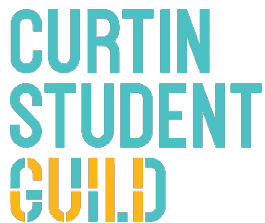


**A Submission to The House Standing Committee on Employment, Education and
Training inquiry into the issues and opportunities presented by generative Artificial
Intelligence (AI)**

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Submitted by the Curtin Student Guild

Dylan Botica, President, Student Guild
Veronika Gobba, VP - Education, Student Guild
Mitch Craig, PSC President, Student Guild



Introduction

The Curtin Student Guild was established in 1969 to provide essential services, represent the interests and advocate on behalf of students at Curtin University.

Acknowledgement

The Curtin Student Guild pays respects to the Aboriginal and Torres Strait Islander members of our communities. It acknowledges the Wadjuck people of the Noongar Nation and Wongutha people of the North Eastern Goldfields who are the first peoples of the land in which the Student Guild operates. This is stolen land that was never ceded.

Alternative Formats

This submission can be made available in alternative accessible formats upon request to hello@guild.curtin.edu.au

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Introduction

Generative AI refers to systems that can generate new content when prompted by an external source. This includes new text, images, software code, music and sounds.¹ Students and academics are coming to grips with AI, its potential and challenges. The sector is still finding its feet in terms of appropriate use, guidance for students and staff and the ramifications to learning, teaching and research. The most important consideration for higher education is that AI contributes to the learning environment, student experience and workplace readiness in a manner that enhances the quality of our education and research environments and adequately assesses and mitigates potential risks.

The strengths and benefits of generative AI tools for children, students, educators and systems and the ways in which they can be used to improve education outcomes

Generative AI has the potential to enhance the learning environment for students, as noted by many commentators. At the same time, there is recognition that adoption of AI in the workplace is gaining momentum and therefore universities are best placed to prepare their students for its use.

The ways in which AI can assist students include:²

- Personalised learning and tutoring
- Making complex concepts easier to understand through the use of user-friendly language, examples, mapping and visual interpretations
- Intelligent tutoring and real time feedback
- Improvements to the quality of hybrid and fully online learning environments with the use of, for example, virtual laboratories
- Reducing student workload when AI is used as a support tool
- Reducing accessibility barriers for some student cohorts
- Tasks such as finding a research problem of interest in a certain field
- Research, data collection and interpretation

The ways in which AI can assist academics to improve the learning experience for students include:

- Course design and improvement
- Innovation of teaching methods
- Preparation of student materials
- Intelligent education management
- The creation and improvement of hybrid and virtual learning environments
- Individualising course content for a personalised student experience

¹<https://www.allens.com.au/insights-news/insights/2023/05/the-AI-generated-picture-becomes-clearer-key-legal-considerations-emerging-for-generative-AI-developers-and-their-customers/>. Gavin Smith, Lewis Graham, Andrew Burns, Tracy Lu, Paul Mersiades 17 May 2023

²M. Abdullah, A. Madain and Y. Jararweh, "ChatGPT: Fundamentals, Applications and Social Impacts," 2022 *Ninth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, Milan, Italy, 2022, pp. 1-8, doi: 10.1109/SNAMS58071.2022.10062688.

- Enhanced industry cooperation
- Assistance with the grading of assessments and provision of some forms of feedback
- Analysis of student interactions across their learning can provide the opportunity to see which moments matter for student success

The future impact generative AI tools will have on teaching and assessment practices in all education sectors, the role of educators, and the education workforce generally

- There is potential for greater innovation which can lead to efficiencies in scale and costs - for example OpenLearning's integration of GPT 4 as an AI assistant in its platform is being trialled by partner universities including Western Sydney University ³
- Students could benefit from increased efficiency in the delivery of education services if their course fees were reduced and if the quality of education was improved by AI ⁴
- Universities will have to adapt to the introduction of AI and adjust their teaching methods and assessment parameters to ensure best outcomes for students ⁵
- AI led learning may reduce human interaction which may have negative social consequences ⁶
- Generative AI increases the risk of cheating which will mean that all types of assessment will have to be reviewed to ensure they are of high integrity and hence not intrinsically hindered by the presence of generative AI
- There is potential for disruption for academics and the potential of job losses which will negatively impact the student experience ⁸
- AI has the potential to reduce the workload of researchers "allowing them to devote more time and energy to conducting new experiments, promoting innovation, and achieving breakthroughs in multiple fields." ⁹

