Generative Artificial Intelligence (AI)

Post-Secondary Educator's Resource

Generative AI is a type of artificial intelligence technology, including but not limited to text, images, audio, and video, that generates content and artifacts based on patterns learned from a large amount of data and unique inputs from text prompts. Generative AI copilots are AI-powered assistants that assist users with various tasks that are specific to the platform they operate within.

Generative AI presents opportunities and challenges for post-secondary institutions. Therefore, it is important to implement policies and procedures that include guidelines, regulations, and academic considerations when using generative AI in academic and administrative settings.

Generative AI Training & Awareness

Various education training resources and courses are available for educators unfamiliar with generative AI. These include, but are not limited to, the following:

1. [Empower educators to explore the potential of artificial intelligence](): This is a free online course from Microsoft Learn that introduces essential AI concepts, techniques, and tools, highlighting practical applications in education.
2. [Learn generative AI online](): This is a collection of online courses and certificates from Coursera that cover various aspects of generative AI, such as deep learning, natural language processing, and creativity.
3. [Teaching with AI:]() A guide for educators from Open AI, which includes suggested prompts, an explanation of how ChatGPT works and its limitations, the efficacy of AI detectors, and academic considerations.
4. [Teaching AI Ethics: Copyright](): A guide for educators that addresses bias, environment, truth, copyright, privacy, datafication, affect recognition, human labour, and power.
5. [UNESCO Guide | ChatGPT and Artificial Intelligence in Higher Education: Quick Start Guide](): A guide that explains how generative AI works and the ethical implications of generative AI in higher education.
6. [Guidebook: Designing an Alternative Assessment Where Learners Use GenAI:]() A step-by-step guide that provides instructions, discussion questions, and resources for educators.
7. [Generative Artificial Intelligence for Education and Pedagogy](): A framework for integrating generative AI within education, including examples for different disciplines.
8. [Government of Canada | Guide on the Use of Generative AI](): An overview guide that includes challenges, concerns, and recommended approaches.

Generative AI Platforms & Tools

Generative AI tools can help educators with various tasks, including creating and organizing course materials, personalizing learning experiences, and generating educational context. However, generative AI tools can perpetuate biases and overlook Indigenous perspectives. Therefore, it is important to recognize the limitations of generative AI content, critically evaluate any generated educational materials, and consider academic use considerations, including data, privacy, and security standards. The following generative AI platforms have been created for educators:

1. MagicSchool.ai: This is an AI-powered educational platform designed to help educators save time by automating tasks and generating lesson plans, rubrics, and email responses. The platform also includes various summarizing, real-world connections, translation, and analysis tools.
2. Eduaide.ai: This is an AI-powered teaching assistant designed to help educators with lesson planning, instructional design, and generating educational content.
3. Diffit: This AI-powered platform customizes learning materials for different learning levels and styles. Educators can create new content, adapt online resources, and differentiate current resources.

As generative AI advances, more specialized platforms and tools will emerge. Currently, the following tools are available, with some already integrated into labour markets and more in development:

Chat & Writing	Image & Video	Developing & Coding
– ChatGPT 3.5 and 4	– Canva Magic Write	– Azure OpenAI
– GrammarlyGO	– Dall-E	– Google Vertex
– Microsoft Bing Chat	– Firefly by Adobe	– Tabnine
– Google Bard	– Midjourney	– AlphaCode
– Perpexity.ai	– Microsoft Designer	– GitHub
– Wordtune	– Playform	– DuetAI
– Scribe	– Craiyon	

Generative AI for Teaching & Learning

Generative AI may change how educators assess students by making traditional assessment forms, such as multiple choice and true and false, less effective and reliable. Therefore, educators may need to include more problem-solving and critical thinking assessments that require students to show process and reasoning rather than memorizing or selecting the correct answer. This can help students develop cognitive skills, such as analysis, synthesis, evaluation, and problem-solving, and help educators assess students' understanding of the learning outcomes more effectively. Some examples of how students can show process within assessments are:

– Completing project- or problem-based assessments and writing essays, reports, or reflections demonstrating students' ability to research, organize, and communicate their ideas, perspectives, and experiences.
– Solving mathematical or scientific problems that involve multiple steps, formulas, or concepts and showing how they determine the solution.
– Creating projects, concept maps, portfolios, or artifacts showcasing students' skills, knowledge, or interests.
– Participating in presentations, discussions, debates, simulations, or case studies that require students to express their opinions, perspectives, or solutions.
– Designing experiments, surveys, or investigations that require students to formulate hypotheses, collect and analyze data, and draw conclusions.

