Australian National University

10 May 2024
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ANU
[redacted]

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Senator Tony Sheldon
Chair – Select Committee on Adopting Artificial Intelligence
Parliament House
Canberra ACT 2600
VIA ONLINE SUBMISSION

ANU Submission to Senate Select Committee on Adopting Artificial Intelligence (AI)

Dear Chair,

The rise of Artificial Intelligence (AI) has commanded global attention and is reshaping the world in which we operate. Already we are witnessing profound challenges in the realms of education and research. If we are to live up to the aspiration expressed in the ANU's Strategic Plan ANU by 2025 to be "a trusted national institution", it is critical that the ANU confront these challenges and understand both the opportunities and risks that AI represents.1 To this end the ANU has, for decades, dedicated a substantial part of its intellectual resources to better understanding "the opportunities and impacts for Australia arising out of the uptake of AI technologies in Australia"2 and is committed to making available to the nation the outcomes of this work. This submission focuses on the risks and opportunities arising from the adoption of AI technologies in higher educational contexts.

Recent trends and opportunities in the development and adoption of AI technologies in Australia and overseas, in particular regarding generative AI

ANU Institutional Principles on Artificial Intelligence[3]

A key step for ANU was to establish its own set of principles to ensure that we harness the benefits and manage the threats in ways that align with our fundamental values as an

[1] Item 28 "Artificial Intelligence – ANU Institutional Principles" Agenda Pack for AB 6/2023, p.93.
[2] Senate Committee TOR.
[3] Item 28 "Artificial Intelligence – ANU Institutional Principles" Agenda Pack for AB 6/2023, p.93.

institution. A set of principles was approved in December 2023 and are at Attachment A to this submission.[4] In developing these principles for ANU, existing guidance from a wide range of sources was reviewed, including that provided by Universities Australia, the Group of Eight, the Australian Research Council, TEQSA, and various submissions to the Federal Government's Inquiry into the Use of Generative Artificial Intelligence in the Australian Education System. The principles distil some of the common insights from this body of thought, but also reflect our position as the national university and the responsibilities that entails. They reflect our best understanding at this current time.

The principles provide high-level frameworks to support the development of future policies and strategies for the appropriate and ethical use of AI by students and staff across education and research. Such principles can provide both assurance and direction at a time when the full impact of AI on research and teaching is not yet known. They may also provide confidence that we can move forward in our explorations around AI while affirming our core values. It is intended that a clear plan for the continued development of practical advice for staff and students in relation to AI be the immediate next step.[5]

Risks and harms arising from the adoption of AI technologies, including bias, discrimination and error

ANU acknowledges that generative AI is here to stay and see lots of possibilities for its use in education and in other aspects of university operations in the future.

The main risks facing higher education in the context of generative AI, centre around the themes of academic integrity and standards, support and safety and adoption and usage.

As an education institution, we need to address the risk that generative AI poses to academic integrity, whilst ensuring that as we adopt generative AI, we have a coherent response that is underpinned by principles, governance and strategy. Foundations to enable our students and staff to learn the responsible, safe and ethical ways in which generative AI can be used need to be established. These risks and challenges are further explained below:

- Academic Integrity is and has been a key issue for the sector and area of focus for the ANU. The advent of generative AI adds an unpredictable dynamic to our integrity

[4] See Attachment A, *ANU Institutional Principles on Artificial intelligence*, December 2023.
[5] The university regulator, TEQSA, has issued a guidance note that governance bodies of universities, including Councils and Boards should be engaged in the development of any university-wide approach.

approaches, but ultimately, we need to ensure that AI enabled cheating is proactively addressed. However, detecting student use of AI tools is a complex challenge as;

- Current detection tools raise concerns about privacy, equity and data security[6].
- There is lack of evidence to show effectiveness of these tools due to:
  - False positives and negatives: These tools can mistakenly identify human-written work as AI-generated (false positives) or miss AI-generated text entirely (false negatives);
  - Rapid advancements in AI: Detection tools are unlikely to keep pace with the constant development of AI technology.

- Critical skills development in the safe and responsible use of generative AI is extremely important as it relates to the credibility and integrity of university qualifications:
  - We need to ensure that our students and graduates remain highly knowledgeable, skilled and sought after in the employment market and as scholars in their fields of expertise. To do this we need to continue to support generative AI and grow and evolve our curriculum and assessment design with generative AI as a tool for the future.
  - In the context of bias, discrimination and error, we must educate our students about generative AI, so that they can develop, during transition to university and over the course of their degree, a critical understanding of generative AI technologies, their uses and limitations. For instance it is known that generative AI can be:
    - Occasionally incorrect: information and facts produced by the product are remarkably accurate, but are always stated with certainty despite being sometimes wrong.
    - Biased: all datasets contain some form of bias, and generative AI will reflect any biases contained in its training data. This is of particular concern because if not managed these biases can perpetuate a range of issues, such as societal inequalities.
    - Often lack-lustre: the outputs tend to be reasonably generic and lack the colour, nuance, personality and elegance that writing should have. Topics or questions that are complex, abstract, or require a deep understanding of a particular context can be particularly challenging for the current AI tools.

