



RESEARCH REPORT: AI USE AT MCMMASTER UNIVERSITY

THE MCMMASTER STUDENTS UNION



Purpose

As representatives of over 28,000 undergraduate students at McMaster University, the McMaster Students Union (MSU) recognizes that the integration of AI into academic spaces must be approached with thoughtful consideration and a forward-thinking perspective. Our responsibility is not only to embrace innovation but also to safeguard the integrity of education, ensuring that technology does not diminish the human connections and critical thinking that define the learning experience. To this end, the MSU presents this document to address some of the guidelines instilled by the Office of the Provost & Vice-President (Academic) and instead puts forward policy that must be institutionally mandated.

UNESCO has already outlined the necessity of a structured policy when approaching AI, with the demand that its introduction must be oriented to reducing inequities of access to knowledge rather than perpetuating existing technological divides. As AI tools become increasingly available, institutions must take care to ensure their benefits accrue to every student and are not confined to those who possess the resources to put them into effective use. However, we recognize that AI presents a paradox in education. While it can personalize learning, automate administrative tasks, and provide additional layers of support, it cannot replicate the role of a teacher in fostering critical thinking, emotional intelligence, and social skills¹. The irreplaceability of educators is not just a pedagogical reality but a fundamental truth about how humans learn. Teaching is a relational activity, and AI may assist but should never replace the human factor that makes learning worthwhile². Thus, any policy recommendations regarding AI in education must be guided by principles that protect the students, not just from misuse or academic dishonesty, but from policies that fail to uphold their rights, autonomy, and academic integrity.

Despite AI's transformative potential, there are growing concerns about its misapplication in academic settings, particularly when used in ways that compromise student fairness, transparency, and accountability. The MSU strongly opposes AI-based grading, AI-generated feedback, and detection software such as Turnitin's AI-detection model, all of which pose ethical, pedagogical, and privacy-related concerns. These tools introduce unwarranted biases, misclassifications, and power imbalances that disproportionately affect students without offering clear process protections. However, the MSU is open to changing its stance if such technologies emerge to address these issues and become sufficiently reliable. The MSU also encourages the development of curriculum at the program level on AI usage so that such tools, which will undoubtedly shape the future, are responsibly integrated into the learning of students if they meet rigorous standards for equity and accuracy.

1. The future of learning: AI is revolutionizing education 4.0 [Internet]. World Economic Forum. 2024 [cited 2025 Mar 29]. Available from: <https://www.weforum.org/stories/2024/04/future-learning-ai-revolutionizing-education-4-0/>

2. Advantages and disadvantages of AI in education | University Canada West (UCW) [Internet]. [cited 2025 Mar 29]. Available from: <https://www.ucanwest.ca/blog/education-careers-tips/advantages-and-disadvantages-of-ai-in-education>

Currently, many academic guidelines operate under the assumption that AI is banned unless explicitly stated otherwise. This default prohibition strategy places students in a vulnerable position, where they have to work under ambiguous guidelines with no definite safeguards. Instead, we advocate for a reversal of this standard: professors must be required to explicitly state in their course syllabi what forms of AI use are permissible within their classes, if any. Likewise, professors must be required to explicitly state what forms of AI use are impermissible. In cases where a professor fails to define AI-use policies, students should be protected from retroactive penalties.

Moreover, the suspicion of AI use ought not to be an automatic cause for academic misconduct accusations and penalties. Instead, any concerns should warrant a discussion between the student and instructor before punitive measures are considered. Academic policy must remain student-centered so that disciplinary actions consider technological limitations and instructor responsibility in defining AI use.

These recommendations are not about rejecting AI but about ensuring its ethical and responsible integration into the learning process. The MSU is committed to upholding academic integrity, protecting student rights, and advocating for a policy framework that embraces AI's potential without compromising fairness, trust, or human engagement³.

3. Brendon C. McMaster Ombuds Office Annual Report 2023-2024. Hamilton (ON): McMaster University; 2024. Available from: <https://ombuds.mcmaster.ca>

AI Policy

Principle: Students should have access to clear and consistent AI use policies.

Concern(s):

- Students struggle to distinguish between permissible uses of AI and actions that violate academic integrity.
- The lack of standardized AI policies across courses creates confusion and inconsistency.
- Students fear retroactive punishment due to unclear AI-use policies.
- The assumption that AI is banned unless stated otherwise places undue pressure on students.

Recommendation(s):

- Professors should explicitly state AI-use policies in their course syllabi, specifying what is allowed and what is not.
- McMaster University should establish clear, course-specific AI guidelines applicable across all courses to minimize inconsistencies.
- Students should be protected from retroactive academic misconduct allegations if AI policies were not clearly defined in their course syllabus.

