Submission No 27

INQUIRY INTO ARTIFICIAL INTELLIGENCE (AI) IN NEW SOUTH WALES

Organisation: Australian Catholic University, Institute for Learning Sciences and Teacher Education

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ACU INSTITUTE FOR LEARNING SCIENCES & TEACHER EDUCATION

The Australian Catholic University, Institute for Learning Sciences and Teacher Education, Faculty of Education and Arts respectfully offer this submission based on our research to the NSW Legislative Council Inquiry into Artificial intelligence (AI) in New South Wales

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Overview

With the potential to be socially destructive, AI raises fundamental questions about what it means to be human (Hawkins in Kharpal, 2017). This warning is most apt when considering development of "Artificial General Intelligence" and the potential development of superintelligence "that operate[s] well in advance of human-level cognition in ALL cognitively demanding tasks" (Hamilton et al., 2023, p. 14. Emphasis in original). AI poses questions about control, disruption, human values, ethical concerns, harm, and changes to "global power dynamics" (Peters et al., 2023, p. 31). These developments are occurring at an accelerated pace and are already having significant impact on society, the economy, and the polity. It is now time for human action and judgement, including ethical considerations, to be examined seriously.

Discerning the extent, nature and impact of AI necessitates communities and their governments to engage critically with this technology and make informed evidence-informed decisions. This submission recognises that the AI space is *busy* — with many stakeholders and vested commercial interests. We also recognise that multidisciplinary investigations that bring together the academy and these commercial interests are in their infancy. We see both risks and the benefits of AI for schools, teachers, and young people. We also see the need for evaluation to include diverse population groups to inform discussion about AI, principles of practice, and suitable regulation of AI. At this time in human history, we also call for virtue ethics, particularly ethic of care and practical wisdom, as key considerations informing such regulation. In regard to AI, we cannot readily look back and learn from human history; the reason — there has been no other technology with the potential of AI to reshape humankind, communication, work practices, culture, and identity.

AI developments have already influenced the purposes and design of education (Giannini, 2023; Hamilton et al., 2023; Peters et al., 2023). Education is central to understanding and living in the world. It can assist us to understand what AI is, what we want it to be and do, and the legislative and regulatory systems to achieve these

benefits and to prevent the risks and harms that come from AI (Giannini, 2023, p. 8). A cautious approach is needed in relation to education due to the greater vulnerability of young people. “Inclusion, equity, [and] quality” need to increase to deal with the uncertainties of this technology and its impact on young people (Giannini, 2023, p. 6). This submission addresses the:

- current and future use of AI in schools and higher education (Point a);
- impact of AI on social inclusion, equity, accessibility, cohesion and the disadvantaged, human rights, and democratic institutions (Points e, g, and i);
- lack of attention to education in international policies (Point k); and
- recommendations focusing on critical discussion, advisory bodies, environmental sustainability, and “slow pedagogy” (Points m and n).

Response to consultation points

(a) The current and future extent, nature and impact of AI in New South Wales

The ways in which AI is being applied brings benefits and risks at all levels of education. Benefits include encouraging motivation to learn and self-pacing tools for supporting learning in the curriculum areas. Uses of AI for promoting efficient analyses of performance data are of special interest to researchers in the Institute for Learning Sciences and Teacher Education. Also relevant in working with our partners are longitudinal studies that go beyond analyses of past performances to using AI to identify barriers to student learning and predict where performance will decline. It is this predictive capability that we believe is of high benefit to schooling and higher education systems. With this capability, the data can reveal risks of separation and where “dropping out” is probable. ILSTE has already undertaken longitudinal studies in teacher education. We believe longitudinal studies, largescale datasets, and the use pf AI are all essential in informing policy, practice, and research going forward. So, we point to critical considerations of how data is accessed, linked, and stored, and privacy issues connected with the use of such data (Baker et al., 2023; Giannini, 2023; Hamilton et al., 2023; Lingard & Wyatt-Smith, 2023; Selwyn, 2022a, 2022b; Wyatt-Smith et al., 2019, 2021, 2022).