Educators can utilize the 10 Guidelines for Assessment Practice in a GenAI Environment, which highlights the importance of learning emerging technologies, discussing amongst colleagues, designing assessments, explaining expectations, emphasizing process, equipping students with skills and knowledge, reassurance, following up, protecting copyright, and reflecting and planning.

Generative AI tools for assessment have various guides that depend on institutional policies and procedures. For formative assessments, educators must communicate to students that generative AI technologies are being used to generate grades and feedback within the course syllabus. However, all generated information must be reviewed by educators to ensure its validity and fairness. For summative assessments, educators cannot use any generative AI technologies to determine grades or feedback. Educators are responsible for grading all assessments directly linked to students' final course grades and ensuring that grades and feedback are accurate, valid, and meet institutional quality standards (Teaching@Sydney, 2023).

Generative AI & Indigenous Data and Knowledge

When utilizing generative AI, it is critical to recognize and respect Indigenous data, Traditional Knowledge, and intellectual property. This includes the [Ownership Control Access and Possession (OCAP) principles](#) and acknowledging Indigenous communities and students' right to control and manage their data. Therefore, educators must have explicit and informed consent from Indigenous communities before incorporating their data or knowledge into generative AI models, which includes clearly communicating the purpose, scope, and potential implications of using their information.

The digital divide, which is unequal access to technology, currently impacts Indigenous students. Indigenous communities in Saskatchewan may have limited infrastructure, remote geographical locations, and financial constraints, resulting in a lack of reliable internet and technology access. Generative AI may cause the digital divide to grow due to the substantial amount of power, internet connectivity, and resources that it requires to operate. As educators incorporate generative AI technologies into their courses, Indigenous students may become disadvantaged due to lack of access. Therefore, providing access and training for generative AI technologies is important.

Generative AI models are trained using large datasets that may lack diversity and produce biased or incorrect information. The AI-generated content may include stereotypes or inadvertently exclude Indigenous perspectives if the datasets lack representation from Indigenous perspectives, cultures, and languages. In addition, Indigenous languages are often underrepresented in large datasets. This impacts the preservation of Indigenous languages and limits the accessibility of the content. Therefore, educators must evaluate all content critically.

For additional information regarding generative AI and Indigenous data and knowledge, educators can review the following resources:

- [Indigenous AI | Indigenous Protocol and Artificial Intelligence Working Group](#)
- [Decolonizing AI Ethics: Indigenous AI Reflections](#)
- [Speaking My Indigenous Language with New AI](#)
- [Indigenous Protocol and Artificial Intelligence](#)
- [Indigenous-Led AI: How Indigenous Knowledge Systems Could Push AI to be More Inclusive](#)
- [Creating Ethical AI from Indigenous Perspectives](#)

Generative AI Citations

As generative AI technologies become more prevalent in academics and the labour market, it is important to recognize the use of these tools through proper citation. Citing the use of generative AI upholds institutional policies of academic integrity and ensures transparency. Each course may use different styles of citations, so it is recommended to clarify proper generative AI citations for students within the course syllabus.

Educators can access the following guides for generative AI citations. Please note that all guides are subject to change as each style develops its standards.