Analysis

The absence of clear AI policies in academic institutions has led to widespread confusion among students regarding what is permissible and what constitutes a violation of academic integrity. According to a survey, 66% of students who avoided using generative AI cited institutional prohibition as their reason, even though 85% of respondents were aware of AI-related policies at their institution⁴. However, AI guidelines remain inconsistent across Ontario institutions, leading to misconceptions and uncertainty about AI's role in education⁵.

4. Using Generative AI to Make Learning More Accessible: Insights from Ontario PSE Students and Staff - Higher Education Quality Council of Ontario [Internet]. [cited 2025 Mar 29]. Available from: <https://heqco.ca/pub/using-generative-ai-to-make-learning-more-accessible-insights-from-ontario-pse-students-and-staff/>

5. ^^

The Canadian Digital Learning Research Association found that 40% of institutions lack any guiding principles for AI use, while 47% are still in the process of developing them, contributing to ambiguity and misinformation⁶.

Additionally, 55% of Ontario institutions were in the process of establishing AI guidelines, with only 17% having formalized them, resulting in inconsistent AI-use policies across different universities⁷. This lack of uniformity leaves students without a reliable framework to navigate AI's role in their academic work, increasing the likelihood of unintentional violations.

Does your institution have any regulations, guidelines or policies on Artificial Intelligence tools (e.g., ChatGPT, DALL-E, BARD)?

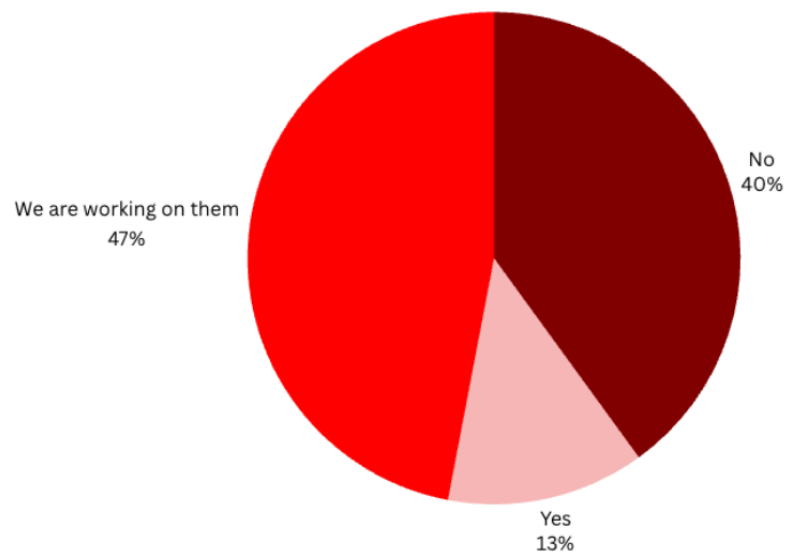


Figure 1: Canadian Institutional AI Policies and Guidelines. The pie chart illustrates survey responses from 146 participants across 91 institutions regarding the presence of AI-related regulations, guidelines, or policies. Only 13% of institutions have established AI guidelines, while 47% are in the process of developing them. A significant 40% of institutions currently have no guidance in place for the use of AI tools such as ChatGPT, DALL-E, and BARD⁸.

6. CDLRA 2023 AI Report [Internet]. D2L. [cited 2025 Mar 29]. Available from: <https://www.d2l.com/resources/assets/cdlra-2023-ai-report/>

7. Johnson DN. A Time of Digital Transformation: Digital Learning Trends in Ontario Post- Secondary Education 2023 Ontario Report.

8. CDLRA 2023 AI Report [Internet]. D2L. [cited 2025 Mar 29]. Available from: <https://www.d2l.com/resources/assets/cdlra-2023-ai-report/>

Currently, McMaster University recommends that course outlines include statements on the acceptable and unacceptable use of generative AI, but this remains a guideline rather than a policy⁹. Without a mandatory requirement, students may face discrepancies in AI regulations across different courses and faculties. Mandating explicit AI-use statements in course syllabi ensures clarity, protects students from unjust disciplinary action, and fosters transparency.

Unclear AI guidelines can also lead to punitive measures based on suspicion rather than concrete evidence. A notable case in Massachusetts involved parents suing a school after their son was punished for using AI in a research paper, despite the school not having AI-specific policies in place at the time¹⁰. The absence of pre-established guidelines left room for subjective interpretation, ultimately leading to legal action. To prevent similar cases, institutions should establish clear AI-use policies and ensure students are aware of them from the start of each term.

