GenAI in your teaching

Centre for Pedagogical Innovation

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Matt Clare, Director,Technology-Enabled Learning

Dr. Ann Gangé, Senior Educational Developer, Accessibility & Inclusion

Gareth, Seymour, Educational Technologist

"**The true threat of AI generated content** is not that it will convince us to believe things that aren't true, it's that we won't believe anything unless it reinforces what we already think is true, or we'll just disengage completely because the truth seems impossible to find."

Eliot Higgins, Bellingcat

Land Acknowledgement

This space is on the traditional territory of the Haudenosaunee and Anishinaabe peoples. It is land covered by the Upper Canada Treaties and within land protected by the Dish With One Spoon Wampum Agreement.

Today this gathering place is home to many First Nations, Métis and Inuit peoples and acknowledging reminds us that our great standard of living is directly related to the resources and friendship of Indigenous people.

Access Check

We encourage you to check, identify, and question your learning environment for any of the following. We welcome comments if there are elements that we can support to reduce barriers.

- Technology
- Space
- Resources
- Pace

Scope and objectives

- Overview of GenAI and how GenAI tools fit into education.

- Prompting considerations and strategies.

- Current opportunities at Brock and hands-on experimentation.

- Implications for your class and Student Learning Outcomes.

- Reconsidering assessment with GenAI.

- Innovations, best practices, nightmares, and experiences.

- Conclusion (the two AIs).

Icebreaker

1. Get on your mobile device or computer.

2. Open a text messenger or create an email to yourself.

3. Take a minute or so to write the history of yesterday using the predictive text on your phone or email.

What do you hope to learn in today's session?
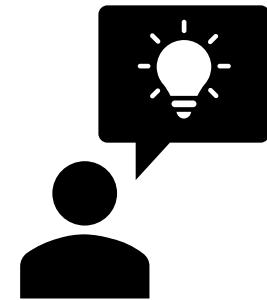
Introduction to Generative AI: How we got here

- 1950s-1970s: Birth of AI.
  - Turing Test: Alan Turing proposed a test to determine if a machine could exhibit intelligent behaviour indistinguishable from a human (The T in CAPTCHA!).
  - Symbolic AI: Early AI research focused on symbolic reasoning and logic-based systems.

- 1980s-1990s: Emergence of Machine Learning.
  - Neural Networks: Algorithms that "learn" from data to find patterns, weigh options, make decisions.
  - Vector Machines: Introduced as a powerful method for classification tasks.

- 2000s-2010s: Big Data and Deep Learning.

Introduction to Generative AI: How we got here

- 2010s–Present: Generative AI.

  - Generative Adversarial Networks (GANs): Introduced in 2014, GANs allow for the creation of realistic images and other data by pitting two neural networks against each other.

  - Transformers: The transformer architecture, introduced in 2017, revolutionized natural language processing (NLP) by enabling models like BERT and GPT to understand and generate human-like text.

  - GPT-3 and Beyond: OpenAI's GPT-3, released in the fall of 2020, demonstrated the power of Large Language Models (LLMs), capable of generating coherent and contextually relevant text.

  - Mass access to find a market and to dominate it.

  - Multi-media generation and recognition.

Introduction to Generative AI

- What is artificial intelligence, machine learning, artificial neural networks, large language models, and diffusion models?

- The GenAI revolution that arrived in the Fall of 2022.
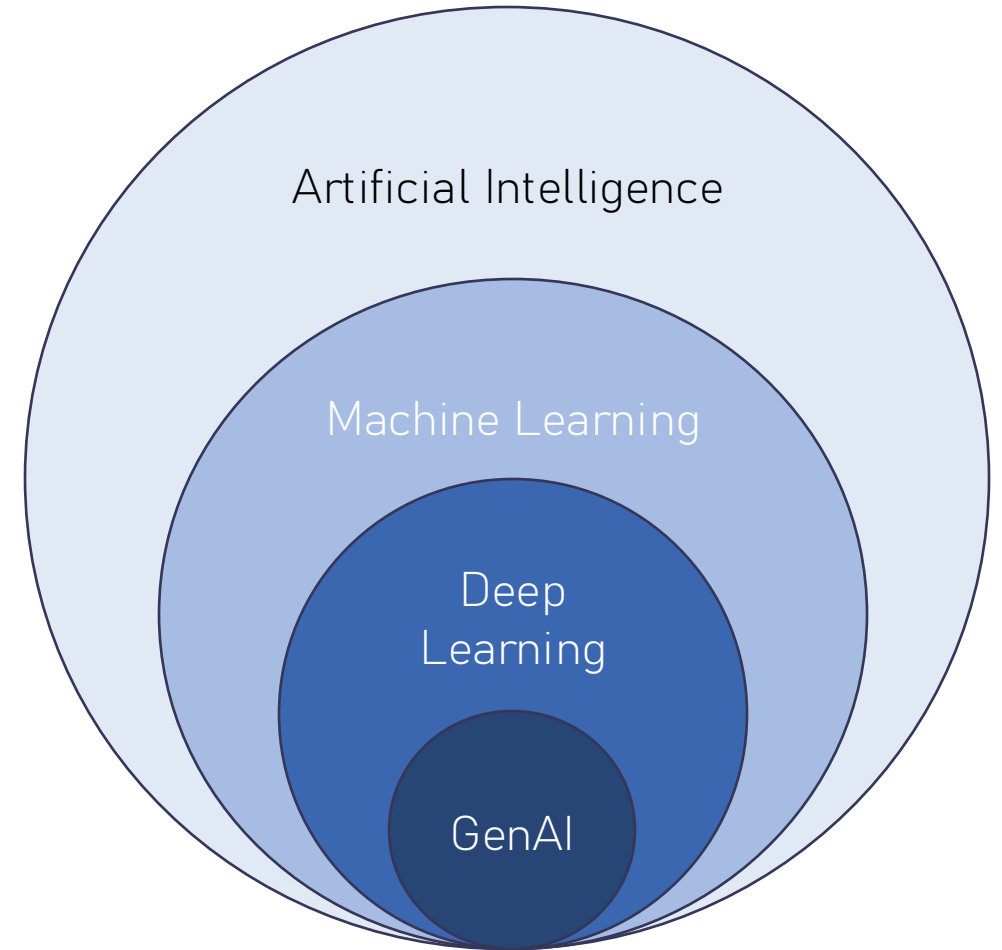
GenAI tools in education