Current use of AI in schools and higher education

In **schools**, Augmented Reality is being used with primary and secondary students in Science and Maths (Abdullah et al., 2022; Ciloglu & Ustun, 2023; Gargrish et al., 2022; Maas & Hughes, 2020). In Australia, Virtual Reality and Extended Reality are being used in research with primary school students in literacy and text creation (Mills et al., 2022a, 2022b; Mills & Brown, 2023). Machine scoring of tests is occurring in several countries, though ways for optimising machine learning and human judgement are definitely in their infancy (Aloisi, 2023; Cope et al., 2021; McGaw et al., 2020; United States. Office of Educational Technology, 2023). We see the need for sustained focus in this area of human and machine scoring in order to assure informed pedagogy and judgements of performance that are both valid and reliable decisions, particularly in assessment (Lingard & Wyatt-Smith, 2023; Wyatt-Smith et al., 2019).

AI is being used in **higher education** in language learning, Information Technology, and Engineering (Crompton & Burke, 2023). Augmented Reality, Virtual Reality, and Mixed Reality are being used along with more traditional technologies, depending on scalability, sustainability, and serviceability (Moro et al., 2023). AI is being used in a range of ways from tutoring systems, through performance prediction

and identifying students at risk of dropping out of university, for learning analytics, to assessment and providing time efficient feedback (Cope et al., 2021; Crompton & Burke, 2023).

There are undoubtedly some **problems and risks** with the use of AI in education. As illustrated in Australia, England, and Germany, transparency in the selection and use of algorithms is a high policy issue, especially in high-stakes assessments relating to selection into programs and schools (Cope et al., 2021; Kelly, 2021; Selwyn, 2022a, 2022b; Webb et al., 2021; Wulff et al., 2022).

We also note that ethical issues are a key risk from AI in education, especially for vulnerable young people. Unequal access to technology; privacy and data security; and perpetuation of biases and discrimination connected with gender, culture, ableism; and a normative view of intelligence and of emotion are just some ethical risks (Australian Human Rights Commission, 2023; Baker et al., 2023; Selwyn, 2022a, 2022b).

Pedagogical relevance of the AI, scalability, and sustainability are further considerations with using AI (Moro et al., 2023). As countries move to Net Zero, it is possible that the production and consumption of AI could become environmentally unsustainable, noting that fossil fuels are a finite resource (Selwyn, 2022b). Environmental sustainability is, therefore, a critical consideration in education policy planning and would need to factor in planned population growth.

In managing these ethical risks, enhancing teachers' professionalism is non-optional as are new legislation and regulation to:

- protect students' and teachers' data;
- promote explainability and accountability;
- promote sustainability; and
- protect wellbeing.

Future extent, nature and impact of AI in education in New South Wales

Considering the risks associated with AI in a thorough manner is important because of the emerging developments in Artificial General Intelligence and "superintelligence" (Hamilton et al., 2023, p. 16). Such developments require vigilance from the New South Wales government and other stakeholders including academics and teachers (Hamilton et al., 2023). These impacts invite careful exploration of what it is that makes us human, already suggested, and the type of education system necessary to bring that to fruition (Baker et al., 2023; Hamilton et al., 2023). Recognising the disruption from technology that could replicate and exceed humans' "reasoning capabilities" (Hamilton et al., 2023, p. 1), and that technological changes do not always have positive effects, we suggest that humans oversee machine learning and manage ethical risks. At a basic level, in such an education system, students are taught how to use AI in a "responsible and ethical" manner (Australian Human Rights Commission, 2023, Point 41; Baker et al., 2023; United States, 2023). This will require re-orienting and re-skilling the teaching profession.

