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17 May 2024

Senator Tony Sheldon
Chair, Select Committee on Adopting Artificial Intelligence (AI)
Parliament House
Canberra ACT 2600

By email: aicommittee.sen@aph.gov.au

Dear Chair,

Inquiry into opportunities and impacts for Australia arising out of the uptake of AI technologies

The University of Sydney welcomes the opportunity to assist the Committee with its inquiry into the opportunities and impacts for Australia arising out of the uptake of AI technologies in Australia. We have many staff and affiliates with expertise relevant to the inquiry's terms of reference.

Some of these colleagues may engage with the Committee directly, addressing their areas of knowledge and interest in personal or group submissions. If it would assist, we would be pleased to arrange introductions to our staff with expertise most relevant to the Committee's key areas of interest. We would also be happy to connect the Committee to some of our students who have provided invaluable perspectives that are helping us shape and refine our approach to this rapidly evolving technology.

As a higher education provider, the University's submission focuses on the opportunities and risks the technology presents for our core work in teaching, research and support services. Our researchers also continue to consider the impact of AI in a diverse range of research fields.

In July 2023, we participated in the House of Representatives Standing Committee on Employment, Education and Training's inquiry into the use of generative AI in the Australian education system. In our submission and subsequent public hearings, we provided an overview of our approach to generative AI with a focus on our teaching, assessment and research activities.

We also addressed issues relevant to your inquiry's terms of reference, including the strengths and benefits of generative AI tools in education; future impacts of generative AI on education; risks and challenges for education and research posed by the technology; equity and access for students from different backgrounds; and international and domestic responses to generative AI in education. Our submission concluded with five education- and research-focused recommendations that are relevant to your Committee's inquiry and highlighted in our submission.

Since then, we have continued to refine our governance, policies and practices regarding the appropriate use of AI across our diverse activities. We are currently focused on strengthening our AI governance framework, providing clear policies, guardrails and guidance to our students and staff about the effective and appropriate use of AI. We are also revising our approach to assessments to maximise academic integrity and the development of contemporary capabilities, alongside the achievement of learning outcomes for our students regardless of cultural or socio-economic background.

Our educational experts have also continued to play leading roles in national and international discussions about the higher education sector's approach to AI. In February 2024, we hosted an Australia-wide roundtable to discuss best practices in curriculum development and assessment and plan to repeat this annually to ensure sector-wide approaches and sharing of best practices.

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We have also had strong involvement with the Tertiary Education Quality and Standards Agency's (TEQSA) development of guiding principles and propositions for *Assessment reform for the age of artificial intelligence* and the Group of Eight universities' *principles for the use of generative artificial intelligence released in September*.

We would be delighted to provide further information or advice if it would assist the Committee.

Yours sincerely,

Professor Joanne Wright
Deputy Vice-Chancellor (Education)

Attachment The University of Sydney submission to the Senate Select Committee on Adopting Artificial Intelligence, May 2024

THE UNIVERSITY OF SYDNEY

University of Sydney submission to the Senate Select Committee on Adopting Artificial Intelligence (AI) inquiry into the opportunities and impacts for Australia arising out of the uptake of AI technologies in Australia, May 2024

Contents

Attachment

University of Sydney recommendations to the House of Representatives Standing Committee on Employment, Education and Training's inquiry into the use of generative AI in Education

THE UNIVERSITY OF SYDNEY

Executive summary

The University of Sydney welcomes the establishment of the Senate Select Committee on Adopting Artificial Intelligence and commends the Parliament's ongoing work to consider current and future implications of AI for Australia.

AI, particularly generative AI, is rapidly becoming part of everyday life. In higher education, universities have responded quicky to the emergence of AI and continue to explore the many new opportunities and challenges that the technology is bringing to education, research and to university administration. This submission focuses on AI issues faced by universities as providers of educational, research and related services (e.g. information and data repositories). As we have a vast community engaged in AI in a wide range of disciplines and functions, we have promoted this inquiry to members of our community, encouraging them to make separate submissions addressing aspects of AI relevant to their specific interests and expertise.

Recommendations

While the 2024-24 Federal Budget recognised safe and responsible AI adoption, the limited measures for the development of AI policies and capabilities do not reflect the extensive impact that AI is already having on a range of industries.

