



# PART-TIME TEACHERS' CONFERENCE

## Assessing with UDL in an AI- Powered World

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# Learning Outcomes

01

Identify challenges associated with AI in teaching and learning.

02

Discuss opportunities that AI can present for teaching and learning.

03

Explain how to transform assessment to adapt to an AI-powered world.

# Context and Terms

- **Artificial Intelligence (AI)** is here now, and here to stay.
- **Large Language Models (LLM)** digest massive quantities of text data scraped from the Internet and infer relationships between words within the text (Ruby, 2023).
  - E.g., **ChatGPT** is trained to predict regularities in text while also weighing the entire sequence of words in the response at the same time. Through trial and error (and human feedback), it learned how to generate the most likely responses in the appropriate tone and context (Lametti, 2023).
- Meanwhile, **Universal Design for Learning (UDL)** tells us we need to offer learners choice in assessment, and more.

# How Do LLMs Work?

ChatGPT builds sentences word by word, but refers to the whole context (as set by the prompt) to immediately make corrections.

*Write a story about a boy playing by the river.*

- He threw the rock over the river and it hit the bank.
- He threw the rock over the river and it hit the **bank** and broke a window.
- He threw the rock over the **river** and it hit the bank with a thud.

(Lametti, 2023)



I am giving a conference talk about how to assess college students with artificial intelligence tools. What should the title of my talk be?



Here are some possible title options for your conference talk:



1. "Revolutionizing Assessment: Using AI Tools to Evaluate College Students"
2. "The Future of Evaluation: Incorporating Artificial Intelligence into College Assessments"
3. "AI-Driven Assessment: A Promising Solution for Higher Education"
4. "Assessing College Students with AI: Opportunities, Challenges, and Best Practices"
5. "Transforming Higher Education: Leveraging AI for More Accurate and Efficient Student Assessment"



Thank-you



You're welcome! Good luck with your conference talk!





# What LLMs Can't Do (Yet)

- × think critically
- × innovate or research
- × reflect
- × empathize or intuit
- × factcheck
- × fix its own mistakes (without more input)
- × synthesize information from different sources
- × cite correctly
- × deconstruct or avoid bias

# Challenges Associated with LLMs



- Plagiarism or fraudulent use
  - Unethical research practices
  - Bias, limitations, inaccuracy, and misinformation
  - Students missing out on learning opportunities
  - Inaccurate or ineffective evaluation of student work
- ...and more

(Mucharaz y Cano, et. al, 2023)

# Temperature Check

- How do you feel about AI in the context of teaching and learning?



excited  
intrigued  
curious  
innovative




angry  
annoyed  
frustrated  
fearful  
worried  
concerned



unsure



# How Can We Ensure Our Assessments Work?



## **Ban or Restrict AI Use**

- Policy: forbid AI use
- Technology: block access to AI tools
- Awareness: integrity training
- Enforcement: AI checkers

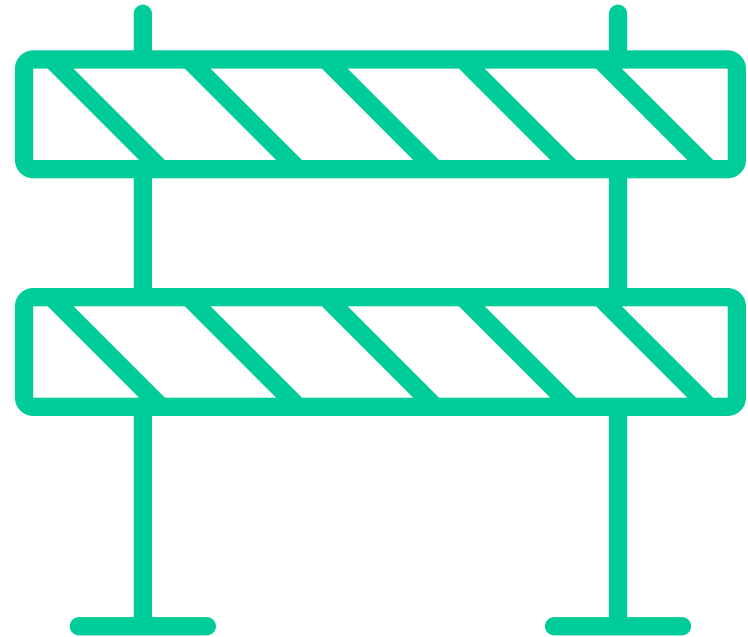
## **Change Assessments**

- Multiple stages of submissions
- Smaller amounts of work with less time constraints
- Alternative assessment types
- Return to in-person, paper exams

# The Response to ChatGPT

- Los Angeles blocked access to OpenAI's website.
- School districts from Washington, New York, Alabama and Virginia in the US, to Queensland and New South Wales in Australia, banned it.
- Several leading universities in the UK warned students against using it.

