Universities Australia's submission to the Senate Inquiry on Adopting Artificial Intelligence

Universities Australia (UA) welcomes the opportunity to submit a response to the Senate Select Committee on Adopting Artificial Intelligence (AI)'s inquiry into Adopting Artificial Intelligence (AI). Our members, Australia's 39 comprehensive universities, are increasingly adopting AI tools in research and teaching as well as deepening their knowledge of the possibilities and risks arising from the uptake of AI technologies. They are uniquely placed to explore the opportunities of AI, identify what best practice for the sector may look like and subsequently provide guidance on how to safely include AI tools in research and teaching practices.

To support this effort, UA has established two working groups focusing on AI in teaching and AI in research, bringing together senior leaders and experts in the sector to lead and advise on constructive and ethical use of AI. AI is rapidly growing, and Australia's universities are committed to ensuring that their response evolve accordingly.

UA has considered the inquiry's terms of reference and will make the following recommendations and comments on how Australia's universities can support opportunities and impacts for Australia arising out of the uptake of AI technologies:

- Universities should retain autonomy to provide guidance on AI use (section 1) and training to staff and students (section 2),
- Australia is currently investing less in AI research capabilities, putting us at risk of falling behind our peers (section 3),
- Global responses to AI regulation can inform the government's approach (section 4),
- Universities are key to developing an AI literate workforce (section 5), and
- Indigenous people must be at the centre of AI adoption conversations (section 6).

1 Universities are best placed to offer AI guidance

In July 2023, UA made a submission to the House Standing Committee on Employment, Education and Training's inquiry into the use of generative AI in the Australian education system.[1]

The submission outlined the benefits of using AI tools in research and teaching, such as boosting productivity, improving efficiency through supporting students conducting background research for a literature review and helping researchers write grant applications.

[1] UA Submission to the House Standing Committee's Inquiry into the use of generative AI, July 2023. https://universitiesaustralia.edu.au/submission/submission-to-the-inquiry-into-the-use-of-generative-artificial-intelligence-in-the-australian-education-system/

The key benefit of using AI as part of research is that it can enhance productivity – using AI can speed up administrative tasks, freeing up researchers' time to do more impactful research. It can help improve grammar and sentence construction and explain problems or areas new to the researcher. For our students, AI tools can help developing their digital literacy and enable personalised learning experiences.

The sector is acutely aware of the risk overreliance on AI poses, in particular with respect to academic integrity, which is at the heart of teaching and learning activities as well as research. As such, the sector offers guidance to staff and students on ethical use of AI and is constantly revising this as our understanding deepens.

In its submission, UA made the case for universities retaining autonomy to ensure that AI tools are appropriately used by staff and students through internal policies and guidance. UA also acknowledges that as our knowledge of AI and its impacts evolves, greater regulation may be appropriate in the higher education sector.

For now, the university sector is uniquely placed, given its role as an early adopter of AI tools for knowledge generation, to determine what best practice looks like and ensure that these tools are used appropriately.

Example: Supervisory guidance of HDR students mitigates risk of cheating

Since the introduction of platforms such as ChatGPT, education providers have grappled with how to assess learning outcomes. Detecting the use of AI can be hard. Concerns around students being awarded their qualification without having acquired the skills and knowledge due to the use of AI tools have been growing.

Universities have guidance in place around good practice for the supervision of Higher Degree by Research (HDR) students. This is accompanied by training of supervisors, to ensure all students receive supervision of the highest standard. Good supervisory practice includes, among other things, appropriate mentoring and support underpinned by regular contact between supervisor and candidate.

A key outcome of this is that supervisors are well placed to be able to detect early in the process if AI is being used inappropriately. In this sense, good supervisory practice mitigates the risk the use of AI tools poses to assessment of HDR students.

Universities have a responsibility to ensure that AI is used in an ethical, transparent and professional way within their institutions, while also continuing to engage with the tools to develop general capabilities and skills of staff and students.

UA believes that AI tools have the potential to revitalise how we do research and how we teach the future workforce. As a sector, we need to engage with the development in technology rather than restricting it to reap the benefits.

As an innovation sandbox, the sector is uniquely positioned to explore the possibilities of AI and develop and refine solutions and approaches in a safe space.

Example: An evolving approach to ethics

One example of how the sector can lead on mitigating the risk of AI is on research ethics. Responsible and ethical research is fundamental to all research projects at universities. With the rise of AI technologies, we need to consider AI in the context of ethics. Currently, it focuses on research on humans and animals and is guided by three key documents:

- the Australian Code for the Responsible Conduct of Research 2018,
- the National Statement on Ethical Conduct in Human Research, and
- the Australian code for the care and use of animals for scientific purposes.

These documents provide the integrity framework and explain what is expected of researchers by the community. They have been jointly developed by the National Health and Medical Research Council, the Australian Research Council and Universities Australia. Given the evolution of AI and other emerging technologies, we need to rethink our approach to ethics in Australia to factor in that our ethics framework is not so binary.