The University of Sydney reiterates the recommendations it made to the House of Representatives Standing Committee on Employment, Education and Training's inquiry on AI in Australian education. These included the establishment of a national body to oversee AI's safe and equitable use, developing minimum standards for AI implementation, prioritising funding to increase Australia's AI research capability, fostering collaborations to address the digital divide, and creating guidance for researchers on AI ethics. These recommendations aim to ensure the responsible adoption of AI in education (see Attachment).

Context

Defining 'generative AI'

For the purposes of this submission, we define *generative Artificial Intelligence* (Gen-AI hereafter) as a rapidly evolving class of computer algorithms able to create *digital content* – including text, images, video, music and computer code. They work by deriving patterns from large sets of training data that become encoded into predictive mathematical *models,* a process commonly referred to as 'learning'. Generative AI models do not keep a copy of the data they were trained on, but rather generate novel content entirely from the patterns they encode. People can then use *interfaces* like ChatGPT or MidJourney to input *prompts* – typically instructions in plain language – to make Gen-AI models produce new content.

The role of a university education in the age of Gen-AI

Addressing immediate concerns around academic integrity was necessarily the initial priority for universities when Open AI released ChatGPT public late in 2022. Since then, universities have also increasingly been considering the broader implications of the technology for our sector and society, recognising that AI will likely fundamentally change students' lives and careers and therefore also the skills they need as graduates. Furthermore, there has been increasing recognition that the knowledge, skills and strategies academics will need for success as educators and researchers will need to change.

Globally, there is an extensive discussion currently underway about the implications of Gen-AI for teaching and learning in our schools, universities and other tertiary education institutions.[1] This includes commentary, reflection and debate about the continuing relevance and value of longer-form qualifications offered by universities and of how best to prepare school leavers and university graduates for success in

a world that is evolving rapidly due to advances in technology like Gen-AI and other forces including globalisation and climate change.[2]

The University of Sydney's approach to Gen-AI to date

Our vision for approaching Gen-AI is based on an acceptance that this technology will become ubiquitous - augmenting and redefining our educational and research experiences, allowing our students and staff to focus on advancing human endeavours, and serving to enhance the quality and efficiency of our support operations. We seek to centre human agency in the application of AI by equipping our students and staff with the capabilities and dispositions necessary to thrive in an AI-augmented world, and by requiring the responsible, ethical and equitable use of generative AI across all aspects of our operations.

Our vision includes nurturing an institution-wide culture of continuous learning, where every member of our community has equal access to the opportunity and resources to harness the potential of AI as they choose. We are also committed to raising levels of understanding about the opportunities, limitations and risks of generative AI in the wider public, through engagement with schools and communities, and by making our AI fluency and other relevant education and training programs as easily available as we possibly can.

To this end, the University of Sydney is proactively facilitating collaboration on AI issues across our institution as well as leading public discourse on AI through our vast community of experts. Simultaneously, our researchers are advancing AI technologies and capabilities in a broad range of research fields.

Some recent developments of note include;

- Early adoption of Australia's AI Ethics Principles, and application of them in our thinking about policy design and use of AI in all aspects of our work.

- Establishment of a **Generative AI Steering Committee**: a high-level committee to ensure cross-functionality and collaboration on AI across the university.

- Development of a whole of **University of Sydney AI Strategy**: we have been working to establish an initial comprehensive institution-wide AI Strategy and governance framework that will set the direction for our journey with Gen-AI across our core educational and research activities, as well as the entirety of our supporting operations. Our Generative AI Dynamic Roadmap articulates our guiding principles and aspirations to be a leader in the safe and responsible use of Gen- AI in the higher education sector.

- **AI fluency sprint**: In August 2022 the University of Sydney Business School, in partnership with the Deloitte AI Institute launched the AI fluency sprint, Australia's first business AI microcredential. Targeted at leaders, executives and entrepreneurs, the sprint has seen more than 1,000 participants across 25+ industries, including the higher education sector and the University's own staff community.