(Heaven, 2023)

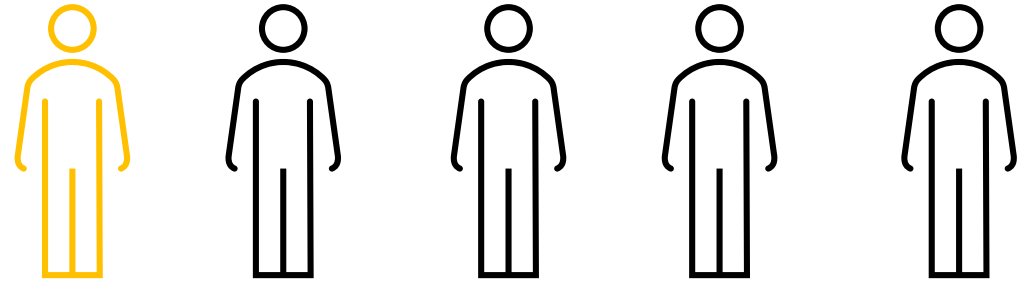


# AI is here...to stay

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- 43% of college students have experience using AI tools.
- 1 in 5 college students *admit* they employ AI to complete their schoolwork.
- 61% believe AI tools will become the new normal.

(Nietzel, 2023)



The real numbers might be much higher. Let's hear from **Dr. Karyn Olsen** about her recent teaching experience...

# The Meteoric Rise of ChatGPT

	November 2022	March 2023
<b>Bar Exam</b>	10 <sup>th</sup> percentile	90 <sup>th</sup> percentile
<b>GRE (Verbal)</b>	63 <sup>rd</sup> percentile	99 <sup>th</sup> percentile
<b>SAT (Reading &amp; Writing)</b>	87 <sup>th</sup> percentile	93 <sup>rd</sup> percentile

# AI... the next spell check?

- Brett Reynolds (Humber College) argues that we've seen paradigm-shifting technologies rock the academic world before.
- Consider how we responded to spell check.

# A Better Way?

If ChatGPT makes it easy to cheat on an assignment, teachers should throw out the assignment rather than ban the chatbot. (Helen Crompton)

“AI is going to change education, not destroy it.”  
(Will Heaven)

“Did ChatGPT kill assessments? They were probably already dead, and they’ve been in zombie mode for a long time. What ChatGPT did was call us out on that.” (Richard Culatta)

“This is something that exists, so let’s use this as a tool rather than something...to be afraid of” (Olivia Bene)

# Remember Universal Design for Learning

- How humans learn best, based on neurology
- We know more about how we learn than ever before
- Optimal assessment offers...
  - ✓ Choice
  - ✓ Flexibility
  - ✓ Authenticity
  - ✓ Accessibility



(UDL Principle of Action & Expression)



# The Ideal Path Forward Will...

- ✓ align with UDL Principle of Action & Expression
- ✓ recognize that AI has already changed, and is still changing, the world we live in (i.e., new skillsets)
- ✓ leverage LLMs as a tool to help humans
- ✓ train learners to use LLMs in productive, ethical ways
- ✓ shift the instructor role from gatekeeper to facilitator of learning
- ✓ involve learners in setting the new “rules”



