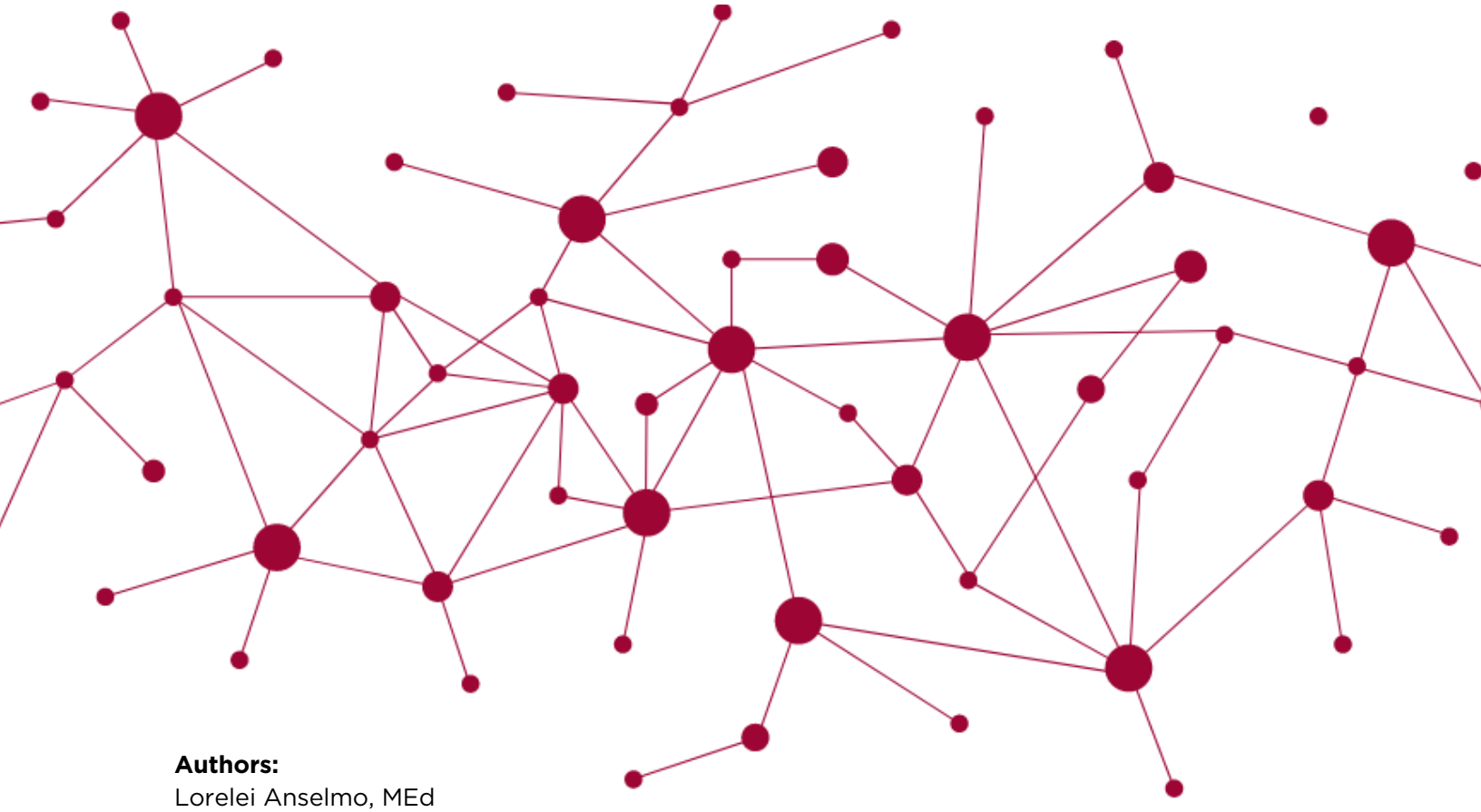
UNIVERSITY OF CALGARY

Taylor Institute
for Teaching and Learning

STRIVE

Emerging Considerations When Designing Assessments for Artificial Intelligence Use