Additionally, AI detection software has been found to disproportionately flag non-native English speakers' work as AI-generated, raising serious concerns about fairness and bias in academic misconduct allegations¹¹. A high-profile case at the University of Manitoba saw a Ph.D. student expelled based on unreliable AI detection methods, despite the student denying AI usage and contesting the validity of the accusations¹². These cases highlight the ethical and procedural risks of relying on AI-detection software and retroactive AI-related accusations without due process.

Given these concerns, the MSU urges a shift in guidelines that requires instructors and programs to explicitly clarify acceptable AI usage for each course. We do not advocate for a universal 'AI is always permitted' approach, as the role of AI can vary significantly between disciplines such as social sciences and the sciences. Instead, institutions should establish a baseline set of standardized guidelines while allowing faculties and instructors the flexibility to adapt these policies to their specific pedagogical needs. This tailored approach ensures fairness, transparency, and accountability, protecting both student rights and academic integrity, while still allowing for the responsible integration of AI across all university disciplines.

9. Guidelines on the Use of Generative AI in Teaching and Learning [Internet]. Academic Excellence - Office of the Provost. [cited 2025 Mar 29]. Available from: <https://provost.mcmaster.ca/office-of-the-provost-2/generative-artificial-intelligence-2/task-force-on-generative-ai-in-teaching-and-learning/provisional-guidelines-on-the-use-of-generative-ai-in-teaching-and-learning/>

10. Parents of Massachusetts high schooler disciplined for using AI sue school [Internet]. AP News. 2024 [cited 2025 Mar 29]. Available from: <https://apnews.com/article/high-school-student-lawsuit-artificial-intelligence-8f1283b517b2ed95c2bac63f9c5cb0b9>

11. AI-Detectors Biased Against Non-Native English Writers | Stanford HAI [Internet]. [cited 2025 Mar 29]. Available from: <https://hai.stanford.edu/news/ai-detectors-biased-against-non-native-english-writers>

12. 'A death penalty': Ph.D. student says U of M expelled him over unfair AI allegation [Internet]. MPR News. 2025 [cited 2025 Mar 29]. Available from: <https://www.mprnews.org/story/2025/01/17/phd-student-says-university-of-minnesota-expelled-him-over-ai-allegation>

AI Detection Software

Principle: Academic institutions should ensure the ethical, accurate and fair use of AI detection software.

Concerns:

- AI detection software is unreliable, often producing false positives that can lead to unwarranted academic misconduct allegations.
- AI detection tools disproportionately flag non-native English speakers, increasing bias and discrimination in academic evaluations.
- The lack of transparency in AI detection algorithms makes it difficult for students and faculty to contest or verify results.

Recommendation(s):

- McMaster University should prohibit the use of AI detection software when assessing academic misconduct cases due to its unreliability and potential for bias.
- McMaster University should ensure that any AI-related misconduct allegations require substantial human verification before disciplinary action is taken.
- McMaster University should develop alternative, student-centered strategies to promote academic integrity without reliance on flawed AI detection systems.

Analysis

AI detection softwares such as Turnitin are fundamentally unreliable, raising serious concerns about its role in academic integrity enforcement. A study evaluating 14 AI detection tools, including Turnitin and GPTZero, found that none achieved an accuracy rate above 80%, with only five exceeding 70%¹³. These findings suggest that an “easy solution” for AI-generated text detection may not exist¹⁴. Despite Turnitin’s claim that its AI detection tool has a false positive rate of less than 1% for documents, this still means that at least one out of every 100 human-written documents could be incorrectly flagged¹⁵. With McMaster University having over 28,000 undergraduate students, this would account for up to 300 students being wrongly identified each year. This is a very conservative figure, as students are uploading more than one assignment per year depending on the course of study.

In June 2023, Turnitin further acknowledged that its tool’s false positive rate was higher than initially asserted, reinforcing doubts about its reliability¹⁶.

One of the largest issues with AI detection software is its inherent bias against non-native English speakers. A study by Stanford University found that seven AI detectors misclassified writing by non-native English speakers as AI-written 61% of the time, and 20% of those cases were consistently detected by all detectors¹⁷. The bias is due to the way that AI detection tools calculate text perplexity, the degree to which a model “struggles” to predict the next word in a sentence. Because generative AI programs produce low-perplexity text, detectors flag similar writing patterns as AI-generated. Unfortunately, non-native English speakers, who may use simpler sentence structures and common phrases, are disproportionately affected¹⁸. As a result, these tools risk reinforcing linguistic discrimination in academic settings.

