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Inquiry into the use of generative artificial intelligence in the Australian education system

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Inquiry into the use of generative artificial intelligence (AI) in the Australian education system

Executive Summary

Australian Catholic University (ACU) welcomes the opportunity to respond to the Australia Government's House of Representatives Standing Committee on Employment, Education and Training inquiry into "the issues and opportunities presented by generative artificial intelligence (AI) for Australia's early childhood education, schools, and higher education sectors" (the Inquiry).

ACU's response focuses on the first four terms of reference (TOR):

1. *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.*
2. *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.*
3. *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.*
4. *How cohorts of children, students and families experiencing disadvantage can access the benefits of AI.*

ACU views generative AI as a positive, indeed transformative, tool in education that nevertheless presents distinct challenges for maintaining academic integrity and scholarly standards to ensure essential skills and knowledge are acquired by students.

ACU views these challenges as not insurmountable. Arguably, it is short sighted to prohibit from assessment a technology that will soon become a dominant feature of students' working lives. For ACU, the challenge lies in allowing students to become familiar with applications of the technology, even using it to assist in preparing assessed work, while ensuring that learning outcomes and course objectives are assured. It is important not to let generative AI stifle the generation of individual thought, so that the technology enhances, rather than replaces, human creativity.

ACU is working to determine the right balance in student use of generative AI. These tools undoubtedly have the potential to change teaching and improve educational outcomes, so long as they are used appropriately and responsibly.

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TOR 1

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

Generative AI offers considerable potential for improving outcomes for students, educators, and educational systems. For students, they have the potential for better understanding of subject content and requirements, where generative AI can:

- present and summarise concepts for students,
- help them organise their ideas,
- assist their research (remembering that students need to independently verify and critically analyse all information), as well as
- outline study plans and assist with essay structure and technique.

For staff, generative AI has the potential to help with:

- creation of educational content ideas to enrich teaching materials, and
- automation of routine tasks such as data analytics and content reviews, to free up time for instructional planning and individual student needs.

For some of ACU's students drawn from disadvantaged backgrounds where there is less access to economic, educational, and social capital, generative AI has provided structured examples of academic genres and feedback on technical aspects of text production to increase their confidence and potential for academic success.

In summary, ACU sees generative AI, when used appropriately, responsibly, and ethically, as holding significant potential both for students and their teachers to work more effectively. Generative AI will not replace a student's deep understanding of a field of study, or how to nuance a text for a particular audience, but it will assist their comprehension of academic content and provide access to a broader range of ideas. The challenge is finding the right balance between the use and abuse of AI in student work.

TOR 2

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.

Generative AI will have a profound impact on teaching and assessment practices across all education sectors, transforming the role of educators and shaping the education workforce of the future. For example,

1. These tools can analyse vast amounts of data to understand students' strengths, weaknesses, and learning styles, generating customised content and assessments.
2. They can help educators gain a deeper understanding of students' learning trajectories, enabling targeted interventions, and improving overall teaching practices.
3. They may eventually provide interactive simulations and virtual reality experiences quickly and easily, providing a much more immersive learning process for students.

An example of education systems already having to adapt to generative AI is around assessment. Like the thesaurus, calculator, and internet before it, the use of generative AI will soon become an accepted, and even expected tool in the workforce. In this environment, an educator's role will be to assist students to learn how best to use these tools, rather than prevent their use entirely.

As a corollary, if the learning outcomes of traditional assessment items can be easily met by AI, then assessments need to be adapted so students can demonstrate higher order thinking, creative problem-solving and contextual application of knowledge and skills. For example, many of ACU's students will enter the health professions, with essential skills and key knowledge that may have life-changing consequences for their patients. Health will be one of the first areas profoundly affected by generative AI. Similarly, teacher education students can learn how to use generative AI to enable personalised learning in the classroom. This technology will be become one more tool that teachers can use to support diverse learning needs ranging from struggling students to gifted students. In addition, content can be modified by this technology to connect to students' diverse social and cultural understandings.

This paradigm shift involves moving away from some traditional forms of assessment, towards forms that require demonstration of knowledge integration, ethical practice, and relational skills. Educators' role will, more than ever, be to foster students' critical thinking and creative problem-solving skills.

As generative AI becomes part of normal professional practice, students may be required to use AI generated work as an opportunity for review and critique to produce more sophisticated responses to assessment tasks. For example, teacher education students can take AI generated lesson plans, and then modify them for specific classroom contexts and individual learning needs.

TOR 3

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.

