Territorial Acknowledgement

We recognize that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region.

Photo credit: City of Toronto
It’s OK to share…
Please tag me: Sarah Elaine Eaton
Twitter: @DrSarahEaton
The slides for today’s presentation will be publicly available after the session.
I used some AI tools to help me prepare for today’s keynote (e.g., Adobe Firefly and Goblin)

Our students are already using these tools and many more....
Directories of AI Tools

• Move over ChatGPT… There are thousands of tools now available.

• One directory I like: Futurepedia - https://www.futurepedia.io/

• As of May 21, 2023 this directory had 2794 apps listed
Prompt: Prepare a keynote presentation on for the Open/Technology in Education, Society, and Scholarship Association (OTESSA) Conference on the topic of academic integrity in the age of artificial intelligence.
<table>
<thead>
<tr>
<th>Goblin Output</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conduct Research</strong></td>
</tr>
<tr>
<td>• conduct research on academic integrity in the age of artificial intelligence</td>
</tr>
<tr>
<td><strong>Determine key points</strong></td>
</tr>
<tr>
<td>• determine the key points to be covered in the keynote presentation</td>
</tr>
<tr>
<td><strong>Create outline</strong></td>
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<tr>
<td>• create an outline for the presentation</td>
</tr>
<tr>
<td><strong>Design slides</strong></td>
</tr>
<tr>
<td>• design slides and visuals to support the presentation</td>
</tr>
<tr>
<td><strong>Practice</strong></td>
</tr>
<tr>
<td>• practice delivering the presentation to ensure fluency and timing</td>
</tr>
<tr>
<td><strong>Travel</strong></td>
</tr>
<tr>
<td>• travel to the OTESSA conference location (if necessary)</td>
</tr>
<tr>
<td><strong>Deliver</strong></td>
</tr>
<tr>
<td>• deliver the keynote presentation at the conference</td>
</tr>
<tr>
<td><strong>Engage with others</strong></td>
</tr>
<tr>
<td>• engage in follow-up discussions with conference attendees.</td>
</tr>
</tbody>
</table>
What is Academic Integrity?

There are no universal definitions of academic integrity or actions often considered to be academic misconduct (e.g., plagiarism).
Handbook of Academic Integrity (2nd ed.)

- 2nd edition is currently in production.
- Major Reference Work (MRW)
- 112 chapters, 109 of which are new
## Academic Integrity: U.S.-Based Schools of Thought

Eaton & Fishman, Forthcoming

<table>
<thead>
<tr>
<th>School of thought</th>
<th>Examples of notable US-based contributions to academic integrity scholarship (an incomplete list)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Values and Morality</strong></td>
<td>Bertram Gallant (2008); McCabe (1992, 2005), McCabe et al. (2006); Rettinger (2006)</td>
</tr>
<tr>
<td></td>
<td>(Scholars closely associated with ICAI.)</td>
</tr>
<tr>
<td></td>
<td>(Scholars specializing in writing and composition.)</td>
</tr>
</tbody>
</table>
Foundations: Academic Integrity Continuum

Eaton, Pethrick, & Turner (2023)

Academic integrity breach:
Investigation, case management, hearing(s), sanction(s), appeal(s)

Academic integrity: Education, skill-building and communication of expectations

Critical incident and associated grey area: Identification of alleged or actual breach and initial steps
Comprehensive Academic Integrity

From the Introduction to the *Handbook of Academic Integrity* (2nd ed.) (Forthcoming)
How My Interest in All this Started…
Artificial Intelligence & Academic Integrity
The Ethics of Teaching and Learning with Algorithmic Writing Technologies
Project website: https://osf.io/4cnvp/
Key Terms

Artificial Intelligence

- “Computing systems that are able to engage in human-like processes such as learning, adapting, synthesizing, self-correction and use of data for complex processing tasks” (Popenici & Kerr, 2017, p. 2)

Algorithmic text-generating software

- Writing technologies capable of creating original texts either from scratch or with user input (Dans, 2019)
Gaps in Research

Little scholarship addressing AI tools’ ethical and pedagogical implications (Zawacki-Richter et al., 2019).