This is an opportunity to take a look at research ethics and advance approaches which recognise new and critical technologies, machine ethics as well as the connections generation between human and animal ethics.

While the sector should lead this work, strong partnership with the Government will be critical to ensure that our research ethics framework is reflective of the challenges to ethics AI poses.

2 More training on how to use AI tools would be welcomed

While it is often assumed that AI tools are widely used, including in the higher education sector, there is little evidence that demonstrates the extent of the use of AI tools by academics or students.

We still have a limited systemic understanding of how research and administrative staff use AI tools as part of their work, and more importantly what challenges and barriers there may be associated with adopting AI tools.

As outlined in the textbox below, work underway led by Queensland University of Technology shows that only two in five university staff feel confident using AI in their work. This suggests a potential need for further training and awareness raising activities.

While the focus of the study is on higher education, it is likely that knowledge workers in particular, across many industries and areas of the Australian economy, would be similarly motivated to improve their awareness of AI tools that could create efficiencies in their work, develop more confidence in the use of specific AI tools relevant to their roles, and gain literacy in AI functions in order to use AI ethically.

Example: National Survey underway on how Australian university staff use AI

A search of published and grey literature indicates there is no systematic, large-scale evidence for the extent to which, or how, Australian university staff currently use AI tools in their work. This is also the case internationally.

However, a national survey is currently being undertaken which will address this gap in understanding. Led by a research team of social scientists comprising Paula McDonald (Pro Vice Chancellor Research, QUT), Prof Abby Cathcart (Director Student Success & Teaching Advancement, QUT) and Dr Stephen Hay (School of Education and Professional Studies, Griffith University), the study aims to estimate the impact of AI on research, teaching and administration; identify AI-driven practices in specific domains (e.g., assessment, learning analytics, student support, data analysis); and inform higher education policy and practice.

Around half of the TEQSA-registered Australian Universities are participating in the study so far and findings from across the sector will be disseminated in the second half of 2024 and may be available for communication to the Committee prior to reporting to Parliament in September. Early results indicate that:

- Almost a third of university staff (32%) have never used Gen AI in their work,
- A higher proportion of academic staff (77%) than professional staff (64%) use AI,
- Nearly 40% of staff agree or strongly agree they are concerned about being left behind in the use of AI,
- 58% agree or strongly agree that certain types of university roles are likely to be lost as a result of AI,
- Almost half (47%) believe that AI has the potential to increase educational disadvantage amongst university students,
- Around 40% of staff indicate Gen AI has impacted the productivity of their work moderately or substantially, and
- The most common AI tools used by staff were Gemini, ChatGPT 3.5, ChatGPT 4 Plus, Microsoft Co-pilot, Grammarly, Otter.AI, Midjourney, and Dalle.3. However, staff reported using more than 60 different AI tools.

3 Investing in Australia's AI research capabilities

Australia produces 1.6 per cent of published research into AI globally, and 22 per cent of Australian AI research is in the top 10 percent of published research. This is a higher proportion than the US (21 per cent) and China (16 per cent), who are undertaking the bulk of the world's AI research.

Overall, our AI research ecosystem is growing with Australian companies also increasing their research efforts. However, there is still a challenge associated with turning knowledge into commercial products in Australia. Despite undertaking 1.6 per cent of AI research, Australia only contributes to 0.2 per cent of global AI patent inventions.

Australia has the skills and capabilities to be world leading on AI research and we have a unique opportunity to bridge key gaps in the development of AI technologies, improving Australia's competitiveness in a rapidly evolving area. But our investment in this area as a country is not on par with our global competitors.

A recent report issued by the Australian Academy of Technology and Engineering and the Australian Institute for Machine Learning at the University of Adelaide suggests a figure of A$1 billion be set aside for integrating AI into industry to ensure Australia is not falling behind its peers, instead of the $100 million announced as part of the 2023-24 Budget.[2]

In comparison, the Canadian government invested A$500 million in 2021 to support AI commercialisation, standards, talent and research, and the Singaporean government has invested A$565 in AI research and development over five years.

4 Using international experiences to guide Australia's regulatory treatment of AI

In January 2024, the Government, via the Department of Industry, Science and Resources, released its interim response to its 2023 consultation paper on safe and responsible AI in Australia.

The response outlines the Government's intent to adopt a risk-based approach to the regulation of AI, by regulating the development, deployment and use of AI in high-risks only while lower-risk settings are being allowed to "flourish largely unimpeded".

The Government acknowledges that current legal and regulatory frameworks are not fit-for-purpose, but that comprehensive regulation of AI is difficult due to the constantly evolving nature of the technology.

It is not clear how the Government will approach this, and it may be in Australia's interest to watch the experiences of other jurisdictions, such as the European Union, the United States and China, and how the regulation of AI is implemented. The different approaches to AI regulation outlined below reflect national values and priorities.