Generative AI presents certain risks and challenges that require careful consideration. Ensuring safe and ethical use is paramount, as these tools may perpetuate biases (by inheriting biases from the data they are trained on) while also threatening academic and research integrity by encouraging academic misconduct. Striking the right balance between properly acknowledged AI-generated material and original work is essential to preserve academic rigour and uphold scholarly standards.

From ACU's perspective, the rapid availability of AI, and the equally rapid advancements in this field, are already evident in student work. ACU's experience in the first semester of this year where generative AI has been widely available and has experienced large-scale public awareness, has been to see a reduction in the number of assessments put together by 'copying-and-pasting' from a variety of online sources, to be replaced by assessments that appear to be entirely AI generated.

Presently, many of these cases are relatively easy to detect, due to references being absent or irrelevant, the inclusion of off-topic discussions, or the incorporation of incorrect information. Yet this detection will undoubtedly become harder as the technology improves.

Currently, while ACU has implemented some changes, such as updating our Student Academic Integrity and Misconduct Policy and Procedures to address use of generative AI, the early stage of this technology means their full implications are not yet reflected in ACU policies. This means, for example, that ACU has not yet introduced rules and procedures for all the innovations and challenges that AI presents, including the use of innovative assessments that incorporate the properly acknowledged use of generative AI.

ACU's view is that while universities need to be extremely vigilant to maintain the integrity of degree programs and ensure that graduates meet course learning outcomes, there is a role for generative AI to play in the assessment and learning process. A program of research to monitor the impacts of this technology and its applications across settings would provide much needed evidence of the most effective teaching and assessment practices in this new context. ACU's new STEM Centre for Education Excellence will include a program stream on generative AI in education.

TOR 4

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

As mentioned in response to TOR 1, ACU has seen how generative AI can potentially help students from low SES backgrounds. Such tools can provide support in understanding course content and can deliver personalised feedback, on demand and as often as needed, on the communication of ideas and technical writing skills.

Generative AI will likely follow the path of technology from the printing press to the internet in playing a transformative role in bridging educational gaps and promoting inclusivity.

For generative AI, a first step is to address the digital divide, where some students have ready access to relevant devices and internet connectivity, while others do not.

At ACU, we are developing resources to assist both staff and students to use AI tools. Once generative AI is incorporated into the Microsoft office suite (which is likely to happen soon), then all ACU students will have access to the benefits of AI.

As a compelling complement to other forms of support, ACU views generative AI as a powerful tool to enable disadvantaged students to overcome barriers and achieve equitable educational outcomes.

Appendix A: Australian Catholic University Profile

Australian Catholic University (ACU) is a publicly funded Catholic university, open to people of all faiths and of none and with teaching, learning and research inspired by 2,000 years of Catholic intellectual tradition.

ACU operates as a multi-jurisdictional university with seven campuses across three states and one territory. Campuses are located in North Sydney, Strathfield, Blacktown, Canberra, Melbourne, Ballarat, and Brisbane. ACU also has a campus in Rome, Italy.

ACU is the largest Catholic university in the English-speaking world, with over 33,000 students and 2,300 staff.[1]

ACU graduates demonstrate high standards of professional excellence and are also socially responsible, highly employable and committed to active and responsive learning. ACU is the number one university in the country when it comes to graduate employment outcomes three years after graduation, with a 95.5 per cent employment rate.[2]

ACU has built its reputation in the areas of Health and Education, educating the largest number of undergraduate nursing and teaching students in Australia[3] and serving a significant workforce need in these areas. Under the demand driven system, ACU sought to focus and build on these strengths.

ACU has four faculties: Health Services; Education and Arts; Law and Business; and Theology and Philosophy.

As part of its commitment to educational excellence, ACU is committed to targeted and quality research. ACU's strategic plan focuses on research areas that align with ACU's mission and reflect most of its learning and teaching: Education; Health and Wellbeing; Theology and Philosophy; and Social Justice and the Common Good. To underpin its plan for research intensification, ACU has appointed high profile leaders to assume the directorships, and work with high calibre members, in six research institutes.[4]

In recent years, the public standing of ACU's research has improved dramatically. The last Excellence in Research for Australia (ERA) assessment (in 2018) awarded ACU particularly high ratings in the fields of research identified as strategic priorities and in which investment has been especially concentrated. For example, ACU more than doubled the total number of top scores of 5 (well above world standard) in the 2018 ERA.

[1] Student numbers refer to headcount and staff numbers refer to full-time equivalent (FTE).
[2] QILT (August 2020), 2020 Graduate Outcomes Survey – Longitudinal (GOS-L).
[3] Department of Education and Training, *2021 Higher Education Data Collection – Students, Special Courses*. Section 8, table 8.3.
[4] Australian Catholic University, Research and Enterprise, https://www.acu.edu.au/research-and-enterprise.