13. Weber-Wulff D, Anohina-Naumeca A, Bjelobaba S, Foltýnek T, Guerrero-Dib J, Popoola O, et al. Testing of detection tools for AI-generated text. *Int J Educ Integr*. 2023 Dec;19(1):1-39.

14. ^^

15. AI writing detection update from Turnitin’s CPO [Internet]. 2023 [cited 2025 Mar 29]. Available from: <https://www.turnitin.com/blog/ai-writing-detection-update-from-turnitins-chief-product-officer>

16. Encouraging Academic Integrity – University Center for Teaching and Learning [Internet]. [cited 2025 Mar 29]. Available from: <https://teaching.pitt.edu/resources/encouraging-academic-integrity/>

17. AI-Detectors Biased Against Non-Native English Writers | Stanford HAI [Internet]. [cited 2025 Mar 29]. Available from: <https://hai.stanford.edu/news/ai-detectors-biased-against-non-native-english-writers>

18. Betsy R. Programs to detect AI discriminate against non-native English speakers, shows study. *The Guardian* [Internet]. 2023 Jul 10 [cited 2025 Mar 29]; Available from: <https://www.theguardian.com/technology/2023/jul/10/programs-to-detect-ai-discriminate-against-non-native-english-speakers-shows-study>

Another major concern is the lack of transparency in AI detection algorithms, rendering it difficult for students and teachers to challenge or verify findings. The proprietary nature of these tools guarantees that their decision-making process is opaque. The Government of Ontario’s Trustworthy AI Framework claims the significance of transparency, where “disclosure and transparency of AI systems is important for public confidence”¹⁹. Without information about how AI detection software functions, students accused of misconduct can’t properly defend themselves, and teachers can have no concrete basis to believe these tools.

With these serious concerns in mind, institutions must put strong emphasis on human judgment when handling academic integrity. AI detection software cannot be the sole determinant of whether or not misconduct has occurred. The University of Waterloo has already followed suit, stating that “Turnitin’s AI Detection tool score cannot be used as the only evidence of a potential academic offence,” emphasizing the value of human verification in all cases²⁰. Academic institutions need to follow suit by ensuring that any allegation of AI-related irregularity requires significant human verification prior to disciplinary measures being enforced.

Beyond simply reducing reliance on AI detection tools, institutions must make an effort to develop alternative, student-centered strategies for academic integrity. Encouraging increased instructor-student interaction, more authentic assessment methods, and instilling academic integrity through education rather than punishment can help to establish a fairer learning environment²¹. Additionally, human-led evaluation methods should be prioritized to prevent unnecessary reliance on flawed software. Faculty should be equipped with the necessary resources to assess student work effectively without resorting to AI detection tools.

Ultimately, AI detection software carries more disadvantages than benefits and undermines the validity and fairness of academic assessments. The widespread issues of false positives, linguistic bias, and lack of transparency call into question the validity of these tools in academic settings. Rather than depending on AI detection, institutions should implement policies that enhance academic integrity through human intervention in which students are held fairly and equally accountable as technology progress²².

19. Ontario’s Trustworthy Artificial Intelligence (AI) Framework | ontario.ca [Internet]. [cited 2025 Mar 29]. Available from: <http://www.ontario.ca/page/ontarios-trustworthy-artificial-intelligence-ai-framework>

20. Artificial intelligence and ChatGPT | Academic Integrity | University of Waterloo [Internet]. [cited 2025 Mar 29]. Available from: <https://uwaterloo.ca/academic-integrity/artificial-intelligence-and-chatgpt>

21. The case against AI detectors | Office of Teaching, Learning, and Technology - The University of Iowa [Internet]. [cited 2025 Mar 29]. Available from: <https://teach.its.uiowa.edu/news/2024/09/case-against-ai-detectors>

22. Guidance on AI Detection and Why We’re Disabling Turnitin’s AI Detector [Internet]. Vanderbilt University. [cited 2025 Mar 29]. Available from: <https://www.vanderbilt.edu/bright-space/2023/08/16/guidance-on-ai-detection-and-why-were-disabling-turnitins-ai-detector/>

AI Grading & Assignment Feedback

Principle: Academic assessments should prioritize human-led evaluation and feedback to ensure fairness, transparency, and meaningful student engagement.

Principle: AI-generated grading and feedback undermine the integrity of education by failing to account for the importance of instructor-student conversations during assessments.

Concern(s):

- The nature of AI grading algorithms means students and instructors lack transparency into how evaluations are made, preventing contestation of grades due to lack of knowledge.
- AI grading lacks the ability to assess complex reasoning, creativity, and nuanced arguments, leading to inaccurate or inadequate evaluations of student work.
- AI-generated feedback is often generic, impersonal, and fails to provide students with the detailed, context-specific guidance necessary for academic growth.