- **Cogniti platform:** We have built our own Gen-AI platform for teachers, called Cogniti, which puts teachers into the drivers' seat of AI, allowing them to build 'AI agents' that can support student learning. They do this, for example, by being Socratic tutors, providing targeted and personalised feedback, role playing as clients, coaching for good groupwork, etc. We are also sharing this tool widely with over 60 universities, schools and other education providers here and overseas. Our main lessons so far have been that educators and institutions want privacy, control, equity, visibility, security, and accuracy with use of generative AI in educational contexts.

THE UNIVERSITY OF SYDNEY

- **Policy Navigator**: our legal office has worked with internal and external experts in Gen-AI tool development and regulation to develop a co-pilot to assist members of the University community to navigate the University's official policies and procedures.

- **Microsoft Copilot**: All staff and students at the University of Sydney now have access to 'Microsoft Copilot', a secure AI environment.

- Launch of the **International Digital Policy Observatory** on misinformation and other digital issues designed to provide access for all Australians to digital policies and industry insights from around the world to advance multistakeholder knowledge sharing and regulatory best practice.

- **MoU with Microsoft Australia and New Zealand**: In March 2024, the University signed a memorandum of understanding (MoU) with Microsoft Australia and New Zealand to build on Australia's AI capabilities and help the University harness the power of AI for good. The MoU recognises the University of Sydney as an early leader in rapidly addressing AI and aims to support Australia to be a leader in ethical AI teaching and learning, research and operations. The MOU comprises:

    - Improving teaching and learning opportunities – This could include leveraging technologies such as generative AI to help staff create teaching materials and develop content for short courses and programs to address specific skills shortages in Australia. It will also offer students opportunities to engage with Microsoft through PhD projects, scholarships and internships.
    - Advancing new knowledge and supporting research and technology solutions – This involves using AI technologies to support and accelerate research across disciplines; co-develop research papers and reports to address challenges presented by AI and its application; jointly incubate programs for AI-focused start-ups; and organise events that foster networks and knowledge among researchers, students and industry.
    - Exploring ways to leverage AI to improve operational efficiencies at the University including–technologies that will enhance staff and student services, such as information and issues resolution services.

- **AI in Higher Education Symposium**: In February 2024, we hosted almost 2000 educators from across Australia, New Zealand and the Pacific, for in-person and online for a symposium to share their experiences (positive and negative) embedding Gen-AI in their teaching. Recordings of all presentations from the symposium are publicly available for free.

- **National roundtables on Gen-AI:** In July 2023 and February 2024 we brought together hundreds of learning and teaching leaders from 30+ institutions to discuss and share practices and policies around Gen-AI in education. A well-received working paper was produced from this roundtable.

- **Embedding privacy and security by design:** We have leveraged existing governance and assessment processes to work to embed privacy and security in all our Gen-AI initiatives.

THE UNIVERSITY OF SYDNEY

Responses to the inquiry's Terms of Reference (ToR)

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

AI is transforming education

In 2023, the Standing Committee on Employment, Education and Training conducted an inquiry into the use of gen AI in the Australian education system. Following extensive consultation with the university community, our submission to the inquiry detailed the opportunities of AI technologies for educators and students as well as the challenges and risks.[3]

For educators, who are under ever-increasing workload pressures, Gen-AI has the potential to augment aspects of their roles. For students, AI can provide additional learning support and assist with research. The submission made five recommendations to Government (see attachment A) including to support the establishment of a national cross-sector representative 'AI in Education' body and knowledge-sharing hub to guide the safe, beneficial and equitable use of generative AI in Australian education.

In February 2024, the Australian Universities Accord final report reflected on emerging technologies and the digital environment for higher education in Australia:

> *Some of the most discussed impacts of generative AI in universities are for education and students. The ability of generative AI programs to produce reasonable quality academic work on any topic challenges traditional approaches to teaching and assessment.*
>
> *It is anticipated that these technologies will enhance teaching practices, as well as increase accessibility for people with disability or for those from historically under-represented cohorts. Some commentators believe AI has the potential to replace existing teaching practice – perhaps with teaching that is personalised to an individual's needs, abilities and interests, completely undermining the need for or relevance of school and university in-person education. Others note the emergence of generative AI will increase the need to focus on critical thinking, socio-emotional intelligence and interpersonal skills, alongside offering the opportunity to provide educators with more time for student engagement and personalised learning.(p.62)*

The University of Sydney continues to proactively and carefully innovate to explore the impacts of AI on education practices. In July 2023 we hosted a national symposium to bring together learning and teaching leaders from over 30 Australian and New Zealand higher education institutions to discuss best practices in moving curriculum and professional development forward in the face of Gen-AI. In February 2024, we held the 2024 AI in Higher Education Symposium where educators from higher education institutions across Australia and New Zealand met to share their creative and authentic uses of Gen-AI to improve teaching, learning, assessment, and curriculum.