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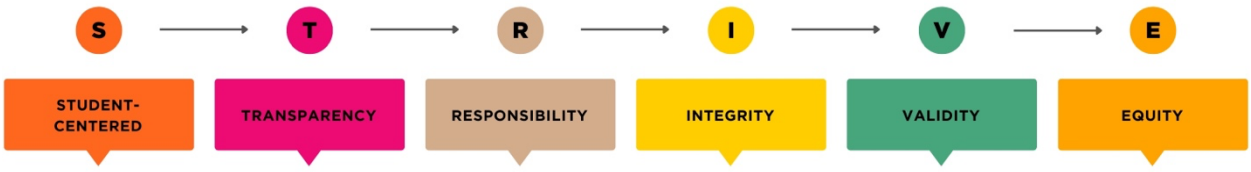
Overview

This resource is for academic staff, post-doctoral scholars, and graduate assistants teaching (TAs) to learn more about how best to design and/or modify course assessments that permit students' use of generative artificial intelligence (GAI) to complete their assignments in academic courses.

This document is a starting point for discussions and reflections to foster a deeper understanding of emerging considerations inherent in AI-based course assessments. These emerging considerations may serve as a roadmap to promote ethical, responsible, and beneficial use of generative artificial intelligence applications in course assessment practices. This document may strengthen understanding and engagement with the ethical dimensions of GAI assessments, promoting fairness and transparency in students' educational experiences.

The STRIVE Model

The STRIVE: Emerging Considerations model builds on Smyth et al.'s (2011) and Squire's (2018) 3E Frameworks with Laurillard's (2002) considerations. The STRIVE model can be used to design assessments with GAI use in mind that support alignment between technology and approaches to learning in assessments to include student-centeredness, transparency, responsibility, integrity, validity, and equity (STRIVE).



Background

Smyth et al. (2011) developed the 3E Conceptual Framework: Enhance, Extend, and Empower to improve technology use to aid student learning. In 2018, Squires (2018) refined the 3E Framework to encourage instructors to highlight the purpose or intent of the learning task to determine the technology level it represents:

> **Enhance:** adopting technology in simple and effective ways to actively support students and increase their engagement and self-responsibility
>
> **Extend:** further use of technology that facilitates key aspects of students' individual and collaborative learning and assessment through increasing choice and control.
>
> **Empower:** developed use of technology that requires higher-order individual and collaborative learning that reflects how knowledge is created and used in professional environments.

Additionally, Laurillard (2002) noted that some uses of technology can and should align with the learning they enable, such as creating efficiencies, improving accessibility and/or flexible timing, encouraging enriching interactions, and facilitating the development of key skills, abilities, and literacies.

Using GAI in assessments presents an opportunity to align the use of technology with learning to help students develop future-focused attributes and skills.

The STRIVE Model and Future-focused Student Skill Development

The STRIVE model incorporates the following considerations for assessments that support student use of GAI: student-centered, transparency, responsibility, integrity, validity, and equity.

Using the STRIVE model may lead to the development of the following future focused skills for students.

	Using GAI in assessments encourages students to:		
Considerations			
	Enhance	**Extend**	**Empower**
S – Student-centeredness	Engage in flexible learning	Collaborate to problem solve	Commit to critical thinking
T – Transparency	Develop clarity in GAI application	Identify reliable sources	Dialogue about authorship
R – Responsibility	Be accountable for content creation	Recognize overreliance on GAI use	Examine and challenge GAI-produced content
I – Integrity	Engage in values-based discussions	Model appropriate use of GAI	Critique GAI-generated output for accuracy and bias
V – Validity	Demonstrate learning in fair and equitable ways	Build agency through ethical decision-making	Develop meta-cognitive skills through self-reflection
E – Equity	Understand how to access GAI tools	Develop knowledge on the risks and benefits of GAI use	Recognize and advocate for equitable and inclusive GAI use

The STRIVE Model in Practice

The following are examples of how incorporating the STRIVE: Emerging Considerations model may help guide decisions to include GAI in course assessments.

S Student-Centered

A student-centered GAI assessment may support students' flexibility in learning, collaboration skills, and the development of self-reflection techniques.

Enhance: Student-centered learning may be enhanced when GAI-assisted assessments prioritize students' needs by promoting both flexibility and convenience.

- Provides opportunities for students to utilize GAI as a starting point for assessments.
    - Example: Integrating GAI into a student-centered assessment involves leveraging GAI tools to offer flexible and convenient access for students to use GAI applications, allowing them to generate project ideas, craft initial outlines, and facilitate brainstorming sessions.

Extend: Student-centered learning may be extended with GAI-assisted assessments by increasing interaction and collaboration among students, nurturing an environment that thrives on active engagement and mutual cooperation.