1. **APA style**
   - When citing AI-generated information, it is important to credit the AI model's creators and the model's specific version. If the AI model is used in research or writing, a description of how the model was used must be included.
   - **Guides**: APA Style: Interim Guidance and How Do I Cite Generative AI?: APA.
   - **General format**: Author/Developer. (Year). *Model Name* (Version) [Large Language Model]. URL.
2. **Chicago style**
   - When citing AI-generated information, the AI model is the author, and the company that created the model is the publisher or sponsor.
   - **Guides**: Chicago Manual of Style: Citing Content Developed by Generative AI and How to Cite Generative AI in Chicago.
   - **General format:** Product Name, Prompt Description "Prompt Text", Month Day, Year, Company, URL.
3. **MLA style**
   - When citing AI-generated information, the AI tool is not considered the author but instead the title of the container. The citation must include a description of what was generated by the AI tool, including information about the prompt in the title.
   - **Guides**: MLA Style: How to Cite Generative AI and How to Cite Generative AI in MLA.
   - **General format:** "Prompt Text" Prompt Description. Title of Container, Version, Publisher, Date Accessed, URL.

Generative AI Detection

Students who use generative AI are expected to maintain academic integrity and are accountable for the data they generate or access. Depending on current policies and procedures, post-secondary institutions may hold the right to enforce data protection and security standards.

Any AI detection report generated by a third-party tool cannot be considered conclusive proof of academic misconduct; however, the report may be presented to the investigating party alongside other potential evidence of academic misconduct. Third-party tools designed to detect AI-generated content have demonstrated varying degrees of reliability. In addition, they may breach student's privacy and intellectual property rights and bring forth additional security, privacy, and data concerns. Therefore, educators who utilize third-party AI-detection tools must comply with their institution's data protection and security standards.

In addition, generative AI detection tools may discriminate against English as an additional language (EAL) students. This occurs because detection tools analyze text perplexity, which is measured by how predictable the written text is. Students with a foundational comprehension of the English language may utilize more common words, sentences, and writing structures that can be mislabelled as generative AI. (University of Saskatchewan, n.d.)

To ensure transparency and responsible use of AI detection tools, educators should:

- Review institutional policies and procedures.
- Discuss the use of detection tools with their department head prior to use.
- Include a statement about the use of detection tools in course syllabi.

— Discuss the tools and apps used for assessment with students.

Policies & Procedures

Various institutions in North America created a comprehensive list of policies and procedures regarding different levels of generative AI permissions, which can be accessed here. A clear and concise policy allows post-secondary institutions to benefit from AI-driven educational tools, platforms, and innovation, allowing the institution to adapt and evolve in Saskatchewan's educational landscape and provide programming that reflects current labour market needs and standards. Most generative AI policies include the following information:

1. **Levels of permission**
   - Permitted with citation.
   - Permitted in specific assignments, with citation.
   - Not permitted.
2. **Ethical & legal considerations**
   - Statements regarding how generative AI may reproduce biases and reinforce discrimination, as it does not distinguish between reliable and unreliable data.
   - Statements regarding sensitive information, intellectual property, data protection, and security standards and practices.
3. **Academic integrity statement**
   - Plagiarism and academic misconduct policies.

Currently, academic institutions in Canada have adopted three separate approaches to generative AI policies and procedures:

2. **Informative**: This approach does not include a policy but rather informs faculty, staff, and students about generative AI and how it may be used in academic settings, providing opportunities for training and education.
   - ChatGPT & Generative Artificial Intelligence (GenAI) | University of Saskatchewan (usask.ca)
3. **Instructor-based**: This approach outlines policies, informs Program Coordinators and Instructors about different permission levels, and allows them to choose how generative AI will be included in curricula.
   - Statements of Expectations (Syllabus) | Centre for Teaching and Learning (ualberta.ca)
4. **Institution-wide**: This approach creates policies and procedures surrounding generative AI that the entire institution will adopt. This can include differing levels of permission based on programs but is set by academic Deans or Vice-Presidents rather than Program Coordinators or Instructors. An institution-wide policy addresses all generative AI tools and software and outlines proper practices and policies when using generative AI.

References

University of Saskatchewan. (n.d.) *ChatGPT & Generative Artificial Intelligence (GenAI).*

ChatGPT / GenAI - Academic Integrity | University of Saskatchewan (usask.ca)

Teaching@Sydney. (2023). *Should We Use Generative Artificial Intelligence Tools for Marking and Feedback?* Educational

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