[6] ANU turned off the AI detection tool in 2023 when it was introduced by the vendor. Following a thorough assessment, it was decided that ANU would not use this particular tool.

        - Reliant on the input: writing effective prompts is a skill that requires practice. Despite these limitations, outputs are very likely to be of reasonable quality and unique every single time, making them essentially undetectable.
- Addressing Generative AI proficiency in the staff cohort is equally important and needed. We need to ensure that staff, through information, guidance and training are aware of the rules and limitations of generative AI. However, we are limited by the number of AI tools that have been adopted by the institution for mainstream use. This limitation hinders broader adoption and usage.
- Given the rate of development there is an ongoing need to ensure that guidance and support for material for students and staff are regularly maintained, updated and reviewed.
- Robust governance and legislative compliance is key to ensuring that the University maintains high levels of confidence and trust with key stakeholders, allowing us to deliver our mandate as Australia's national university

Emerging international approaches to mitigating AI risks in education

ANU has undertaken a range of activity to mitigate the risks raised by generative AI. ANU did not ban Chat GPT when it was launched in 2023 owing to the diversity of approaches taken by different academics. Some academic staff had been using these tools for a while in their courses and may use it in assessments. Whereas other staff will be clear that the use of ChatGPT is not permitted in their courses.

At ANU we have robust measures in place to prevent academic misconduct and detect potential incidents. These measures include sophisticated assessment design and verifiable assessments such as nested assessments, assessments based on laboratory activities, practicums and fieldwork, timed assessments, oral presentations and invigilated examinations. We continue to invest in these measures and systems.

All students at ANU are given very clear information about academic integrity, why it matters and how they can ensure they uphold this integrity in all their academic work. The University has an academic integrity rule all students are expected to abide by. We are updating our guidance to reflect the presence of AI, as well as relevant policies and procedures around academic integrity and assessment.

Building on our current policies and approaches and in addition to the ANU institutional Artificial Intelligence Principles approved in December 2023, ANU's Academic Board also

approved the ANU Learning and Teaching Strategy in October 2022 which is '*designed to help define and communicate our distinctive approach to learning and teaching, to guide how organisational energies and resources should be applied, and to identify the skills, competencies, systems and supports we need to have in place to secure our position as a leading university. Together with the new* Curriculum Framework[7]*, this strategy provides clarity on our overall educational direction'* (ANU Learning and Teaching Strategy, p.3).

Work is underway through the ANU's Centre for Learning and Teaching to strengthen assessment and feedback through a process of assessment redesign and improved learning design over the course of 2024-2026. The Centre is offering workshops and training session for ANU Colleges and produced an AI quick-start guide resource aimed at guiding academic staff through the first few weeks of semester. In addition, in a recent round of Strategic Learning and Teaching Grants the university has funded two projects that explore how artificial intelligence can complement and contribute to supporting students in the delivery of education and learning and teaching[8].

In 2024 the ANU Academic Board approved the new ANU Employability Framework which articulates the University's responsibilities as to support our students not just with their future employment in mind, but as "socially responsible citizens and potential leaders" (ANU L&T Strategy, p. 15). The Framework will provide opportunities for engaging with industry to better understand usage, risks and opportunities of AI in the workplace including in Work Integrated Learning (WIL). These connections are important and will help to ensure our graduates have skills necessary to critically assess risks and harms arising out of AI technology, as well as the benefits and opportunities.

Throughout the remainder of 2024 and in an ongoing capacity, ANU will continue to work with the experts in our sector domestically and to address and enhance our institutional response to AI. Of particular significance, the work with TEQSA is expected to be very helpful as it will enable to regulator to better understand and share different approaches across the sector to further help and identify opportunities to mitigate risks presented by generative AI.

Sincerely,

Professor Grady Venville,

Deputy Vice-Chancellor (Academic)

[7] The curriculum framework was approved in November 2023.
[8] The first project explores *Developing a Generative Machine Intelligence to Support Teaching and Learning in a First Year Business Information Systems Course* and the second project investigates *Artificial Intelligence in Health & Well-being Education*

Attachment A

Australian National University

[redacted]

Artificial Intelligence – ANU Institutional Principles

1. We will maintain our commitment to excellence and integrity in teaching, learning, assessment and research as the applications of AI in university settings evolve.

2. We will maintain our critical engagement with AI as a stream of research and we will encourage exploration and innovation in these technologies.

3. We will communicate clear guidance on the responsible and ethical use of AI technologies for our staff and for our students, and we will be explicit where rules or expectations differ according to discipline or role.

4. We will ensure that our students and our staff have the support they need to become AI literate and we will produce graduates with the knowledge and skills to operate effectively and ethically in an AI informed world.

5. We will ensure appropriate access to AI technology for education and research with applications consistent with the university's commitments to cybersecurity, privacy, safety, equity and inclusiveness.

6. We will draw upon the expertise within the ANU to support future AI strategy and policy development and we will work collaboratively with others across the sector as we seek to understand the wider implications of AI for society and culture.

Approved by Academic Board 6/2023 - 28 November 2023