Universities Australia's submission to the House of Representatives Inquiry into the digital transformation of workplaces

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Key points

- Universities are deeply involved in teaching and knowledge production. They play a key role in developing digital literacy. This includes improving staff and student understanding of technology/AI as well as related research. Uptake of such knowledge across disciplines is currently uneven.

- Universities use many forms of digital technology to support their own institutional processes. A recent national survey indicates that university staff believe it will increase productivity, but not necessarily reduce workloads.

- Universities generate large administrative data sets through their internal activities. These are amenable to AI-driven data analytics, the results of which could streamline processes and improve services. Such data analytics requires considerable upfront investment, and most universities are not currently in a position to pursue these benefits.

- There is a risk of systemic bias and discrimination if the AI recruitment tools are not designed with a diversity and inclusion lens.

- Human-AI collaboration works better when the AI delegates the work to humans rather than the other way around.

- An AI-based monitoring tool can translate into unfair pay cuts or redundancies.

- Despite growing use of AI and its potential benefits, the risks of increased use include:
  - worsening the existing "digital divide"; and
  - downplaying of important interpersonal skills that remain vital in workplaces.

Introduction

Universities Australia (UA) welcomes the opportunity to submit a response to the House Standing Committee on Employment, Education and Training inquiry into the digital transformation of workplaces. Digital transformation comprises many aspects – from digital records and data analytics to robotics and artificial intelligence (AI) driven processes. This submission predominantly focuses on AI, which has been highlighted in the inquiry.

At this stage of its development, AI largely extends human capabilities, rather than replaces them. However, instances of worker substitution are growing[1]. 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. Universities are also training much of the future workforce in these capabilities

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[1] Telstra's mass sacking is a worrying glimpse at the cracks appearing in the jobs market: 22 May 2024: https://www.abc.net.au/news/2024-05-22/telstra-mass-sacking-a-worrying-sign-of-things-to-come/103876130

and are themselves large workplaces where professional staff are incorporating technology and AI into their daily activities.

Context

The higher education sector engages with artificial intelligence in multiple ways. At its simplest, all Australian universities offer guidance in using AI to staff and students. Universities Australia convenes a working group of the Deputy and Pro Vice Chancellors of Research that focuses on:

- appropriate use of AI in research; and
- consideration of how research ethics can be expanded to reflect AI.

Universities Australia has also previously made submissions to various inquiries relevant to the use of AI. This includes responses to: the Inquiry into the use of Generative AI in the Australian Education System; and the Tertiary Education Quality and Standards Agency (TEQSA) AI Assessment Reform[2].

Internationally there is no robust, systematic way of developing and evaluating AI. However, Australian academics are heavily engaged in considering the safe integration of generative AI in teaching, learning and assessment.[i]

Our member universities offer a range of degrees, micro-credentials and higher degree courses in AI. They also host events to share their knowledge with the general public. Artificial intelligence has been widely embraced by the higher education sector, with universities hosting numerous institutes, centres and research groups with an AI focus (list available on request). Collaboration on AI is common across universities, with industry and with government agencies. Universities tend to have different areas of AI expertise across a broad range of topics.

Response to the Inquiry's Terms of Reference

Research within the higher education sector touches on areas across most of the inquiry's terms of reference (ToR). However, this submission focuses on ToR (a), (c) and (f).

ToR (a)   the benefits for productivity, skills development, career progression and job creation in Australia

The university role in developing a digitally capable workforce

Australian universities aim to produce graduates who are familiar with and competent in using AI and other technologies. They have a role in fostering digital and AI literacy[3] among students and, as outlined, are already undertaking a range of activities to embed these skills in students and staff.

Students and researchers need to know how to recognise, understand, use/apply, evaluate, create, and navigate AI safely and ethically.[ii] Lecturers develop these skills in their students in a variety of ways, for example, by directing them to create ChatGPT prompts for content relevant to the subject, and then helping them evaluate the result.[iii]

Despite the need to produce digital literacy in students, universities also develop graduates' interpersonal and other "softer" skills such as communication, collaboration and teamwork. As outlined in the latest Employer Satisfaction Survey, these skills remain very important in

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[2] Copies of these submissions are available at https://universitiesaustralia.edu.au/policy-submissions/submissions/

[3] AI literacy is defined as: *as a set of competencies that enable individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace*.

the workplace[iv] and need to continue to be developed alongside digital skills. Developing critical thinking and reasoning among students remains a core university responsibility.

Universities as workplaces

Artificial Intelligence (AI) experts currently disagree on the expected pace of AI adoption. While they perceive broad societal benefits from its increasing use (see Box 1 for two specific examples) they are also aware of its threats.[v]

The national Generative Artificial Intelligence Survey (Gen AI Survey) of Australian Universities is nearing completion. Preliminary results from over 3,000 respondents indicates that around 40% of academic and professional staff perceive Gen AI as either moderately or substantially improving their productivity. [vi] Higher education staff use AI for a broad range of research, teaching and administrative tasks. The pattern of AI use, for administrative tasks specifically, reflects the early-stage implementation of these tools. Meaning that staff use AI for a narrow range of tasks, mainly drafting emails, and drafting and editing reports. Staff appear largely confident that AI will improve the efficiency of their work (78.2%) and that AI will automate some aspects of university work currently undertaken by staff (77.7%). However, they appear less confident that increased efficiency will translate into reducing their overall workload (57.5%). However, advances in AI are not necessarily being embraced evenly across the sector. There is also variation in uptake across disciplines.[vii]

Optimal artificial intelligence use requires big data sets that contain quality data. The capacity for organisations to use such data to improve services and meet consumer expectations was identified as a megatrend by CSIRO.[viii] The administrative work of universities generates large data sets. AI-driven analysis of this data offers opportunity for universities to enhance processes. However, companies that implement AI at scale need to invest considerable monetary resources up front,[ix] and most Australian universities are not currently in the position to devote funds to introducing and advancing AI within its administrative functions.