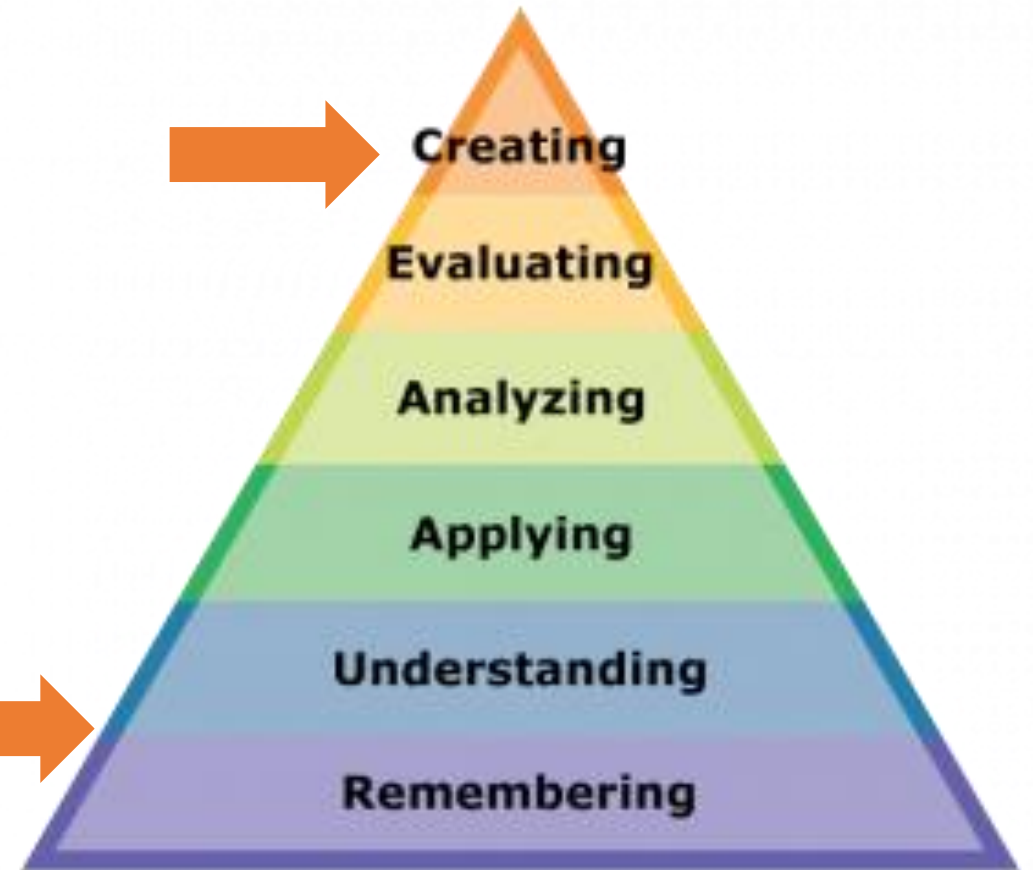
# The Ideal Path Forward Will Not...



- × compromise on what we know about learning and assessment in order to resist the use of AI in education
- × fight a losing battle against AI use in practice
- × require students to use AI tools for assessment

# Connect to Bloom's...

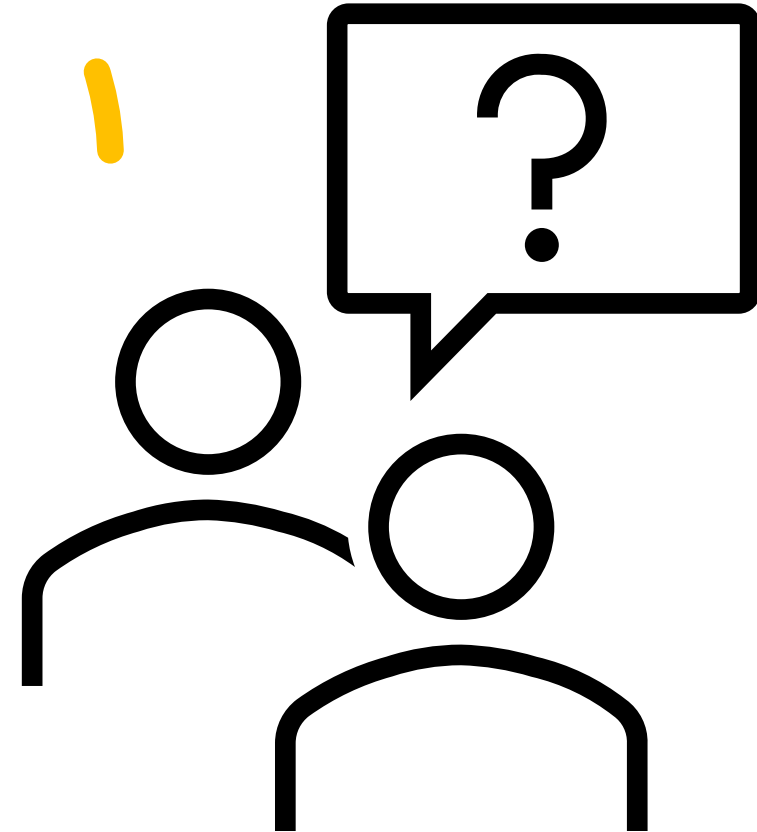
- Where is AI right now?
- Look at the gaps to see where we can refocus assessment:
  - Practice critical analysis
  - Develop information literacy skills (i.e., through fact checking and assessing credibility)
  - Assess knowledge and patterns of thinking