Internally, our teaching and learning experts such as those in the Educational Innovation community of practice[4] are providing thought leadership around many facets of AI adoption in teaching and learning.

AI will boost research productivity

The Government has articulated that it sees adoption of AI as a potential driver of productivity in the economy, though this will depend on investing in standards development, in capability building and education and building trust in the technology across many sectors.[5] Similarly, the Productivity Commission suggests that "…[b]y increasing the productivity of knowledge workers, AI could accelerate innovation and future productivity growth."[6]

As an enabling technology, AI has the potential to significantly increase research productivity and to accelerate progress across all fields of science. Indeed, the Australian Universities Accord Final Report found that;

> *Emerging research shows that AI can lead to large productivity improvements in knowledge and information work, with one study identifying productivity improvements of up to 25% combined with quality improvements of 40%. This potential applies to research productivity and building new forms of research infrastructure, especially if different fields build their own generative AI models. Australian universities have the experience, infrastructure and expertise to lead in these areas." (p. 62)*

Recent research suggest that Australian researchers are early proponents of AI. For example, a CSIRO paper found that compared to other countries Australian researchers have higher AI adoption rates, with 9.6% of Australian research publications using or developing AI technology versus a global average of 7.2%.

Additionally, Australian universities are playing a fundamental role in advancing AI research and technologies. Sydney University hosts several leading centres dedicated to AI research including:

Sydney Artificial Intelligence Centre

The Sydney Artificial Intelligence Centre expertise spans all fundamental aspects of AI research, such as algorithms, knowledge representation and reasoning, learning theory, systems, and software-hardware co-designs; as well as applications in diverse fields, including multimedia information retrieval, object movement analysis, and future planet-scale Extended-Reality (XR) systems.

Sydney Informatics Hub

Works with the CSIRO and other partners in government, healthcare, education and industry to leverage impactful research with artificial intelligence, machine learning, bioinformatics, statistics, data science, and

ARC Centre of Excellence for Automated Decision-Making and Society

The ARC Centre of Excellence for Automated Decision-Making and Society brings together universities, industry, government and the community to support the development of responsible, ethical and inclusive automated decision-making.

The University also hosts many individual scholars with teaching and research expertise regarding diverse aspects of Gen-AI.

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

Academic integrity

Risks relating to academic integrity have been of primary concern to education providers since the public release of OpenAI's ChatGPT and other gen AI platforms in November 2022. The University collaborated widely to determine and communicate our policies regarding the appropriate use of Gen-AI in our teaching, ensuring the integrity of our academic assessments, and on supporting staff and students to engage with the technology safely, responsibly and productively.

The University has now developed and published guardrails around generative AI in education, research and operations that are available publicly. Briefly, these guardrails are:

- Do not enter confidential, personal, proprietary or otherwise sensitive information

- Do not rely on the accuracy of outputs
- Openly acknowledge your use of AI (e.g. educators must model best practice by being transparent and clear with students about how these tools are used)
- Check for restrictions and conditions (e.g. for funding agreements, journals, etc)
- Report security incidents to the Cybersecurity and Privacy teams
- Follow any further guidance specific to your work (e.g. around education, or research)

We have invested heavily in developing resources and training to assist our staff in both managing and making the most of Gen-AI in their teaching. We have brought together communities of practice and consulted widely with staff and students as we explore this technology together. We have included students in our AI in Education Working Group alongside educational and research experts, have implemented mandatory academic integrity training in place for all students, and we communicate with them regularly about our requirements, including the appropriate use of Gen-AI and other tools.[7] We have also worked closely with students to develop resources that democratise information about Gen-AI so that all students can be upskilled.[8]

The Tertiary Education Quality and Standards Agency (TEQSA) is also closely monitoring the development of generative AI tools and what they mean for teaching, learning and assessment practices. Three University of Sydney academics were closely involved in the development of the principles outlined in the TEQSA discussion paper on assessment reform released in November 2023. The University has revised its assessment principles in response to Gen-AI to align with the TEQSA discussion paper and the Group of Eight universities' principles on the use of generative artificial intelligence released in September 2023.