Recommendation(s):

- McMaster University should prohibit the use of AI-generated grading in academic assessments to ensure fair and accurate evaluations of student work.
- McMaster faculty should provide direct, personalized feedback to students rather than relying on AI-generated comments.
- McMaster University should prioritize maintaining a high standard of instructor-student engagement in academic assessments, ensuring that grading and feedback processes remain human-centered and pedagogically meaningful.

AI-generated grading and feedback introduce significant concerns regarding accuracy, fairness, and the quality of student learning. Students deserve meaningful, personalized evaluations that help them grow, but AI-generated feedback often lacks the depth and context needed to foster human development. Research shows that AI struggles to properly assess complex reasoning, creativity, and nuanced responses, with ChatGPT grading showing agreement with human-assigned scores in only 30% of cases²³. Additionally, AI-assigned scores tend to be more clustered, with 73% falling within a narrow range of 50%-84% (grades B-E), compared to just 54% for human assessors, which suggests a lack of depth in AI evaluations²⁴. Figure 2 further illustrates how AI grading fails to account for extreme cases, failing to assign the highest and lowest scores appropriately. This lack of cohesion demonstrates AI’s inability to fully engage with complex, open-ended answers that may result with a grade on either end of the spectrum.

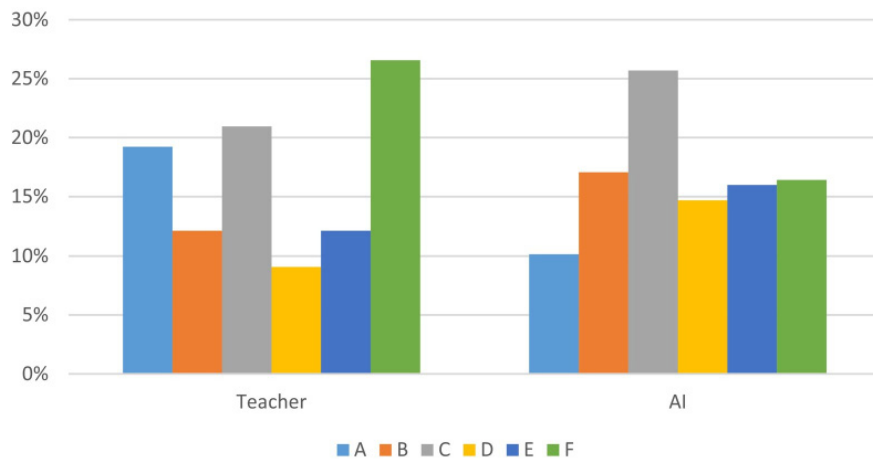


Figure 2: This figure illustrates the distribution of grades (A-F) assigned by teachers and AI for student responses. The AI exhibits a narrower scoring range, with 73% of its grades falling between 50% and 84% (grades B-E), compared to 54% for teachers. The AI also assigns fewer extreme scores, with no students receiving a zero and only one achieving a maximum score. The bar chart highlights these differences in grading tendencies between human and AI assessors²⁵.

23. Flodén J. Grading exams using large language models: A comparison between human and AI grading of exams in higher education using ChatGPT. *British Educational Research Journal*. 2025;51(1):201-24.

24. ^^

25. Flodén J. Grading exams using large language models: A comparison between human and AI grading of exams in higher education using ChatGPT. *British Educational Research Journal*. 2025;51(1):201-24. Kumar R. Faculty members’ use of artificial intelligence to grade student papers: a case of implications. *Int J Educ Integr*. 2023 Dec;19(1):1-10.

In addition to accuracy, AI grading systems are also not transparent. The majority of AI grading models are “black boxes,” and instructors and students are unable to see how conclusions are made²⁶. Such lack of transparency is a concern when students need to appeal their grades because there is no clear rationale for the evaluation process. Human assessors can explain their reasons, but AI models provide no such accountability, leading to frustration and mistrust of the grading system.

Another important issue with AI in learning settings is how it influences student engagement. 70% of students are already utilizing generative AI for academic assistance rather than approaching their teachers²⁷. If instructors themselves are reliant on AI for marking and grading, it only adds to this disconnection, further reducing instructor-student interaction. This often makes students feel that there’s not much difference in asking AI for help themselves, and therefore many forego valuable guidance from teachers. A recent survey found that 58% of students believe AI could replace human educational staff like teaching assistants due to the belief that they also depend on AI²⁸. Sadly, this trend undermines the personalized feedback, empathy, and deeper learning opportunities that only human educators can provide, ultimately damaging our students’ academic experience.