The risks and challenges presented by generative AI tools, including in ensuring their safe and ethical use and in promoting ongoing academic and research integrity

- Students may not understand how to appropriately use AI tools and be subject to academic penalties
- Teaching staff may not know how to implement the use of AI in a safe and ethical way given the relative infancy of the technology in education
- Students may become reliant on the AI tools to the exclusion of other learning techniques ¹⁰

³ AI will revolutionise education in an unexpected way. Tim Dodd. The Australian. 31 May 2023

⁴ <https://broneager.com/ai-and-academic-jobs>

⁵ Yu H (2023) Reflection on whether Chat GPT should be banned by academia from the perspective of education and teaching. *Front. Psychol.* 14:1181712. doi: 10.3389/fpsyg.2023.1181712

⁶ Foundation Models such as ChatGPT through the prism of the UNESCO Recommendation on the Ethics of Artificial Intelligence

⁷ M. Abdullah, A. Madain and Y. Jararweh, "ChatGPT: Fundamentals, Applications and Social Impacts," *2022 Ninth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, Milan, Italy, 2022, pp. 1-8, doi: 10.1109/SNAMS58071.2022.10062688

⁸ <https://www.linkedin.com/pulse/20-human-jobs-higher-education-potentially-impacted-ai-simon-ph-d/>

⁹ Yu H (2023) Reflection on whether Chat GPT should be banned by academia from the perspective of education and teaching. *Front. Psychol.* 14:1181712. doi: 10.3389/fpsyg.2023.1181712

¹⁰ Foundation Models such as ChatGPT through the prism of the UNESCO Recommendation on the Ethics of Artificial Intelligence

- AI generated information may contain factual errors, bias, and may not cover all areas of educational content which would lead to jeopardise learning outcomes if students and academics are not trained to utilize generative AI effectively¹¹
- Bias in AI data sets could go unchecked and become amplified¹²
- The quality of education and research may suffer if bias or incorrect information is incorporated in data sets¹³
- Misuse of AI by students has the potential to damage the academic reputation of universities¹⁴
- AI could lead to an increase in the number of low-quality research papers in circulation and jeopardise the integrity of academic publications¹⁵
- There is a danger that low quality research could be perpetuated in future AI data sets¹⁶
- Tools being used to detect the misuse of AI by students can be unreliable and might lead to students being falsely accused of cheating – especially for the international student cohort¹⁷
- Students' personal information could be included in AI data sets which have the potential to be hacked or misused¹⁸

How cohorts of children, students and families experiencing disadvantage can access the benefits of AI

- AI-powered tools can be used to provide personalized recommendations and resources which is especially helpful for underperforming students¹⁹
- Image recognition can be used to create visual representations allowing visually impaired, autistic individuals or students with visual learning preferences to get a better understanding of the material²⁰
- Brainstorming applications can assist students with ADHD to identify and structure their ideas
- Universities can analyse data from course assessments to gain insight into students' learning patterns and needs and use these insights to assist students²²
- Lip reading, enhanced feedback, captioning, virtual reality and hybrid and online learning are other AI functions that can remove accessibility barriers²³

¹¹ Foundation Models such as ChatGPT through the prism of the UNESCO Recommendation on the Ethics of Artificial Intelligence

¹² <https://www.icms.edu.au/news/academic/icms-response-academic-integrity-ai/>

¹³ Foundation Models such as ChatGPT through the prism of the UNESCO Recommendation on the Ethics of Artificial Intelligence

¹⁴ <https://www.icms.edu.au/news/academic/icms-response-academic-integrity-ai/>

¹⁵ <https://www.icms.edu.au/news/academic/icms-response-academic-integrity-ai/>

¹⁶ <https://www.icms.edu.au/news/academic/icms-response-academic-integrity-ai/>

¹⁷ <https://www.abc.net.au/news/2023-06-02/international-students-say-ai-detectors-are-inaccurate/102394894>

¹⁸ Yu H and Guo Y (2023) Generative artificial intelligence empowers educational reform: current status, issues, and prospects. *Front. Educ.* 8:1183162. doi: 10.3389/feduc.2023.1183162

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²⁰ Yu H and Guo Y (2023) Generative artificial intelligence empowers educational reform: current status, issues, and prospects. *Front. Educ.* 8:1183162. doi: 10.3389/feduc.2023.1183162

²¹ Exploring the Potential of AI in Enhancing Special Education Outcomes by Marcin Frackiewicz in *Artificial Intelligence*, TS2 Space 4 May 2023

²² Artificial Intelligence and Accessibility: Examples of a Technology that Serves People with Disabilities

International and domestic practices and policies in response to the increased use of generative AI tools in education, including examples of best practice implementation, independent evaluation of outcomes, and lessons applicable to the Australian context

There are numerous legal, ethical and social impacts of AI that require consideration in the higher education and wider setting.

