



U15
Canada

Navigating AI in Teaching and Learning

Values, Principles and Leading Practices

September 2024

This paper will be updated as needed by the U15 Academic Affairs Committee.

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About U15 Canada

U15 Canada is an association of fifteen leading research universities across Canada. U15 Canada works to optimize research and innovation policies and programs that advance knowledge, develop highly qualified leaders for all sectors, and mobilize knowledge for the benefit of all Canadians. In this way, U15 Canada seeks to help Canadian universities and partners make a prosperous, sustainable and just future for all.

Introduction

Large Language Models (LLMs) and other generative artificial intelligence tools have become accessible through consumer-facing products and seen widespread adoption. This period has seen substantial discussions across institutions regarding the impact of these technologies on teaching, learning and assessment, and a notable emphasis on academic integrity. In response, many institutions have crafted statements of position, established advisory groups to assess the current state and future directions, and developed guidance and support resources, for both faculty and students.

These AI tools, particularly generative models capable of creating text, code, images, and videos, offer significant potential to enhance student learning. However, they also present well-documented challenges such as a predisposition toward norms reflected in their training data, accuracy concerns, transparency, alignment, privacy, and copyright issues. To realize the potential benefits of this technology, it is crucial that these challenges are acknowledged and mitigated effectively.

This document aims to provide guidance for institutions as they navigate the integration of generative AI tools. The guidance focuses on the implications for education as a first priority area. As members of U15 Canada, a network of research-intensive universities in Canada, we are committed to aligning within an ethical framework that builds and maintains trust in support of the adoption and application of these tools. This will guide the development of emerging practices that support our shared values. Given the pace of change in this area, this document must be evergreen ensuring it remains relevant in this rapidly evolving field.

Baseline assumptions

In the evolving landscape of digital education, U15 institutions recognize the permanence and growing influence of generative artificial intelligence tools. We commit to an ongoing, iterative process to critically examine and adapt our educational programs and supports in response to these advancements. The integration of GenAI¹ functionality is expected to become increasingly prevalent, not only in existing digital tools but also in the development of new applications that can enhance our educational offerings. This will likely result in a more hybridized generation of content, blending human creativity with GenAI capabilities, thereby reshaping how we approach education and learning.

The focus should be one of adding to and enhancing, rather than replacing, or outsourcing aspects of the educational experience we offer to students. Universities have long been, and will continue to be, critical to the construction and curation of learning experiences, beyond just provision (and now, generation) of

¹ The OECD defines GenAI as “a machine-based system that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decision that [can] influence physical or virtual environments. Different AI systems vary in their levels of autonomy and adaptiveness after deployment.” <https://oecd.ai/en/ai-principles>

content. A rich learning experience involves acquiring new knowledge and making sense of it and is fundamentally a social process with human interaction at the core. Learning is made visible through the activities and assessments we set for students. These tools offer us new ways to think about constructing these learning and assessment experiences that can lead to improved outcomes for students.

As these tools evolve, they hold the potential to significantly improve teaching and learning experiences and the support systems surrounding them. It is imperative that our institutions remain proactive and agile in leveraging these opportunities. However, this must be balanced with a thorough understanding of the associated challenges and the implementation of appropriate mitigation strategies. Addressing these challenges necessitates the establishment of 'pillars of trust' within our academic communities. These pillars include transparency of use and outcomes of AI tools and fairness in their application across diverse groups. These pillars also extend to features of the model that individual users must acknowledge as beyond their immediate ability to control, such as explainability of their processes and outcomes, robustness in their performance under various conditions, and the assurance of privacy for users.

Furthermore, our institutions, as learning organizations, will thrive through open collaboration, sharing, and dialogue. This collaborative approach is essential not only within individual institutions but also across diverse stakeholder groups and between member institutions within U15 Canada. Such a stance fosters an environment conducive to mutual learning and advancement in the field of AI-enhanced education.

Values, Principles and Leading Practices

The following series of values that are shared across the U15 institutions underpin and shape principles of use for generative AI tools in support of teaching and learning. Illustrations of how these principles are being realized and enacted are given via leading practices, which will undoubtedly evolve over time and will change as this document is updated.