AI-generated feedback is also fundamentally limited in its ability to provide meaningful guidance. Studies show that while AI feedback can be immediate, it often lacks depth, personalization, and contextual relevance²⁹. A report from the Higher Education Quality Council of Ontario (HEQCO) highlights that students overwhelmingly value personalized feedback from instructors, which AI tools fail to replicate³⁰. Additionally, research from Chaudhary et al. demonstrates that personalized human feedback leads to better academic performance and higher engagement levels ($p < 0.01$)³¹. The University of Calgary shares this sentiment, emphasizing that while AI can assist in providing feedback, it lacks the personal touch and contextual understanding that make human interactions essential to education³².

26. Students using generative AI confess they’re not learning as much - KPMG Canada [Internet]. KPMG. 2024 [cited 2025 Mar 29]. Available from: <https://kpmg.com/ca/en/home/media/press-releases/2024/10/students-using-gen-ai-say-they-are-not-learning-as-much.html>

27. ^^

28. AI in Schools: Pros and Cons [Internet]. College of Education. [cited 2025 Mar 29]. Available from: <https://education.illinois.edu/about/news-events/news/2024/10/24/ai-in-schools--pros-and-cons>

29. Cardona MA, Rodríguez RJ, Ishmael K. Artificial Intelligence and the Future of Teaching and Learning.

30. (PDF) THE IMPACT OF AI-POWERED EDUCATIONAL TOOLS ON STUDENT ENGAGEMENT AND LEARNING OUTCOMES AT HIGHER EDUCATION LEVEL [Internet]. ResearchGate. [cited 2025 Mar 29]. Available from: https://www.researchgate.net/publication/382559080_THE_IMPACT_OF_AI-POWERED_EDUCATIONAL_TOOLS_ON_STUDENT_ENGAGEMENT_AND_LEARNING_OUTCOMES_AT_HIGHER_EDUCATION_LEVEL

31. ^^

32. Strategies for Effective Feedback in the Age of Generative Artificial Intelligence | Taylor Institute for Teaching and Learning | University of Calgary [Internet]. [cited 2025 Mar 29]. Available from: <https://taylorinstitute.ucalgary.ca/strategies-effective-feedback-age-generative-artificial-intelligence>

Another limitation of AI-based feedback is its inability to evaluate creativity and unconventional responses. AI models are trained on existing data, which makes them prone to favoring conventional responses over innovative thinking³³. This rigidity in assessment discourages students from exploring new ideas and stifles creativity. Moreover, AI systems are also prone to “hallucinations,” with a tendency to generate information which appears plausible but is actually mistaken or misleading. Studies have shown that models like GPT-3.5 have a hallucination rate of approximately 39.6%, while GPT-4’s rate is about 28.6%³⁴. What this means is that an AI can generate a rich description of a non-existent scientific phenomenon and validate it with fake data. If a teacher relies on AI marking, the AI may misevaluate a student’s creative way of tackling an assignment by offering wrong information based on such hallucinations.

This not only misguides students but also undermines the evaluation of creative and unconventional work. Furthermore, Yang et al. tried nine Automatic Essay Scoring (AES) artificial intelligence (AI) models on over 25,000 essays and concluded that AI has a tendency to focus on surface-level attributes of writing, like word count or sentence organization, rather than the depth of analysis or imaginative writing³⁵. AI is not effective at understanding nuances in open-ended responses, which again confirms its weaknesses in providing useful feedback³⁶.

Given these significant shortcomings, institutions should prohibit AI-generated grading and feedback to maintain fairness and academic integrity. The lack of human oversight in AI grading undermines students’ trust in their evaluations. Instead, universities should require that faculty provide direct, personalized feedback to ensure that students are given useful guidance in their studies.

Ultimately, AI grading and feedback fail to provide the nuanced, individualized support that students need to thrive. Academic institutions must maintain a strong commitment to human-led evaluation, encouraging more engagement and ensuring assessments are representative of true depth of student learning.

33. Wang D. Teacher- Versus AI-Generated (Poe Application) Corrective Feedback and Language Learners’ Writing Anxiety, Complexity, Fluency, and Accuracy. *The International Review of Research in Open and Distributed Learning*. 2024 Aug 26;25(3):37–56.

34. Chelli M, Descamps J, Lavoué V, Trojani C, Azar M, Deckert M, et al. Hallucination Rates and Reference Accuracy of ChatGPT and Bard for Systematic Reviews: Comparative Analysis. *Journal of Medical Internet Research*. 2024 May 22;26(1):e53164.

35. Yang Y, Buckendahl CW, Juszkievicz PJ, Bholá DS. A review of strategies for validating computer-automated scoring. *Appl Meas Educ*. 2002;15(4):391–412.