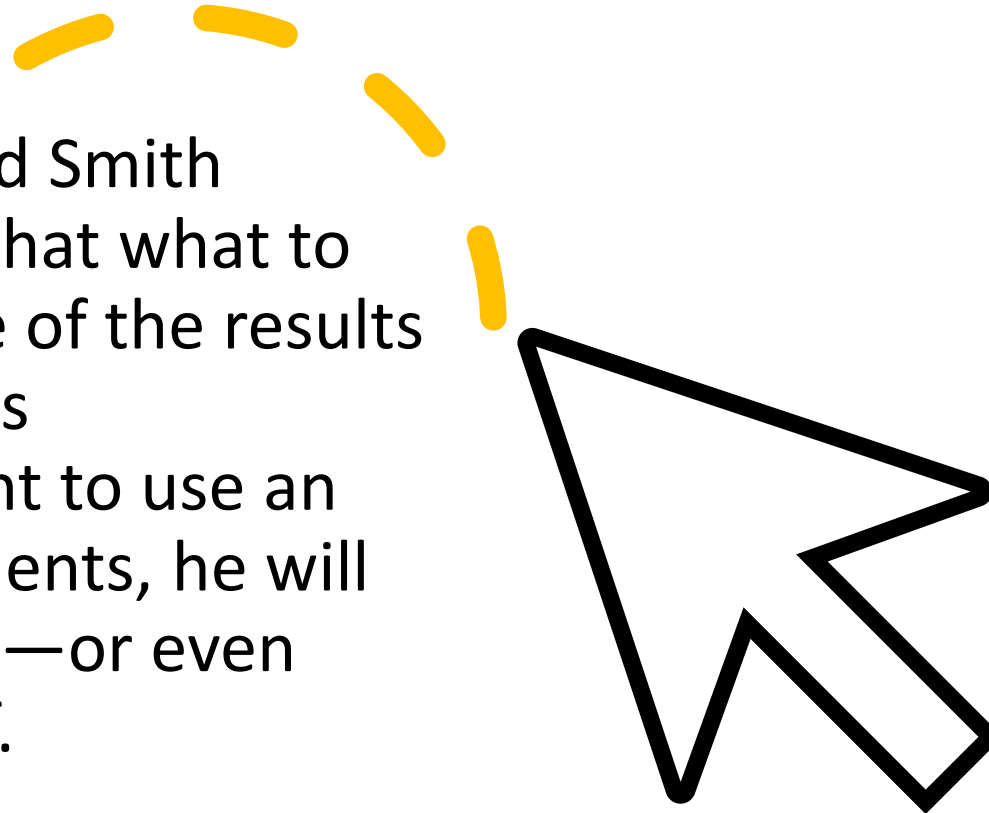
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# What is Prompt Engineering?

- The process of designing and creating effective prompts or questions as part of an assessment or learning activity.
- The goal is to create prompts that are clear, specific, well-defined, concise, and aligned with the learning objectives of the activity.
- Asking the right question requires understanding, application, and analysis (predictive thinking).



- Professor of bioscience David Smith (Sheffield Hallam U) knows that what to search for and what to make of the results is a skill worth teaching. If his undergraduate students want to use an LLM in their written assignments, he will assess the prompt as well as—or even rather than—the essay itself.
- “Knowing the words to use in a prompt and then understanding the output that comes back is important...We need to teach how to do that.”



# Paradigm Shift

- What educators must do now is show learners not only how to find it, but what information to trust and what not to, and how to tell the difference.
- Educators are no longer gatekeepers of information, but facilitators.
- Instructors are finding opportunities for sparking productive discussion in the misinformation and bias that large language models often produce.