The University of Sydney pioneered a sector-leading approach to assessment design in the context of generative AI, the 'two lane' approach, which has been integrated into the TEQSA advice and also adopted by other institutions here and overseas. This design recognises that the assessment security risk needs to be addressed through supervised ('lane 1') assessments to confirm achievement of learning outcomes. Moreover, it recognises that that most assessments ('lane 2') need to be authentic, which now means scaffolding and supporting students' use of generative AI productively and responsibly.

This provides a sustainable and effective framework for work the University is undertaking around the redesign of curriculum and assessment to both assure learning and to provide our graduates with the skills and judgement to use AI tools in their coursework and careers. Our Academic Board also continues to focus on the challenges of generative AI for academic integrity, the risks that AI presents and the support that is needed by our teaching staff and our students.

Equity

Equity in AI is a fundamental concern that must be considered in the design and adoption of AI technology and practices.

Consistent with UNESCO's guidance for education policy makers, the Australian Government's Eight AI Ethics Principles and the 'better community outcomes' principles underpinning the NSW Government's AI Assurance Framework our approach to AI prioritises the following principles:

- human benefit, agency, expertise and accountability
- balancing the pursuit of Gen-AI's potential benefits for individuals, society and the environment with careful consideration of the risks
- the safety and wellbeing of individuals, communities and society
- equitable access
- ethical applications across all aspects of the University's work
- a supportive and collaborative approach to exploring AI use and governance
- normalising human-AI collaborative work

- privacy, information and data security, and transparency.

The University continues to prioritise equitable access to AI, particularly for students. In October 2023, Cogniti was launched at the University, giving staff the ability to steer and deploy custom generative AI chatbots to all students in their courses. In April 2024, Microsoft Copilot was launched at the University of Sydney giving all students and staff access to the platform using their student/staff login. This measure is one step towards addressing equity and access issues in our community.

Research integrity

While the opportunities for AI in research are significant, research integrity must be safeguarded. Issues around data, privacy, transparency, attribution and authorship, validation and evaluation, accountability and intellectual property are some of the challenges presented by AI in research.

We have convened a high-level Generative AI Steering Committee of university leaders, supported by an AI Coordinating Group comprised of technical experts from all relevant teams, to ensure cross-functionality and collaboration across the University.

We continue to progress consultations for a University of Sydney AI Strategy**,** which will establish a comprehensive institution-wide AI Strategy and governance framework that sets the direction for our journey with Gen-AI across our core educational and research activities, as well as the entirety of our supporting operations.

Workforce

A rapid response report by Australia's National Science and Technology Council in March 2023 suggested that 'a substantial and capable workforce will be critical for Australia to be generative AI-ready', citing competition for talent domestically and internationally and a shortage of skilled workers as key risks for Australia over the short term. The expansion of the Next Generation Artificial Intelligence and Emerging Technologies Graduates programs to attract and train the next generation of job-ready AI specialists is a welcome investment, however 'AI ready' is arguably already a preferred attribute for all graduates.

Safety and compliance

The University has adapted its governance and consultative processes to ensure cyber security and privacy assessments are performed for its gen-AI initiatives and technical system environments. These governance controls minimise risks of University data compromise and breaches and help to protect the safety and security of the University community. Maintaining the integrity of University research and business data is also considered in all gen-AI initiatives.

c. Emerging international approaches to mitigating AI risks

International science and research organisations continue to consider appropriate risk-based approaches and principles-based frameworks to guide AI adoption.