36. Flodén J. Grading exams using large language models: A comparison between human and AI grading of exams in higher education using ChatGPT. *British Educational Research Journal*. 2025;51(1):201–24.

Discipline-Specific Policy

Principle: Policies on AI in education should be tailored to the distinct needs and requirements of each field of study, rather than employing a one-size-fits-all standard.

Concern(s):

- Generalized AI policies do not reflect the diverse ways AI can be used across different disciplines, leading to impractical or restrictive guidelines.
- Programs that rely on AI for research, data analysis, or creative work may face unnecessary limitations under broad institutional policies.
- A lack of program-specific AI policies increases the risk of inconsistent enforcement and confusion among students and educators.

Recommendation(s):

- McMaster University should develop AI policies that are tailored to the specific needs of each academic program, ensuring policies reflect the relevant applications of AI in different fields.
- Faculty members should be actively involved in shaping AI guidelines for their respective disciplines to ensure practical and pedagogically sound policies.
- AI use policies should be clearly communicated within each program, detailing permissible applications and restrictions in a way that aligns with disciplinary standards.
- McMaster University should provide ongoing resources and discussions to help students and faculty navigate AI integration in their specific academic contexts.

Analysis

Different academic disciplines utilize AI in vastly different ways, making a universal, one-size-fits-all AI policy impractical. Engineering and business students, for example, report significantly higher usage of generative AI tools compared to their peers in social sciences and health disciplines. Specifically, 76% of engineering students and 62% of business students report using AI at least some of the time, whereas only 41% of social sciences students and 40% of health students do the same³⁷. Figure 3 further illustrates this variation, showing that AI adoption is far more prevalent in tech-driven fields, while humanities and health sciences remain less dependent on AI-driven tools. Beyond tech-driven fields, Figure 4 explores how the perception of AI benefits increases as students advance in their undergraduate studies, showcasing how students continue to see their future careers becoming intertwined with AI as they get closer towards joining the workforce³⁸. Given these discrepancies, it is clear that AI policies must be discipline-specific to accommodate these different academic realities.

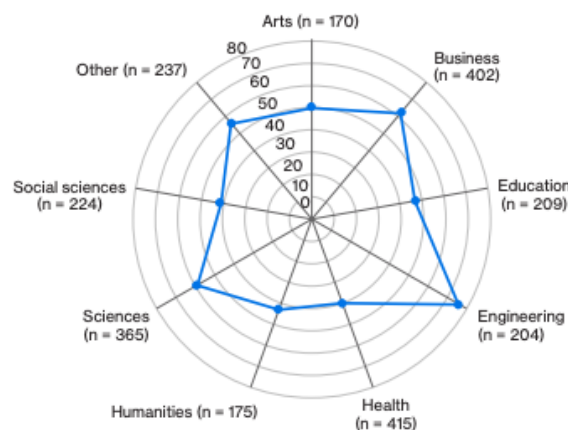


Figure 3: Uptake of Generative AI Across Different Fields of Study. Engineering students have the highest uptake, with 76% reporting usage at least sometimes, followed by business students at 62%. In contrast, lower adoption rates are observed in social sciences (41%) and health (40%). This illustrates how AI adoption is more prevalent in tech-oriented and business-related fields compared to humanities and health sciences³⁹.

37. Vanzella Yang A, Stadnicki DA. Who is using generative AI in higher education? Ottawa (ON): The Conference Board of Canada; 2024. Available from: https://www.conferenceboard.ca/product/generative-ai-higher-education_2024/

38. Almaraz-López C, Almaraz-Menéndez F, López-Esteban C. Comparative Study of the Attitudes and Perceptions of University Students in Business Administration and Management and in Education toward Artificial Intelligence. *Education Sciences*. 2023 Jun;13(6):609.

39. Vanzella Yang A, Stadnicki DA. Who is using generative AI in higher education? Ottawa (ON): The Conference Board of Canada; 2024. Available from: https://www.conferenceboard.ca/product/generative-ai-higher-education_2024/

Distribution by year and level of average answer to Likert question (1–5) regarding the statement "AI will play an important role in my field"