> **Box 1. Examples of university AI research with benefits to society**
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> **Example 1: My picture matters.** Members of the public are being asked to provide childhood photos, taken between the ages of 0 and 17 years, to help save children from harm. With the participants' consent, researchers are developing a database that will be used to develop machine learning tools to counter online child exploitation[x].
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> **Example 2. Cyber safety for adolescents:** A chatbot is being designed to support adolescents deal with the risks posed by cyber bullying, grooming and image-based abuse. With funding from the eSafety Commissioner, the research project aims to provide an education tool to schools to enable them to have a responsive option to be used when students try to access problematic material on school computers[xi].

ToR (c)   the risks, opportunities, and consequences for the nature of work, including effects on hiring, rostering, work intensity, job design, wage setting, monitoring, surveillance and job quality.

There are many risks, opportunities, and consequences of digitising the workplace. Research has shown that although there are benefits to using AI in recruitment by automating processes such as writing job descriptions, anonymising resumes, and scoring interviews, there is also a risk of systemic bias and discrimination if the AI recruitment tools are not designed with a diversity and inclusion lens.[xii] As the AI algorithm is trained on the resumes received and resumes of previously successful hires, the algorithm may in fact reinforce the biases of the human recruiters. Although there are laws that prohibit automated employment decision tools, research show that the law may not be effective (see Box 2 for an example

from the USA). To design an AI recruitment tool with a diversity and inclusion lens, a multidisciplinary team consisting of computer scientists, sociologists, anthropologists and so on is required. Universities have the opportunity to bring all this expertise together to design a bias-free AI recruitment tool.

AI can also collaborate with humans in designing bias-free AI. Researchers showed that human-AI collaboration works better when the AI delegates the work to humans rather than the other way around because humans are often not able to assess their own capabilities correctly.[xiii] For example, instead of the chief examiner, AI can delegate the exam markings to the markers. Other researchers showed that the co-existence of massive information and machine explanations can invoke humans' active rethinking, which improves work performance.[xiv] This research demonstrates there is promise in human-AI collaboration. AI-based monitoring may also collaborate with the Universities' student support services to identify struggling students and inform timely and effective interventions. This is another example of AI as a co-worker.

While AI as a co-worker is a promising direction, AI as a supervisor is not. There are constant criticisms in using AI for monitoring and surveillance in the workplace. According to the American Psychological Association, 56% of the workers who experience being monitored electronically typically feel tense or stressed at work.[xv] An AI-based monitoring tool can translate into unfair pay cuts or firings. The labour unions in Europe have been pushing for – and successfully gaining – protections against AI tools to monitor workers.[xvi]

> **Box 2. Ineffective AI hiring law**
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> The New York City's law 144 of 2021 regarding automated employment decision tools (AEDT) prohibits employers and employment agencies from using an automated employment decision tool unless the tool has been subject to a bias audit within one year of the use of the tool, information about the bias audit is publicly available, and certain notices have been provided to employees or job candidates.[xvii]
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> Researchers at Cornell University found that six months after the implementation of the law, only 18 out of 391 employers analysed have complied with the law. Some employers claim that their tools do not fall under the definition of an automated employment decision tool. Another reason for non-compliance is the law enforcement is complaint-driven, and so far, no complaints have been made.[xviii]

ToR (f)   the effects on gender equality, job security, small businesses, Closing the Gap and disadvantaged and vulnerable cohorts of workers.

There are concerns that the AI revolution could further disadvantage already disadvantaged cohorts.[xix] The national Gen AI Survey indicates that nearly half of their respondents (47%) believe AI has the potential to increase educational disadvantage amongst university students. The existence of the digital divide – the gap between those who have access to digital technologies and those who do not – disproportionately affects vulnerable cohorts in our society. This divide is associated with reductions to quality of life, education outcomes, and physical and mental health.[xx]

Australian researchers recently measured 'digital confidence' - that is, a person's awareness, familiarity and sense of competence with digital technologies. Groups that are already socially disadvantaged were shown to have significantly lower digital confidence, and included women, older people, low-SES cohorts, and those with less access to technology.

Pattern recognition is the basis of AI; thus, a biased data set may produce biased outputs. This can lead to perpetuating sameness and continuing to sideline diversity. AI may represent the next step in digital evolution, but concerns remain that it will contribute further to social inequality.[xxi] Nonetheless, big data and AI can be employed to improve equity outcomes for students. (See Box 3 for an example from the USA)[xxii]. Appropriately supported, it could be similarly employed here in Australia.

Box 3. Using AI to improve equity outcomes

Georgia State University increased its graduations by 84% while simultaneously doubling the number of non-white students and students from very low-income families. It achieved this in just over 10 years through the intelligent use of big data and AI. One strategy in achieving these outcomes was to introduce an **AI-enhanced Chatbot: 24/7.**

Initially, Georgia State created a portal to guide its students through the enrolment process. It then used that data to generate more insights leading to the introduction of their AI-enhanced Chatbot: 24/7. The Chatbot is accessed through a student's preferred texting platform. Students simply ask a question of the chatbot – be it about registration, parking, housing or anything else – and the algorithm searches for answer. On average it takes only 4 seconds for the chatbot to respond. If an answer is not found, the question is assigned to a staff person the next day who is charged with locating and vetting the answer. The new question and answer are then added to those already stored, thereby improving the chatbot's performance. Other strategies employed by Georgia State to achieve these equity outcomes can be found here.

Implementing these kinds of changes in the Australian higher education system would require considerable monetary resources up front.

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