The European Union's draft AI Act ²⁴ has outlined a framework where regulation is determined by the level of risk posed by the technology. There are strict transparency requirements and some AI is banned, such as real time facial recognition. Hefty fines will apply of up to €40 million or an amount equal to up to 7% of a company's worldwide annual turnover for breaches of the proposed legislation.

UNESCO made recommendations ²⁵ on the ethics of AI in 2021 which were adopted by 193 member states. A recent policy paper ²⁶ clarifies and highlights some of the risks associated with AI use, especially ChatGPT, and suggests a mitigation framework.

Deakin University has established high level principles to provide direction to researchers in the use appropriate of AI. The guidelines include advice on uploading content, adhering to academic standards and requirements to evaluate content for bias. Researchers should not use AI to peer review work or assess HDR candidates. ²⁷

In the UK, the Russell Group of universities has developed five (5) guiding principles for AI use: ²⁸

- Universities will support students and staff to become AI-literate
- Staff should be equipped to support students to use generative AI tools effectively and appropriately in their learning experience
- Universities will adapt teaching and assessment to incorporate the ethical use of generative AI and support equal access
- Universities will ensure academic rigour and integrity is upheld
- Universities will work collaboratively to share best practice as the technology and its application in education evolves

Recommendations to manage the risks, seize the opportunities, and guide the potential development of generative AI tools including in the area of standards

²³ European Union's draft AI Act

²⁵ Recommendations of the Ethics of Artificial Intelligence. UNESCO. 2021

²⁶ Foundation Models such as ChatGPT through the prism of the UNESCO Recommendation on the Ethics of Artificial Intelligence

²⁷ Universities need to provide more guidance for use of AI in research. The Australian. 2/7/23. Matthew Clarke, Jeanette Fyffe, Peter Murphy, Kristy Fickinger

²⁸ https://russellgroup.ac.uk/media/6137/rg_ai_principles-final.pdf

A regulatory environment that provides safeguards, consistency and sustainability is required to support students, academics and researchers navigate and benefit from its application ²⁹

Data privacy and security should be incorporated into the development and application standards of generative AI, to promote the sustainable development of generative AI. ³⁰

Assurances about the quality, quantity and diversity of datasets used in AI are important to prevent inaccuracy, bias and ensure its applicability to a wide range of student cohorts.

Students should be taught how to use AI correctly and effectively to ensure the integrity of their learning journey. ³¹

Regulation, policy and legislation must be developed in collaboration with peak student representative bodies.

Conclusion

AI will lead to profound changes in the way we learn, work and live. It is revolutionary, disruptive and full of unknowns. In the education sector it will have numerous impacts on the way students learn, what students learn and how they are assessed. Academics will be challenged to adapt their teaching, assessments and research models. Universities have the dual role of developing protocols for guiding their staff and students through appropriate and potentially innovative use of AI while safeguarding academic integrity and the quality of their students' learning experience. AI presents so much opportunity and must be harnessed. Such transformative change will need the oversight of Government regulation to help ensure that the benefits outweigh the potential for misuse and any negative societal and cultural consequences.

²⁹ Yu H and Guo Y (2023) Generative artificial intelligence empowers educational reform: current status, issues, and prospects. *Front. Educ.* 8:1183162. doi: 10.3389/feduc.2023.1183162. Yu H (2023) Reflection on whether Chat GPT should be banned by academia from the perspective of education and teaching. *Front. Psychol.* 14:1181712. doi: 10.3389/fpsyg.2023.1181712

³⁰ Yu H and Guo Y (2023) Generative artificial intelligence empowers educational reform: current status, issues, and prospects. *Front. Educ.* 8:1183162. doi: 10.3389/feduc.2023.1183162

³¹ Yu H (2023) Reflection on whether Chat GPT should be banned by academia from the perspective of education and teaching. *Front. Psychol.* 14:1181712. doi: 10.3389/fpsyg.2023.1181712