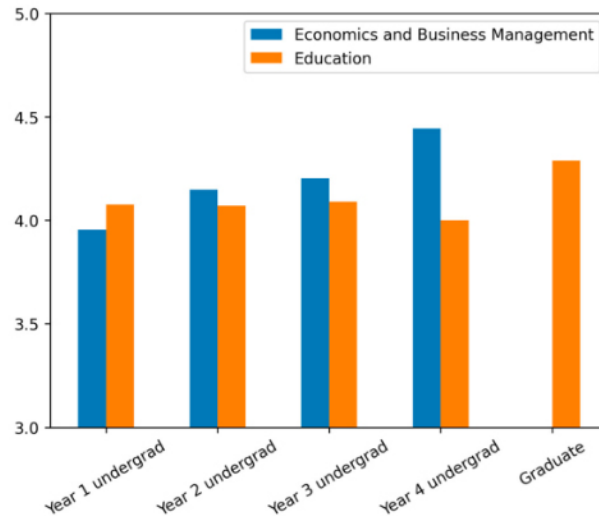


Figure 4: Perceived Importance of AI by Academic Year and Discipline. Average Likert scale responses (1–5) from Economics and Business Management vs. Education students on AI's role in their field, showing higher ratings among Economics students, peaking in Year 4⁴⁰.

Currently, McMaster University provides provisional guidelines that encourage educators to align AI use with program learning outcomes, but these remain recommendations rather than enforceable policies⁴¹. We advocate for making this a mandated policy to ensure that AI use is clearly defined within each academic program. The U15 Group of Canadian Research Universities endorses this strategy, pointing out that AI guidelines have to take into consideration the specific needs and purposes of every discipline in order to be relevant and applicable to both students and faculty⁴².

Faculty involvement in the development of AI policy is necessary. The International Center for Academic Integrity notes that different professions will have different ethical and practical expectations regarding AI use, further underlining the necessity of personalized guidelines based on faculty experience. Faculty are best positioned to determine how AI is used in their discipline and should develop guidelines that balance innovation with academic integrity.

40. Almaraz-López C, Almaraz-Menéndez F, López-Esteban C. Comparative Study of the Attitudes and Perceptions of University Students in Business Administration and Management and in Education toward Artificial Intelligence. *Education Sciences*. 2023 Jun;13(6):609.

41. Guidelines on the Use of Generative AI in Teaching and Learning [Internet]. Academic Excellence - Office of the Provost. [cited 2025 Mar 29]. Available from: <https://provost.mcmaster.ca/office-of-the-provost-2/generative-artificial-intelligence-2/task-force-on-generative-ai-in-teaching-and-learning/provisional-guidelines-on-the-use-of-generative-ai-in-teaching-and-learning/>

42. Press Release - U15 Canada publishes paper on the use of AI in academic teaching and learning - U15 Group of Canadian Research Universities [Internet]. [cited 2025 Mar 29]. Available from: <https://u15.ca/publications/statements-releases/press-release-u15-canada-publishes-paper-on-the-use-of-ai-in-academic-teaching-and-learning/>

Beyond just defining appropriate AI use, well-designed policies should acknowledge AI's potential as a valuable educational tool. A significant majority of students, 70%, report that AI has improved their academic performance, and 81% believe AI literacy will be critical for their future careers⁴³. AI has already begun to transform learning, acting as a virtual tutor for students who are struggling with coursework by providing personalized learning guidance and immediate feedback⁴⁴. Engineering students, for instance, have described AI as a “top student” in their classes, offering quick assistance when human help is unavailable. The efficient use of AI will become a crucial skill in different fields, making it all the more necessary to have discipline-based policies rather than blanket restrictions.

Students' perceptions of AI policies also influence their approach to learning. Research from Biggs (1999, 2011) suggests that students who feel confident in their understanding of educational guidelines and policies adopt a deeper approach to learning, making meaningful connections between concepts⁴⁵. Contrary to that, when the policies are uncertain or highly demanding, students only use the surface approach, pursuing only compliance, not real interaction⁴⁶. Providing clear AI policies tailored to specific disciplines would facilitate increased learning and enable students to employ AI in ways that supplement their learning experience rather than fear punitive consequences.

Moreover, policies should evolve in tandem with AI advancements. Studies by Flores-Vivar and García-Peñalvo argue that AI education should be continuously updated to present realistic use cases and limitations, ensuring students are equipped to use AI responsibly in their careers⁴⁷. UNESCO's framework for AI education reinforces this, emphasizing three pillars: learning with AI (utilizing AI tools in the classroom), learning about AI (studying AI technology), and being prepared for AI (equipping all students with AI literacy for professional application in the future)⁴⁸. Discipline-specific AI policies should integrate these educational principles to ensure students are not only using AI ethically but also gaining the necessary skills to navigate its evolving landscape.

Ultimately, universities must move away from blanket institution-wide guidelines and instead embrace field-specific AI policies that reflect the unique uses and challenges of AI in the disciplines. By mandating program-level AI policies crafted by faculty, institutions can offer students precise, relevant guidance that enhances education without compromising academic integrity.

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