Values:

1. Upholding integrity. The integrity of our academic work is a core principle for faculty, staff and students as members of a community of scholars. It spans the integrity of academic standards and practices as well as the integrity of learning outcomes and how they are assessed.
2. Maintaining respect. Our institutions are environments that thrive and grow on a diversity of approaches, perspectives and ideas. The ways in which generative AI tools are to be used to support and enhance teaching and learning must be subject to the same collegial processes that are used to design and enhance programs of study. This includes respect for the subject matter experts who shape curriculum and teaching practices.
3. Building trust. The newness of these tools, coupled with rapid advances and improvements, raise many questions. As we learn and gain experience through responsible use, we can and must build trust across campus communities, Indigenous and other partner organizations.
4. Ensuring ethical and legal application. Our use of these systems in education must comply with current and emerging guidelines and regulation of the AI space, as well as the policies and ethical standards of our own institutions.

Principles:

These principles have been adapted from the Government of Canada guidelines on the use of generative AI², with framing that is relevant to our educational activities.

Use must be:

Accountable: A person or persons using these tools must be willing to take responsibility for the content generated by them, because the systems cannot be held responsible.

Responsible use: It is essential to evaluate the use of generative AI tools to ensure content generated is factual and reflects the quality of work expected at a U15 institution, and that the tools are used in a manner that is legal, and compliant with the terms of use. This necessitates a person or people to retain decision-making agency, to decide what actions may be appropriate to take.

Equitable: These tools have been shown to produce content that is inaccurate, inconsistent and predisposed to reflect the norms inherent in their training data. Our use of them must ensure that content generated from such tools is not used if it could propagate or amplify biases, and that it complies with human rights, accessibility, and procedural and substantive fairness obligations.

Secure: Use must adhere to the privacy requirements regarding personal information and sensitive data, as it is implemented within our institutions. It should also be recognized that some GenAI systems allow individuals to upload or provide data for training and retrieval augmented generation. Security review systems that have been developed to assess traditional educational technology must be updated to take this into account. As standards around copyright and use of information for AI training evolve, security review protocols must be revised.

Transparent: Content produced using generative AI tools must be identified as such; additionally, users should know when they are interacting with an AI tool. If tools are used to inform decision-making, explanations of how the tool is being used must be available. It should be clear when interactions with generative AI tools are being used to further train or enhance models.

Educated: Users of generative AI have an obligation to learn about the strengths, limitations and responsible use of the technology, both to maximize the effectiveness of their use but also to identify limitations or issues with the output. Institutions should ensure that support to fulfil this obligation is provided in a manner that is flexible and appropriate for different academic contexts.

Relevant: the use of tools must be appropriate and effective and support the user and their educational needs, with an obvious linkage to how it can support student learning and enable a high-quality student experience. The appropriate tool must be used for the task or purpose at hand.

Suggested leading practices:

1. Clear communication. Institutions must ensure there is clear and consistent messaging, differentiated for campus communities (faculty, staff and students) on the institutional approach(es) being taken to GenAI. Faculty need to know how and where to get guidance and

² <https://www.canada.ca/en/government/system/digital-government/digital-government-innovations/responsible-use-ai/guide-use-generative-ai.html>

support; students need to know what a particular course's policy is on the use of generative AI tools.

2. Continued support. There needs to be on-going provision of educative support, guidance and resources that are appropriately deployed and adaptable across diverse disciplinary contexts, to promote a culture of on-going experimentation, evaluation and enhancement of teaching practice. In moments of rapid technological change, it is advisable to invest in people's development.
3. Collaborative construction of guidelines and policies. While some institutions have established a working group or advisory committee to wrestle with the implications of generative AI, formulation of guidance and policies requires meaningful collaboration with diverse groups of students, faculty and staff as active partners in the construction of policies, processes, guidance, and systems.
4. Regular dialog. There should be regular opportunities for dialog, sharing, discussion and debate of successes, failures and emerging trends in generative AI as applied to education. Everyone at our institutions is learning as we go with these tools.
5. Keeping current. The volume of what is being written about generative AI tools in relation to education is overwhelming. It will be helpful to identify or support expertise that can curate, summarize and synthesize developments to ensure that campus stakeholders remain up to date on developments and can provide the institution with well-grounded advice to uphold the values and principles set forth in here.