- Promotes assistance with the division of group tasks.
    - Example: Students can enhance peer interactions and collaboration by leveraging GAI applications to divide group tasks and bolster individual contributions, utilizing GAI for initial drafts, and facilitating peer review.

Empower: A student-centered approach to GAI-assisted assessments may empower students through self-reflection, fostering a deeper understanding of their learning journey.

- Explores opportunities to improve student work by engaging in reflective practice using GAI.
    - Example: Students utilize GAI tools for generating reflective prompts, enriching their work, and fostering a deeper reflective practice. This engagement may allow for exploration and critical improvement of their work.

T Transparency

Transparency refers to how students approach their work using GAI, including how they used the tools and citing accordingly.

Enhance: Transparency in GAI-assisted assessments may enhance clear and accountable utilization of GAI tools ensuring openness and clarity in their application.

- Creates learning opportunities for students to communicate authorized GAI use in assignments transparently.
    - Example: Using a chatbot, students develop a document that explains how they can make a record of their interactions with GAI to add as an appendix to an assignment.

Extend: Transparency in GAI-assisted assessments may be extended when students facilitate the comprehensive use of GAI tools to effectively identify and critique reliable sources aiding students in informed decision-making for their work.

- Guides students' authorized use of GAI tools to identify sources relevant to their assignments.
    - Example: Students follow guidelines to analyze the sources a chatbot produces. After reviewing and assessing the sources, the students list the most relevant ones in their reference list, following the norms of a relevant citation style.

Empower: A transparent approach to GAI-assisted assessment may empower learners to engage in dialogue about authorship when writing with authorized GAI tools in group assignments.

- Designs and implements teaching and learning activities that intentionally give students space to analyze and critique their writing experience with GAI.
    - Example: After using an authorized GAI tool to support a group assignment, students explain to their peers how they used it and how it might have impacted their writing styles and tones. Students can also synthesize the main points of the experience, providing concrete examples from their own work.

R Responsibility

Responsibility refers to students holding themselves accountable for their GAI use in assessments and committing to critiquing AI-generated content for false, misleading, or biased information.

Enhance: Responsibility in GAI-assisted assessments may enhance student learning when learners recognize the need for accountability when creating content developed by GAI.

- Includes explanations and examples that emphasize the relevance of human decision-making in processes involving GAI use.
    - Example: Students, using GAI-supported tasks such as generating images or providing text descriptions, explore accountability by recognizing human decision-making's crucial role in GAI processes. Analyzing case-based scenarios showing the consequences of using GAI without human supervision encourages responsibility, emphasizing the necessity of human oversight for ethical AI applications.

Extend: Responsibility in GAI-assisted assessments may extend student learning when support is provided that motivate students to do their work to the best of their abilities, using GAI and avoiding overreliance.

- Guides students' learning process by raising their awareness of the importance of attribution.
    - Example: Students explain their work by differentiating content that represents their own ideas and creations from content suggested by GAI tools. Students also describe the process of editing GAI content and share the underlying principles.

Empower: Responsibility in GAI-assisted assessments may empower student learning when the learner critiques and improves on the GAI-assisted content creation.

- Engages students in learning experiences that make visible the implications of false, and biased information and how that could be detrimental to equity-deserving groups.
    - Example: Students interact with GAI tools to critically examine the responses and challenge fabrications and misrepresentations that could potentially lead to discriminatory practices.

I Integrity

Integrity refers to providing opportunities for students to experiment with GAI through activities that engage students and model ethical learning.

Enhance: Integrity in GAI-assisted assessments may enhance student learning when the learning aligns the use of GAI in assessments with discussions surrounding values such as integrity, trust, and truthfulness.

- Provides opportunities for students to practice these values when using GAI to support not bypass or substitute ethical learning.
    - Example: Students align the use of GAI in assessments with discussions on integrity, trust, and truthfulness, ensuring it complements ethical learning practices rather than replacing them. Through co-creating guidelines for GAI's ethical use in assessments, students actively demonstrate integrity, emphasizing responsible utilization and upholding ethical standards in their academic work.

Extend: Integrity in GAI-assisted assessments may extend student learning when instructors model appropriate use of GAI in own teaching practice.

- Includes exemplars detailing where and how to use GAI ethically in your course assessments.
    - Example: Students engage in comparative discussions between GAI-assisted and non-GAI-assisted exemplars, fostering an understanding of ethical GAI application and its impact on assessment outcomes, reinforcing responsible GAI use.