- What is it good for?
  - Self-paced revision, "learning partner", reformatting, multimodal conversion and accessibility, translation.

- Dispelling myths?
  - Research aid.
  - Time-saver.

- Brock policy on software used to assess student work.
  - FHB III 10.4.1 Software.

GenAI in your courses

- What to do when everyone is using it anyway.

  - [CPI has syllabus language](#) on free use, guided use, or restricted use.

- Learning outcomes vs. outcomes of learning.

  - Distinguish genuine education goals from performative.

  - Consider expected workload or friction.

- How might GenAI tools change the way assessments are conducted in your course? Can they complement, rather than replace, traditional methods?

- In the long term, how might the widespread use of GenAI tools impact the skills students need and the nature of future assessments?

Prompting, Equity, and Ethics

- What does it mean to approach tools with equity?

- Understanding the inequities of the user experience (UX).
  - Sensory experiences.
  - Neurodivergent experiences.

- Consider with what data the model was trained (and any inherent biases) and the bias of the trainers.

- Data privacy and ethical use of data.
  - Bring GenAI to your data, not your data to GenAI.
  - Use pseudonyms, ask for methods and instructions, compare its results to your results.

GenAI opportunities at Brock

- Microsoft Copilot
    - Enterprise data protection in Microsoft 365 Copilot and Microsoft Copilot.
        - Brock has access to "Copilot" chat, *not* "Microsoft 365 Copilot".

- Contact North's "AI Pro" series
    - Contact North/Contact Nord is an Ontario Government agency whose services have been reviewed by Brock's Privacy Office and IT Infrastructure review:
        - AI Teaching Assistant Pro
        - AI Tutor Pro

Exercise: Hands-on with GenAI tools

1. Spend 5 minutes testing and exploring the features of AI Tutor Pro, AI Teaching Assistant Pro, and Copilot (or a tool of your choosing).

2. Prompt it with a big picture question in your field or something thematic in a course you teach. Consider a student's approach to prompting for one of your assignments (or have a look at a prompt library).

3. Share one key takeaway or idea with regard to how the tool might alter (or fit into) your course planning. Consider the specific ways the tool could support student engagement, assignment design, or any efficiency.

Reflection: GenAI tools in your class

Understanding and anticipating capabilities and limitations

- o What controls are in place to identify or reduce the likelihood of hallucinations?
- o Are responses accompanied by links to reliable sources to verify the information?
- o Does the tool include an easy way to share the prompt/chat/text history?

Identifying bias in output

- o What steps have been or are being taken to identify and mitigate biases?
- o How are fair and unbiased outputs supported?
- o How can users report instances of bias if they encounter them in responses?

Classroom implications and critical reflection on Student Learning Outcomes

What are some areas of alignment between GenAI capabilities and your assessment objectives?

What are some areas related to assessments and objectives that you would like to explore further?

Do the basics better: reconsidering assessment with GenAI

Do you think the use of GenAI is aligned with and not opposed to the learning goals of the assignment?

- Consider a traditional essay and its assessment.

Is the problem with the assignment or how the assignment is graded? Can it be graded with more intent?

Discussion: Engaging students through assessment design with GenAI

- What are some effective techniques or innovative assessment methods you've used (or heard/dreamt about)?

- How have you tried to direct student GenAI use to promote your learning outcomes?

- How have you been facilitating GenAI-focused conversations...
  - at the beginning of a course?
  - in assignment instructions?
  - when concerns around GenAI use arise?

Conclusion

- Contextualized the GenAI revolution.

- Discussed myths and opportunities around GenAI tools in education.

- Promoted equitable prompting and ethical approaches to use.

- Clarified drawbacks, limitations, and output bias.

- Reflected on the impact on student learning and potential adjustments to Student Learning Outcomes.

What `resources` do you feel you need to make informed decisions about GenAI and pedagogical use?

CPI's Guidance on Generative AI

- brocku.ca/pedagogical-innovation/resources/guidance-on-chatgpt-and-generative-ai/

CPI's Suggested Syllabus Language for Generative AI

- brocku.ca/pedagogical-innovation/syllabus-template/#1724944148766-9fa36b1c-2b3a

Concerns around academic integrity and handling improper GenAI use

- Ana Cassamali, Academic Integrity Manager – acassamali@brocku.ca

Marktoonist @ https://marketoonist.com/2023/03/ai-written-ai-read.html

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Resources, tools, and guides

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Academic Integrity Resources

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Upcoming Brock Events

- Digital Scholarship Lab's *Introduction to AI Tools* https://experiencebu.brocku.ca/event/280937

- *Department of Computer Science's Annual AI-Day (Fall of 2025)* https://research.cosc.brocku.ca/AIDay/home