[2] Responsible AI: Your questions answered. Australian Academy of Technological Sciences and Engineering (ATSE), and the Australian Institute for Machine Learning (AIML) at The University of Adelaide. Canberra, Adelaide 2023 https://www.atse.org.au/research-and-policy/publications/publication/responsible-ai/

Example: Approaches to AI regulation: China, the US and European Union

The United States of America
The US has taken a light-touch and market driven approach based on voluntary guidelines (such as NIST AI Risk Management[3]) and self-regulation by industry. However, in October 2023, President Biden issued an Executive Order on 'Safe, Secure and Trustworthy Development of the Use of AI', a more serious attempt to regulate AI by setting standards for AI safety and security, protecting citizens and consumers and ensure effective government use of AI. The EO was received positively by both parties and industry and was considered by experts as a good first step, but there is a long way to go on implementation.

China
China is considered the first country in the world to react legislatively on generative AI. The government has released pieces of legislation as new AI products become prominent, but they are yet to release legislation regulating AI as a whole. Last year, it was announced that an "AI law" was on the agenda, like the AI Act in Europe. Contrary to what many may believe, AI regulation in China has not been driven by top-down acts from the CCP leadership.[4] Instead, the key players in shaping China's AI regulations have been internal and external actors, academic, technologists and journalists. However, the Chinese government is very involved in overseeing the development and growth of AI products, i.e. any AI models must be registered with the government before it can be released to the Chinese public.

European Union
The EU has passed the first AI Act in the world. It is the first comprehensive regulation on AI and will likely serve as a global standard for regulations. The Act will split applications into three categories of risk: First, applications and systems that create an unacceptable risk, such as government-run social scoring of the type used in China, are banned. Second, high-risk applications, such as a CV-scanning tool ranking applicants, are subject to specific legal requirements. Lastly, applications not explicitly banned or "high-risk" are largely unregulated.[5]

5 Building an AI literate workforce

As AI is growing, a huge task lies ahead in increasing AI literacy. Digital literacy has become increasingly important as we pivot towards more technologies in our lives. With the rise of AI, digital literacy must focus specifically on equipping individuals with the appropriate knowledge and skills to understand and use the tools ethically. More importantly, individuals must learn to evaluate the tool they use, such as viewing its output critically and understanding the tool's limitations and ethical and privacy considerations.

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[3] National Institute of Standards and Technology, UA Department of Commerce. AI Risk Management Framework. https://www.nist.gov/itl/ai-risk-management-framework
[4] Sheehan, M. (2024). Tracing the Roots of China's AI regulations. Carnegie Endowment for International Peace. https://carnegieendowment.org/2024/02/27/tracing-roots-of-china-s-ai-regulations-pub-91815#:~:text=China%20is%20regulating%20AI%2C%20and,transformative%20technologies%20of%20our%20time.
[5] European Parliament. Artificial Intelligence. https://www.europarl.europa.eu/topics/en/topic/artificial-intelligence

Universities are already teaching digital literacy. As such, expanding the digital literacy agenda to include awareness of AI tools' opportunities and limitations is a natural next step. Universities will play a critical role in preparing our future workforce for using AI tools in their jobs in a productive manner, detecting the use of AI for harmful intent, and critically evaluate AI generated output.

6 AI and Indigenous Data Sovereignty

Indigenous people's rights to own, control, access and possess their own data, and decide who they give it to is fundamental to the movement of Indigenous data sovereignty. Naturally, there are concerns around the use of Indigenous knowledge and data with AI, a tool where it is not clear who owns it, where it is hard to control the collection and distribution of data and where anyone can "create" Indigenous art and knowledges with the risk of Indigenous artists' work being misappropriated. This does not mean that Indigenous people refrain from using AI tools. There is evidence of how AI is used in combination with Indigenous knowledges to benefit the community.

It is critical that the development of AI does not further encroach on Indigenous rights and data sovereignty. UA urges the government to put Indigenous people at the centre of any discussions around adopting and regulating AI tools. For example, the Indigenous Data Network (IDN) is a national network made up of Aboriginal community-controlled organisations, university research partners, Indigenous businesses and government agencies and departments. IDN supports and coordinate the governance of Indigenous data and develops the technical capabilities of Indigenous communities to decide on their own data priorities.

7 Conclusion

Students, educators, research supervisors and collaborators will continue to engage with emerging technologies, such as generative AI. We are constantly learning more about AI tools' possibilities and risks. Our members are committed to ensuring that generative AI is used in an ethical, transparent and professional way, and UA recommends that universities retain the autonomy to manage the opportunities and risks associated with using AI within their own institutions through guidelines and internal policies. As our knowledge of AI and its impact evolves, greater regulation may be appropriate.

Universities also play a critical role in educating students and staff on how to appropriately use AI tools in order to be adequately prepared for the future workforce. Many of UA's members are already equipping students and staff with these skills and building AI literacy across the sector.