Empower: Integrity in GAI-assisted assessments may empower student learning when students are required to critique GAI-assisted content for diversity, inclusivity, and real-world scenarios.

- Highlights the need to evaluate and validate all GAI-generated content for inaccuracies and biases.
    - Example: Students are empowered to critique GAI content for diversity and real-world relevance are prompted to validate all GAI-generated material for accuracy, engaging in case studies or collaborative projects using GAI to emphasize critical assessment and authenticity in real-world scenarios.

V Validity

Validity refers to ensuring students are being assessed on their learning. Valid GAI-assessments must align with the course learning outcomes.

Enhance: Validity in GAI-assisted assessments may enhance student learning when learners focus on demonstrating evidence of learning in fair and equitable ways.

- Provides inclusive assessments that attend to equity and inclusivity.
    - Example: Students participate in a debate-style assessment integrating GAI to research diverse perspectives, evaluate and critique sources, and apply ethical citation practices which collectively authenticate the assessment's credibility and fairness in evaluating student performance.

Extend: Validity in GAI-assisted assessments may extend student learning when learners use GAI tools to co-create accurate and effective formative and summative feedback of their own work.

- Provides opportunities for individualized reflection and encourages student agency in learning and self-assessment.
    - Example: Students engage in a GAI-enhanced project-based assessment that utilizes GAI tools for personalized formative feedback, research support, and self-assessment, and culminates in a comprehensive summative evaluation fostering individualized learning.

Empower: Validity in GAI-assisted assessments may empower student learning when they promote critical thinking through reflection.

- Provides opportunities for students to engage in meta-cognitive learning
    - Example: Students demonstrate their evaluative judgement using GAI to prompt critical thinking and foster meta-cognitive learning by reflecting on the ethical implications of their decision-making processes. For example, students can include a brief statement on assignment where GAI was used, explaining how and why they used GAI. Students could also use a chatbot as a learning journal and prompt the chatbot to provide learning goal suggestions.

E Equity

Equity refers to equitable access to and understanding of AI tools which promote an inclusive and accessible learning environment for all students.

Enhance: Equity in GAI-assisted assessments may enhance student learning when educators consider and promote equitable use and access to GAI tools.

- When utilizing AI within assessment, ensure all students, regardless of their personal circumstances or backgrounds, can access and understand the GAI tools being used.
    - Example: Educators can adapt assessments to ensure all students can be successful and can mitigate challenges they may find in relation to the use of GAI tools. Mitigating these challenges may involve providing alternative methods for students facing barriers, ensuring clear instructions, and providing opportunities to practice and be supported with the tools during class.

Extend: Assessments that encourage or promote GAI use should be accessible and inclusive, considering all students' diverse learning needs.

- Equity in GAI-assisted assessments may extend student learning when the use of GAI enriches the educational experience of all students allowing them to complete the assessment successfully.
    - Example: Ensuring equity in GAI-supported assessments involves prioritizing accessibility and enhancing equal opportunities for all learners, regardless of their access to GAI tools. This is achieved through a " "multiple, inclusive, and contextualized" approach to assessment" ((TEQSA, 2023c, p. 3) that fosters fairness and equity). More specifically, the integration of GAI in assessment should not disadvantage any learner. Furthermore, it is critical to facilitate an inclusive dialogue by including "a range of voices" (TEQSA, 2023c, p. 2) to collaboratively design and implement equitable assessment practices.

Empower: Empower refers to students feeling comfortable speaking up and advocating for equitable practice with the use of GAI within assessments.

- Equity in GAI-assisted assessments may empower students to recognize and advocate for inclusive practices, fostering a sense of agency and the confidence to champion fairness and diversity within their learning environments.
    - Example: Students are empowered to discuss any concerns related to the use of GAI in assessment, and educators dedicate space and time for these

conversations. This empowerment may involve educators, student support services and library services dedicating resources, discussions, or instructional support to help students gain a deeper understanding of GAI tools and their impact on assessments promoting equitable engagement and advocacy for fairness in GAI utilization.

Final Thoughts

This resource was designed as an invitation to reflect on key considerations for assessments using generative artificial intelligence. The STRIVE considerations of student-centeredness, transparency, responsibility, integrity, validity, and equity serve as a guide for assessment design that highlights a holistic approach to the use of artificial intelligence while promoting future-focused learning for our students.

Supplementary Resources for GAI and Assessment

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