More research is needed to differentiate human and AI capabilities (Bearman & Luckin, 2020; Mindzak, 2020; Popenici & Kerr, 2017; Zawacki-Richter et al., 2019).

Lack of clarity in differentiating students’ seeking to cheat from those trying to find assistance (Dawson, 2020).

Need to explore how new AI tools will challenge educators (Eaton et al., 2021) and raise new questions about ethics, justice, and fairness.
Research Question

What are the ethical implications of artificial intelligence technologies for teaching, learning, and assessment?
Research Design

• Part 1: Modified Turing Test
  • Participants to identify if sample of writing is by Human Being, Computer/AI, or unsure
  • Write samples from a variety of disciplines (ranging from Education to Engineering)
  • Building on survey designed by Mindzak & Kumar
  • Participant demographic information includes questions about identities' impact on English reading and writing skills.

• Part 2: Interviews
  • Participants ask about AI awareness, Perceived Ethical Uses of AI, AI Roles in support equity and access, and perspective on human generated text.
Data Collection is Underway!

You can take our survey!
https://survey.ucalgary.ca/jfe/form/SV_6fbLA26B1RMRtpY

This study is funded by a University of Calgary Teaching and Learning Grant. This study has been approved by the Conjoint Faculties Research Ethics Board at the University of Calgary (REB22-0137).
Expected Impacts and Outcomes

Promote a deeper understanding of what text-generating software can do

Academic staff and teaching assistants can apply this understanding in the context of intended learning outcomes.

Support faculty to reflect on their assumptions about AI tools

Some assumptions might lead to restricting the technology

Help educators better focus their learning outcomes

Mechanics of writing versus conceptual organization
ChatGPT is like Kleenex

Since November 2022, we’ve come to use the word “ChatGPT” like we use the word “Kleenex”.

ChatGPT a product name that has become synonymous with artificial intelligence tools.
A Brief (and Oversimplified) History of Generative Pre-trained Transformer (GPT) Models

- **2017**: Transformers introduced
- **2018**: OpenAI released GPT
- **2019**: GPT-2 released
- **2020**: GPT-3 released
- **November 2022**: ChatGPT (GPT 3.5)
- **March 2023**: GPT-4

Batorsky, 2020; Brown et al., 2020; Shree, 2020
Precursor to GPT: Predictive Text

The predictive text tools that have become embedded into everyday technologies such as instant messaging apps and word processing programs were originally designed in the 1980s to help persons with disabilities. (Swiffin et al., 1987)
AI through the lens of Equity, Diversity, and Inclusion (EDI)

Benefits offered for EDI

- NLP development has increase accessibility to learning tool, such as text summarization and real-time captioning (Martínez, 2021).
- AI tools provide multiple modes of engagement, representation, and expression (Delisio & Butaki, 2019).

Drawbacks created for EDI

- NLP and other AI tools and created using unrepresentative data sets, resulting in bias or poor user experience (Smith and Smith 2021)
- NLP reproduces biases in language (Al Amin & Kabir, 2022)
• Range of Responses

• Excited
• Inspired
• Unsure
• Afraid
• Angry
• Repulsed
The Sisyphean Cycle of Technology Panics

“Technology panics—times in which the general population is gripped by intense worry and concern about a certain technology—are influential and reoccurring. Current worries about new technologies are surprisingly similar to concerns about technologies that have preoccupied parents and policymakers in the past but are met with amusement today.”

(Orben, 2020, p. 1144)
Past Technologies that Created Societal Panic:

- **1940s**
  - Radio

- **1950s**
  - Television

- **1990s**
  - Internet
There is no empirical evidence to support the idea that technology alone is responsible for academic misconduct (or any other kind of misconduct, for that matter).
Let’s go back to where it all started...
6 Tenets of Postplagiarism: Writing in the Age of Artificial Intelligence

Sarah Elaine Eaton

In Plagiarism in Higher Education: Tackling Tough Topics in Academic Integrity (2021) I introduced the idea of life in a postplagiarism world. Here, I expand on those ideas.

