facts and sources, and speak with authority on a given topic in response to the prompts it receives from the user. To help students to reflect more critically on the information

they are learning, provide ChatGPT with deliberately wrong information about a topic or concept, and have students apply their knowledge of course content to demonstrate the inaccuracies of the AI-generated response.

4. **Use generative AI technology to support accessibility in teaching.** For example, ESL students could use text-to-speech tools, as well as translation tools, to communicate their ideas without limitations and can use ChatGPT to correct the grammar and syntax to help learners learn course content with greater ease. Similarly, generative AI can help instructors with the creation of Alt-Text (alternative text) to make their content more accessible to students with e-readers and other assistive technology devices.
5. **Ensure transparency and promote academic integrity**. In accordance with the York University Senate policy, if you wish to permit the use of generative AI technologies by your students in the classroom or in the partial creation of their assignments, clearly and explicitly communicate this information to them. This can be included in your course syllabus, in your assignment instructions, and instructors/TAs can verbalize these allowances to students in the classroom throughout the semester. If students do not feel comfortable using this technology (e.g. privacy concerns), provide alternatives to ensure that no student is excluded from the course.

ADDITIONAL RESOURCES (Internal)

York University Senate Academic Standards, Curriculum and Pedagogy Committee. (2023). Academic integrity and generative artificial intelligence technology. https://www.yorku.ca/unit/vpacad/academic-integrity/wp-content/uploads/sites/576/2023/02/Academic-Integrity_AI-Technology-Statement.pdf

York University. (2023). AI technology & academic integrity: information and strategies for instructors. https://www.yorku.ca/unit/vpacad/academic-integrity/ai-technology-and-academic-integrity/#leveraging

York University. (2023). AI technology & academic integrity: information for students https://www.yorku.ca/unit/vpacad/academic-integrity/ai-technology-academic-integrity/

York University. (2023). Reminder: using AI tools for your assignments may be considered academic misconduct. https://students.yorku.ca/updates/latest-news/24

York University. (2023). Syllabus statements. https://www.yorku.ca/unit/vpacad/academic-integrity/wp-content/uploads/sites/576/2023/02/SyllabusStatements-2.pdf

ADDITIONAL RESOURCES (External)

Explore in 15-30 Minutes

Cai, W. (2023, February 24). ChatGPT can be a powerful tool for language learning. https://www.universityaffairs.ca/career-advice/career-advice-article/chatgpt-can-be-powerful-tool-for-language-learning/

D'Agostino, S. (2023, January 31). Designing Assignments in the ChatGPT Era. https://www.insidehighered.com/news/2023/01/31/chatgpt-sparks-debate-how-design-student-assignments-now#.Y9jtoaotwec.link

Hemsley, B., Power, E., & Given, F. (2023, January 18). Will AI tech like ChatGpt improve inclusion for people with communication disability? https://theconversation.com/will-ai-tech-like-chatgpt-improve-inclusion-for-people-with-communication-disability-196481

Prochaska, E. (2023, January 23). Embrace the Bot: Designing Writing Assignments in the Face of AI. https://www.facultyfocus.com/articles/course-design-ideas/embrace-the-bot-designing-writing-assignments-in-the-face-of-ai/?st=FFdaily%3Bsc%3DFF230127%3Butm_term%3DFF230127&mailingID=4410

McKnight, L. (2022, October 14). Eight ways to engage with AI writers in higher education. https://www.timeshighereducation.com/campus/eight-ways-engage-ai-writers-higher-education

Explore in 30-60 minutes

E Maple League of Universities. (2023, January 31). *AI and Academia: The End of the Essay?* YouTube. https://www.youtube.com/watch?v=geKsTy8QKhY

Montclair State University (n.d.). Practical responses to ChatGPT. https://www.montclair.edu/faculty-excellence/practical-responses-to-chat-gpt/

Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning & Teaching, 6*(1), 1-22 https://journals.sfu.ca/jalt/index.php/jalt/article/view/689

Explore in 60+ minutes

Atlas, S. (2023). ChatGPT for higher education and professional development: a guide to conversational AI. https://digitalcommons.uri.edu/cba_facpubs/548

Baidoo-Anu, D. & Owusu Ansah, L. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. Available at SSRN: https://ssrn.com/abstract=4337484 or http://dx.doi.org/10.2139/ssrn.4337484

Mollick, E. R. & Mollick, L. (2022). New Modes of Learning Enabled by AI Chatbots: Three Methods and Assignments. Available at SSRN: https://ssrn.com/abstract=4300783 or http://dx.doi.org/10.2139/ssrn.4300783

Would you like to learn more?

Contact us at Teaching Commons for additional resources, handouts, applications, courses, workshops, examples, advice, assistance, one-on-one consulting, and everything else related to teaching and learning. We are happy and eager to assist you!

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