# Avoiding Pain Points

Educational Developer Emily Donahoe (U of Mississippi) thinks:

- ChatGPT could help teachers shift away from an excessive focus on final results.
- Getting a class to engage with AI and think critically about what it generates could make teaching feel more human “rather than asking students to write and perform like robots.”
- Using ChatGPT to generate a first draft helps some students stop worrying about the blank page and instead focus on critical learning: AI “can help you move beyond particular pain points when those pain points aren’t necessarily part of the learning goals of the assignment.”

# AI as Assistive Technology

- helps ELLs overcome language barriers
- helps learners with word retrieval and other literacy-related disabilities speed up the writing process
- allows learners with cognitive issues ask AI to reframe learning in new ways
- allows learners with low SES access AI tutoring for free
- allows all learners to customize their learning

# LLMs can...

- Deepen students' understanding of the nuance of academic integrity
- Build understanding of the limitations of LLMs today
- Facilitate initial ideation
- Circumvent writer's block
- Provide a tool for improving spelling, grammar, and voice
- Close the “awarding gap” (Fido & Wallace, 2023)
- Prepare learners for an AI-powered world!



# AI-Powered Assessment Looks Like...

- Develop a prompt to ask an LLM to teach you relativity. Present your prompt and result, and the class will vote on the most effective prompt.
- Generate a marathon training plan for a first-time marathoner with a goal pace of 4.5hrs. Critique, adjust it, and defend your choices.
- Produce three paragraphs on the importance of biodiversity. Group students and have them check and compare their LLM-generated answers.
- Ask a LLM tool to write an advertisement for two different audiences (e.g., male/female-identifying audiences) for a product developed by the students: critique, compare, and improve.
- Create code for a specific function. Run it. Identify mistakes and improve it.
- Use a rubric to grade an AI-written essay on the topic of light and dark imagery in *Romeo and Juliet*.

- Write a 1-hour lesson plan that uses active learning to teach the parts of a human cell. Critique and revise, included rationale for your choices.
- Write 10 multiple-choice quiz questions on the history of Indigenous law in Canada. Choose the correct answers. Verify your answer using class-based resources. Critique generated options for accuracy.
- Teach ChatGPT the anatomy of the human hand. Document your statements and the questions it asks you. What patterns do you notice in how you describe anatomy or gaps that it prompts you to address? At the end of your interaction, review your class notes to see if there were inaccuracies or missing information, as well as the tone of your interaction.
- Review an AI-generated literature review paper on the topic of informal music learning applications in Canadian elementary classrooms written in APA. Is the citation style correct? Is the content accurate? How does/doesn't it reflect the qualities of a good literature review?

(Adapted from Horsley & Ryan, 2023)

# Reflect

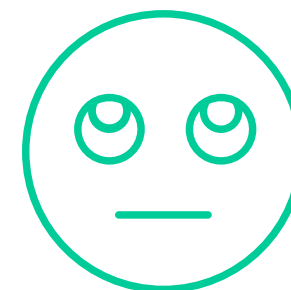
- Have your feelings changed surrounding AI in the context of teaching and learning? Why, or why not?



excited  
intrigued  
curious  
innovative



angry  
annoyed  
frustrated  
fearful  
worried  
concerned



unsure

# Thank You

I'm always happy to connect with colleagues. Reach out or share any AI-related resources at [amanda.baker@humber.ca](mailto:amanda.baker@humber.ca).



# References

- Fido, D. & Wallace, L. (2023). [The Unique Role of ChatGPT in Closing the Awarding Gap](#), *Interdisciplinary Journal of Student Success*.
- Heaven, W. (2023). [ChatGPT is going to change education, not destroy it](#), *MIT Technology Review*.
- Horsley, S. & Ryan, C. (2023). “Chat GPT: New Technology (Some Familiar Teaching and Learning Approaches.” Centre for Teaching and Learning, Western University.
- Lametti, D. (2023, January 31). [AI and Academia: The End of the Essay?](#) [Video]. YouTube.
- Mucharraz y Cano, Y., Venuti, F., & Herrera Martinez, R. (2023, February 1). [Harvard Business Publishing education](#).
- Nietzel, M. T. (2023). [More Than Half Of College Students Believe Using ChatGPT To Complete Assignments Is Cheating](#). *Forbes*.
- Reynolds, B. (2023, April 13). Interview.
- Ruby, M. (2023, January 31). [How ChatGPT works: The models behind the bot](#). *Medium*.
- York University - Office of the VP Academic. (2023, February 2). [AI technology and academic integrity](#). Academic Integrity.