The Australian Academy of Science has called on the Australian Government to build on its commitments in the Bletchley Declaration by developing a national strategy for the uptake of AI in the science sector, investment in sovereign high-performance computing facilities to ensure Australia's AI capability doesn't rely on other nations and to implement the UNESCO recommendation on Open Science.[9]

Universities Australia suggests that coordination across the sector could be encouraged through the development of best practice guidance and sector-specific standards for the use of generative AI in academia.

d. Opportunities to adopt AI in ways that benefit citizens, the environment and/or economic growth, for example in health and climate management

AI has enormous potential for good, helping researchers to address humanity's greatest challenges such as inequality, climate change, biodiversity and sustainability. Research into AI can advance Australia's national priorities including greater economic prosperity, improved educational opportunities and quality of life, and enhanced national security.

Case study: AI in health

On 25 July 2023 Sydney Ideas hosted a panel discussion around how AI is changing medical practice.

> *The potential for AI and its ability to improve how healthcare is delivered is well documented. From supporting the patient experience and how they access healthcare services, to assisting practitioners in avoiding errors, AI can enable healthcare systems to offer better care to more people. However, we'll only take full advantage of what AI has to offer, with wise policy choices.*

A recording of the discussion is available at https://youtu.be/E2LYXsGjTG0.

Student learning and experience

AI presents new opportunities to enhance student learning and experience.

Using our generative AI platform, Cogniti, staff at the University of Sydney and other institutions have built custom AI agents that:

- Provide 24/7 personalised feedback on student work before submission
- Improve class engagement by allowing students to interact with authentic characters or case studies driven by AI
- Help colleagues improve blended learning designs that promote diversity and inclusivity
- Promote learning through 1:1, 24/7 AI-assisted assessment preparation and feedback
- Engage students by simulating client interactions to better prepare them for future jobs
- Improve the quality of assessments and marking rubrics by assisting colleagues in designing better instructions and resources
- Free up staff time by answering syllabus questions and supporting improved study skills
- Guide colleagues to key support resources and channels when assisting students in need.

e. Opportunities to foster a responsible AI industry in Australia

In February 2024, the Government released an interim response to the Department of Industry, Science and Resources' Inquiry into safe and responsible AI in Australia. The Government has since announced the establishment of an interim Artificial Intelligence Expert Advisory Group to "provide advice to the Department of Industry, Science and Resources on immediate work on transparency, testing and accountability, including options for AI guardrails in high-risk settings, to help ensure AI systems are safe."[10] This is a welcome first step and we support a permanent role for the group beyond June 2024.

THE UNIVERSITY OF SYDNEY

f. Potential threats to democracy and trust in institutions from generative AI

One of the most concerning aspects of AI is its potential impact on trust in institutions and democracy through misinformation.

In April 2024, the University of Sydney and its partners, University of New South Wales (UNSW) and University of Technology Sydney (UTS) launched the world's first comprehensive, open-source and freely accessible database to track developments in digital/internet regulation – the International Digital Policy Observatory. The database is designed to provide access for all Australians to digital policies and industry insights from around the world to advance multistakeholder knowledge sharing and regulatory best practice.

One of the first policy issues that will be addressed by the Observatory is misinformation. The site now provides comprehensive resources on misinformation, to coincide with the *Draft Combatting Misinformation and Disinformation Bill* currently before the Federal parliament. Resources will subsequently be made available on AI regulation, online harms, cybersecurity and digital identity to assist policymakers to fully understand these issues and societal impact.[11]

On the subject of trust in institutions, a submission to the Department of Industry, Science and Resources discussion paper *Safe and responsible AI* by University of Sydney academics from the Media & Communications and Government & International Relations disciplines in the Faculty of Arts and Social Sciences, considered the inherent tension between safety/privacy and transparency, arguing that,

> *"…public trust and confidence in AI will be strengthened if there is a perception that those developing and using it are trustworthy, and a decline in public trust and confidence in AI if it is seen to be abused. This indicates that binding AI Ethical Codes at an industry level will be a necessary but not sufficient condition for engendering public trust and confidence in AI."*[12]

g. Environmental impacts of AI technologies and opportunities for limiting and mitigating impacts

Though there are significant opportunities for AI to help solve grand challenges around sustainability, biodiversity and the environment, the impact of current and future energy use for AI needs to be more comprehensively understood.