Such understanding might assist publicly scrutinising AI to develop a critical posture towards AI that enables discernment of its usefulness or otherwise (Moro et al., 2023; Southgate, 2021; Wang, 2021). This discernment can assist regulating AI and the organisations that use it (Srinivasan & Ghosh, 2023; Williamson & Hogan, 2020). Scrutiny, legislation, and regulation are necessary to safeguard data security;

guard against biases, inequality, and discrimination; and increase the professionalism of teachers in their use of data in particular (Andrejevic & Selwyn, 2020; Lingard & Wyatt-Smith, 2023; Selwyn, 2022a, 2022b; Southgate, 2021; UNESCO, 2021a, 2021b; Williamson & Hogan, 2020; Wyatt-Smith et al., 2019). Having knowledge about and critically evaluating AI is essential for teachers to address the "major challenge for students" namely "the diversity of accessible information that will in turn influence approaches to reading, thinking, and ultimately, critical literacy" (Mills et al., 2022, p. 232), as well as students' STEM development.

(e) The current and future extent, nature and impact of AI on social inclusion, equity, accessibility, cohesion and the disadvantaged

Ethics and social justice are central to ensuring AI is used for human benefit. Using AI in an ethical manner "**not only includes the social implications of AI and harnessing the fair use of data, but also entails education and training opportunities that are accessible, fair, and diverse**" (World Economic Forum, 2023, Paragraph 14, Emphasis in original). This requirement is because "the impact of AI on jobs and labour is more likely to have negative consequences for women, racialised, indigenous, and low-income groups" (World Economic Forum, 2023, paragraph 6).Those "with fewer resources are likely to be directly or indirectly excluded and marginalised" (paragraph 12). Understanding this discrimination is a key part of minimising the ethical and moral risks associated with digital technology.

Government action can address the following concerning trends in the development and use of AI:

- Students experience differential access to technology based on their gender and their income. These differences occur within and across political jurisdictions (Baker et al., 2023; McIntyre, 2022).
- Data used to train algorithms have increased sexual, racial, cultural, and ableist "prejudices and biases" (Lord Clement-Jones, 2023b; Baker et al., 2023).
- Use of AI is reported to have further marginalised vulnerable groups (Andrejevic & Selwyn, 2020; Selwyn, 2022b).
- Evidence of a normative view of intelligence and emotion (Baker et al., 2023).
- Use of streaming by ability groups and other forms of biological discrimination (Andrejevic & Selwyn, 2020; UNESCO, 2021a, 2021b; Williamson, 2020).
- Misuse of "personal data and undermining the right to privacy" (Lord Clement-Jones, 2023b).
- Use of AI to spread "misinformation" and to deceive students (Australian Human Rights Commission, 2023; Lord Clement-Jones, 2023b).
- Use of AI increasing ethical tensions experienced by educators including those related to the rights of the majority versus the rights of the minority, access to technology, and use of student data in performance prediction (Andrejevic & Selwyn, 2020; Kelly, 2021; McIntyre, 2022).

These trends suggest that AI impacts how **social justice** is achieved and, therefore, they need to be actively considered. The United Nations' Sustainability Development Goal 4 is relevant here; namely, to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" (UNESCO, 2021a). To achieve this Goal, governments need to guard against unethical actions, biases, and privacy breaches. Accordingly, changes in education law and the rights of the child will need

to be made to ensure they take account of AI impacts. Further, policies and actions need to be reviewed to ensure there is a focus on developing, planning, using, monitoring, and evaluating AI in education in ways that promote **access, inclusion, equity, explainability, and human rights** (Peters et al., 2023; UNESCO, 2021a).

(g) The current and future extent, nature and impact of AI on human rights and democratic institutions and processes in New South Wales

The focus on human rights and democratic institutions and processes in the discussion points is welcomed. One part of this task, in line with the United Nations Sustainability Goal 3, is ongoing evaluation of the health of democratic institutions and governance arrangements. These include governance of education through indicators such as "political equality, popular control of government, civil liberties and human rights and the quality of public deliberation" (Sawer et al., 2009, p. 5). This evaluation and acting on its findings are essential because the power generated from the use of AI can cut across state and national boundaries.