Hybrid Human–AI Writing Will Become Normal

Hybrid writing, co-created by human and artificial intelligence together is becoming prevalent. Soon it will be the norm. Trying to determine where the human ends and where the artificial intelligence begins is pointless and futile.

Human Creativity is Enhanced

Human creativity is enhanced, not threatened by artificial intelligence. Humans can be inspired and inspire others. Humans may even be inspired by artificial intelligence, but our ability to imagine, inspire, and create remains boundless and inexhaustible.

Language Barriers Disappear

One’s first language will begin to matter less and less as tools become available for humans to understand each other in countless languages.

Humans can Relinquish Control, but not Responsibility

Humans can retain control over what they write, but they can also relinquish control to artificial intelligence tools if they choose. Although humans can relinquish control, they do not relinquish responsibility for what is written. Humans can – and must – remain accountable for fact-checking, verification procedures, and truth-telling. Humans are also responsible for how AI-tools are developed.

Attribution Remains Important

It always has been, and always will be, appropriate and desirable to appreciate, admire, and respect our teachers, mentors, and guides. Humans learn in community with one another, even when they are learning alone. Citing, referencing, and attribution remain important skills.

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24 February, 2023
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Let’s talk about confabulation…

What is confabulation?

“In human psychology, a ‘confabulation’ occurs when someone's memory has a gap and the brain convincingly fills in the rest without intending to deceive others. ChatGPT does not work like the human brain, but the term ‘confabulation’ arguably serves as a....metaphor because there's a creative gap-filling principle at work.” (Edwards, 2023)
A Big Question

What is the overlap between “confabulation” (neutral) and “fabrication” (misconduct)?
What Does All this Mean for Academic Integrity?
Citing? Referencing?

(Right now, no one has all the answers.)
Teachers and students figure out how to use the new tech for teaching, learning, cheating, and more.

More tech is developed to catch students using technology to violate academic integrity. Often marketed as a solution to academic misconduct.

Excitement, confusion, eagerness, resistance, worry, and other reactions.

Students find hacks and share ideas about how to beat the anti-cheating technology.

Academic Integrity Arms Race

Infographic designed by
Sarah Elaine Eaton
May, 2023
Ethical Principles for Detecting AI-Generated Text in Student Work
Sarah Elaine Eaton, PhD

I am not a fan of using detection tools to try to identify text generated by artificial intelligence apps in student work, but if you are going to use them, here are some guidelines to do so ethically and transparently. Covert or deceptive use of any kind of detection tools is antithetical to assessing student work with integrity. If we expect students to act with integrity, then educators must model ethical behaviour themselves.

Policy Check
Before you use any detection apps check to ensure their use is permitted by your institution.

Departmental Check
Check with your department head or supervisor to ensure that they have no objections to the use of detection tools for student assessment.

Course Syllabus
Declare the use of any detection tools in writing in your course outline. Know that having a statement in your course outline does not replace the need for open conversations with students.

Talk to Students
Have open and honest conversations with students about how you plan to use detection tools. Do this before using the tools, so students are not surprised. Be upfront and clear.
Assignments Must Be Fit For Purpose

Assessments should align with course outcomes, program goals, workforce needs, and societal expectations.
Let’s Continue the Conversation

Don’t Fear the Robot
Future Authentic Assessment and Generative Artificial Intelligence

June 8, 2023 - Hybrid event
5:30 p.m. Mountain time
https://werklund.ucalgary.ca/dont-fear-robot

Phillip (Phill) Dawson

Sponsors:
Social Sciences and Humanities Research Council of Canada (SSHRC)
University of Calgary Teaching and Learning Grant
University of Calgary International Partnership Workshop Grant
Werklund School of Education, University of Calgary
Resources

AI Apps used in the preparation of this presentation:

• ChatGPT - https://openai.com/blog/chatgpt
• Adobe Firefly - https://firefly.adobe.com/
• Goblin - https://goblin.tools/
References and Works Consulted