There needs to be more research and development in Australia and globally to address this to realise the benefits of AI while minimising the adverse effects to the environment.

The University of Sydney is considering the issue of the impact on the use of AI in relation to energy efficiency and sustainability.

THE UNIVERSITY OF SYDNEY

Attachment

The University of Sydney recommendations to the Inquiry into the use of generative AI in Education

In May 2023, The House Standing Committee on Employment, Education and Training commenced an inquiry into the use of generative artificial intelligence in the Australian education system.

The University of Sydney's submission of 14 July 2024 considered the Terms of Reference, which included the impacts of AI on teaching and learning, the risks and challenges, ethical and safety aspects and international best practices.

The University made the following recommendations:

Recommendation 1
Lead the establishment of a national cross-sector representative 'AI in Education' body and knowledge-sharing hub − to guide the safe, beneficial and equitable use of generative AI in Australian education, and to develop, test and showcase outstanding innovation in the productive and responsible use of the technology in the Australian school, vocational and higher education sectors.

Recommendation 2
Lead the development, in consultation with cross-sector representatives (see recommendation 1), of an initial national set of minimum standards to maximise consistency in the safe and equitable development and use of generative AI in the Australian school, vocational and higher education sectors.[13]

Recommendation 3
Commit, for the next 3-5 years, to prioritising funding to support research and development work into the safe and effective use of generative AI to improve evidence-based teaching, learning and assessment in the Australian school, vocational and higher education sectors.

Recommendation 4
Identify policy and program opportunities to encourage and support sustainable collaborations between educators in schools serving disadvantaged communities and their colleagues in Australian universities with relevant expertise and interests, to help address the *digital divide*, specifically in relation to access to and use of generative AI tools.

Recommendation 5
Lead the development of a national set of principles and guidance materials targeted at research institutions to support and educate researchers (including research students) in the use of emerging technologies, including generative AI, in the research process. Development, for example, of a specific supporting guide for the Australian Code for the Responsible Conduct of Research (2018) addressing the benefits and risks of emerging technologies in research would enable all Australian organisations conducting research, to identify and consistently manage use of these technologies in their research and training programs.

THE UNIVERSITY OF SYDNEY

Endnotes

[1] https://scholar.google.com.au

[2] Loble, L., & Hawcroft, A. (2022) Shaping AI and Edtech to Tackle Australia's Learning Divide, University of Technology Sydney, How Important Is a College Degree Compared to Experience? (hbr.org)

[3] University of Sydney submission to the House Standing Committee on Employment Education and Training's Inquiry into the use of generative artificial intelligence in the Australian education system, https://www.sydney.edu.au/content/dam/corporate/documents/about-us/governance-and-structure/university-policies/2023/ai_in_education_usyd_submission.pdf.

[4] See the AI in Education community at https://educational-innovation.sydney.edu.au/teaching@sydney/ai-and-education/.

[5] Speech by the Minister for Industry and Science, 20 September 2023, Unlocking the potential of AI for Australian industry, https://www.minister.industry.gov.au/ministers/husic/speeches/unlocking-potential-ai-australian-industry.

[6] Productivity Commission, 1 February 2024, Making the most of the AI opportunity: productivity, regulation and data access, https://www.pc.gov.au/research/completed/making-the-most-of-the-ai-opportunity.

[7] https://www.sydney.edu.au/students/academic-integrity.html

[8] University of Sydney, 'AI in Education' resource for students, https://bit.ly/students-ai.

[9] Australian Academy of Science, 17 January 2024, *Australian Government's interim AI response a sensible first step*, https://www.science.org.au/news-and-events/news-and-media-releases/australian-governments-interim-ai-response-a-sensible-first-step,

[10] Minister for Industry and Science, 14 February 2024, New artificial intelligence expert group | Ministers for the Department of Industry, Science and Resources.

[11] See https://www.sydney.edu.au/news-opinion/news/2024/04/22/fake-news-misinformation-sydney-universities-launch-new-database.html.

[12] University of Sydney submission, 4 August 2023 https://consult.industry.gov.au/supporting-responsible-ai/submission/view/409.

[13] We note that this recommendation has been implemented with the *Australian Framework for Generative Artificial Intelligence (AI) in Schools*, published in November 2023.