Democracy is threatened if the power and control of businesses (and nation states) increases at the expense of citizens and democratic institutions. There is a need for "human-centred digital transformation" rather than capitalist-centred or state-centred transformation that privileges ethics, morals, and democracy (Nida-Rümelin & Weidenfeld, 2022, p. vi).

To **strengthen human rights and democracy**, the New South Wales government could consider a new social contract that takes account of the development and harms of AI, the power of institutions (including businesses and governments) that use it, and the range of stakeholders involved in producing and consuming AI. (Baker et al., 2023; UNESCO, 2021b; World Economic Forum, 2023). These stakeholders include governments, citizens, businesses, civil society, and AI itself.

Traditionally, a social contract is an agreement on the rules governing the relationship between citizens and their governments (D'Agostino et al., 2021[1996]; World Economic Forum, 2022). A new social contract could promote inclusion and minimise harm by controlling for data privacy, curbing power of EdTech businesses, promoting ethical use of data, promoting environmental sustainability, emphasising social justice, collaboration, and "responsibility" taken to be legal accountability (AWIS, 2020, paragraphs 8 & 9; Bankins & Formosa, 2021; Srinivasan & Ghosh, 2023; UNESCO, 2021b). There is no doubt that this new social contract entails thinking "differently about learning, and the relationships between students, teachers, knowledge, and the world" (UNESCO, 2021b, p. 20).

(h) The effectiveness and enforcement of Commonwealth and New South Wales laws and regulations regarding AI.

The effectiveness and enforcement of laws and regulations regarding AI need to be reviewed on a frequent basis to ensure they are fit-for-purpose. Education stakeholders need to be involved in developing, monitoring, and evaluating AI strategies, legislation, and regulations to ensure, where AI is used in education, it is done so in a way that brings benefits to communities as well as sytems.

(i) Whether current laws regarding AI in New South Wales that regulate privacy, data security, surveillance, anti-discrimination, consumer, intellectual property and workplace protections, amongst others are fit for purpose.

Review of current laws regarding AI and confidentiality should strengthen protections for students and teachers to increase security of their data and to reduce discrimination. Risks to the security and privacy of students' and teachers' data derive from the involvement of businesses whose primary interests maybe commercial rather than advancing student learning. Legislation and regulation are needed to protect the data collected about children, young people, educators, and parents and to prevent that data from being used for other purposes, including preventing on-selling (Australian Human Rights Commission, 2023; Williamson & Hogan, 2020). Further, ensuring "algorithmic fairness" is imperative to prevent use of AI to discriminate against people (Farnadi et al., 2023, p. 29). Teachers, academics, and parents need to be involved in developing, reviewing, and evaluating privacy issues and breaches.

(j) The effectiveness of the NSW Government's policy response to AI including the Artificial Intelligence Strategy, Ethics Policy and Assurance Framework

The effectiveness of the NSW government's policy responses to AI should be reviewed on a regular basis (e.g., quarterly) to ensure they are fit for purpose. Key stakeholders such as teachers, school leaders, researchers, and policy makers should be involved in reviewing policy responses. **Student voices should be factored into these reviews.**

(k) The measures other jurisdictions, both international and domestic, are adopting in regard to the adaption to and regulation of AI.

We recognise the work being done in Australia on schools and generative AI. This work is most important as there is limited attention to education and the ethical issues connected with the use of AI in education within national AI policies (Australian Government. Department of Industry, Science and Resources, n.d.; CSIRO & Gradient Institute, 2023; Lord Clement-Jones, 2023a, 2023b; New Zealand Government, n.d.; OECD, n.d.; Schiff, 2022). New South Wales could "tune into" the insights gathered from the earlier national review into AI and consider:

- how AI is being (and could be) used in schools and in higher education
- the ethical issues posed by its use
- its impact on students, teachers, learning, and assessment.

This focus on connectedness in the reviews could potentially optimise the benefits by bringing to the surface consistencies and consistencies between them.

Several national governments have established agencies, regulations, legislation, charters, and principles relating to the development and use of AI. While there is a focus on harnessing the benefits AI could bring to national economies, attention to risks from AI and ensuring regulation is fit-for-purpose is essential (Lord Clement-Jones, 2023b; OECD, n.d.). "Algorithmic Impact Assessments" are required in the United States and Canada. New Zealand has an Algorithmic Charter. Canada and Japan have national AI strategies, while Australia has a national AI action plan. Canada has a charter with the United States, while New Zealand has a charter with

Singapore and Chile.

Common features across jurisdictions include: a Centre of Excellence for AI research and development; a public sector wide strategy; and the requirement for businesses to adhere to ethical principles in developing and adopting Advisory bodies that include stakeholders from academia, society, not-for-profit sector, and business are needed to inform policy, strategy, and regulations for all citizens to benefit from AI. There is also a recognised need for governments to include ethics in AI development and regulation so that AI is the "servant" and not the "master" (Lord Clement-Jones, 2023a, p. 205). Preventing algorithmic biases and discrimination to increase fairness and inclusion in education systems is prominent (Australian Human Rights Commission, 2023, Point 34).

We applaud the federal government's ethical AI use principles (CSIRO & Gradient Institute, 2023). The New South Wales government could include **care as an ethical principle** that businesses including EdTech companies must meet. Greater attention to ethics with respect to AI and education should be non-optional.

At a global level, we have identified that the OECD, along with some researchers, have called for a moratorium on developments in AI until jurisdictions have adequate policies and regulations in place (Australian Government. Department of Industry, Science and Resources, n.d., CSIRO & Gradient Institute, 2023; Giannini, 2023; Hamilton et al., 2023; New Zealand Government, n.d.; Lord Clement-Jones, 2023a, 2023b; Giannini, 2023; Raji et al., 2023). We strongly support this call.

(m) Recommendations to manage the risks, seize the opportunities, and guide the potential use of AI by government.

Recommendation 1:
Education stakeholders need to be involved in developing, monitoring, and evaluating AI strategies, legislation, and regulations to understand the specific ethical concerns related to education, prevent harm, and ensure, where AI is used in education, it is done in a way that benefits all.

Recommendation 2:
An advisory body with stakeholders from government, universities, schools, businesses, not-for-profit organisations, and civil society is essential for critical discussion to better understand how AI can be used to benefit all and how it can be regulated to prevent harm.

Recommendation 3:
Greater attention to the environment is needed in reviews of AI in education (Peters et al., 2023; Selwyn, 2022b). As countries move to Net Zero, it is possible that the production and consumption of AI could become unsustainable as fossil fuels as finite.

Recommendation 4:
Addressing these challenges requires teaching to be further professionalised (UNESCO, 2021b). Explicit attention should be given to enabling teachers and school leaders to make evidence-informed decisions about the pedagogical use of AI.

Recommendation 5:
The further introduction of AI in schools should mandate safety checks focused on "inclusion, equity, [and] quality" to deal with the uncertainties of this technology and its impact on young people (Giannini, 2023, p. 6).

Recommendation 6:
The New South Wales government should review how they currently regulate for ethical use of AI, and in particular, access to their use of students' and teachers' data. Legislation should be reviewed to assess the strength of the safeguards protecting students' and teachers' data, including national and state-based test results and the provision of these results to third parties.

Recommendation 7:
Ethic of care should be added to the ethical principles that businesses and government consider in New South Wales (CSIRO & Gradient Institute, 2023). An ethic of care turns attention to how we look after ourselves, others, society, and the world.