ARTIFICIAL INTELLIGENCE (AI) IN EDUCATION

DISCUSSION POINTS

When utilising artificial intelligence within the education sector, all reasonable steps must be taken to ensure the user complies with their obligations to protect student data. They must also ensure that any information shared with AI is of a general nature, and does not identify students or workplace and/or government agencies.

ISSUE 1: Teachers as Decision Makers

- The joint Education Ministers' National AI Taskforce has the capacity to address the bigger issues of curriculum revision and overarching policies and practices relating to AI use. Currently this group has no practicing teachers or union representation and is dominated by academics.

- There is no capacity to reject or try to 'control' AI within education, as its adoption is fait accompli. As such, teachers must be focused upon determining the broader systems and structures that will guide responsible and ethical use of AI in schools. It is the teacher voice that should lead the conversations around regulation and management and curriculum issues, not those who work outside the classroom environment.

- Teachers and education leaders must be represented at all levels of discussion regarding AI use and its implications. It is not sufficient to have a body that consists entirely of non-school-based teachers deciding what teachers should be doing, with absolutely no consideration of the industrial and professional ramifications of what they decide. A lack of representation will lead to increased, and increasingly unrealistic, expectations about what teachers can do.

- As AI develops and schools adapt in ongoing ways to its use, teachers and education leaders are uniquely positioned to determine what works and doesn't work in their classrooms and schools. They know the circumstances that affect whether AI will work in their context.

ISSUE 2: Increases in Socioeconomic Inequities

- Access to digital technologies is stratified and clearly linked to current disadvantage. The current pace of change related to AI is such that this is likely to be exacerbated.

- Currently those who already possess the knowledge and skill to access meaning in AI generated material, and to critically evaluate what is provided, are unfairly advantaged.

- The reproduction of inherent bias within much material on which AI is trained has dangerous implications.

- Critical literacy is more important than it has ever been, as the platforms being used are written by a group of people with a particular world view and AI is designed to replicate the current status quo.

- To avoid creating new power imbalances, access to AI needs to be equitable and inclusive of diverse views.

ISSUE 3: The Need to See the Big Picture

- While a number of jurisdictions are convening working groups or committees to consider the ramifications of AI, these have limited focus. Currently much work is being undertaken in modifying assessment handbooks and policies, and issuing fact sheets and general advisories. It is seen by many that this is evidence that an 'AI response' has been mounted. However, changing the wording in a handbook or writing a policy does nothing to address the bigger issues surrounding AI in education.

- A deep analysis of the key purpose of education is needed and we need to ask whether schools have evolved to meet the needs of future generations. We need to ensure that appropriate resourcing of education is undertaken to do this work.

- The introduction of digital technologies, including AI, has impacted upon long-held tenets about the purpose of education. It is clear that imparting knowledge and enabling its retrieval, is no longer the key purpose of education. As such, attention to reconfiguring curriculum so as to develop students' capacity to critically evaluate information sourced from public repositories, and to act ethically in its application, is urgently needed.

ISSUE 4: Curriculum and AI

- Current AI 'curriculum' conversations are generally limited to educating people about AI, what it might/can do and how teachers might manage its use by students in schools.

- There is an urgent need to reconsider the fundamental purpose of education and ensure that curriculum, policies and practices are fit for the 21st century and beyond.

- The concept of digital and critical literacy, and how we develop that in all students, requires urgent attention.

- Much of the preliminary effort has focused on the senior phases of schooling and the tertiary sector, but developing strong digital and critical literacy skills will require attention from the earliest stages of education.

- The problem is bigger than ensuring 'academic integrity' and working out how to detect AI use and apply sanctions to those who engage in misuse.

- The curriculum is already crowded and making room for ethics/academic integrity will require removal of other subject matter. The process of identifying what could be removed should be undertaken within a framework that recognises 'knowledge and retrieval' tasks can now be performed by AI.

ISSUE 5: Assessment and AI

- Significant changes to assessment protocols and academic integrity issues have emerged with the introduction of AI.

- Shifting to more process-based assessment models, with less emphasis on the artefact and more on the learning underlying it, is likely. This is needed to ensure academic integrity underpins students' work. This change to assessment is likely to be highly resource intensive and has potential to overwhelm teachers with even more assessment and moderation work (i.e. individual assessment interviews with a class of 25 senior students).

- Universities have reported that they are resourcing their faculties with personnel who have a key role in working with students about the use of AI in assessment pieces. Schools do not have the capacity to do this without additional funding. This level of resourcing/personnel must be delivered to schools, rather than expecting school to 'value add' using current resourcing and staffing models.

Issue 6 – Workplace, Health and Safety

- The health, safety, and wellbeing concerns of online modes of education include the limited capacity of schools to monitor student, education leader and teacher safety.

- Safety issues that arise from the proliferation of devices in classrooms, which could be used to photograph or record students and/or teachers without appropriate consent. Policies and protocols must ensure that adequate and appropriate protections are in place and that the systems adopted are not solely reliant individuals to establish safe ways of working.

- Physical and psycho-social implications of AI include biomechanical injuries, as a result of prolonged exposure to poorly designed workspaces, and new psychosocial hazards, due to expectation that staff members are available 24/7 to respond to work matters, and the gradual reduction in executive function and emotional regulation skills in those that spend extensive periods engaged with digital technologies.

ISSUE 7: Drawbacks, Limitations and Concerns

- The AI tech developers are unlikely to agree, or adhere to, a pause on AI development until we decide how to manage the myriad challenges. As such 'flying the plane whilst it is being built' will inevitably lead to practices developing and issues emerging that will impact upon teachers and education leaders

- Government has a degree of control that private citizens do not have in this space, and they have a responsibility to exert that control, however the lack of timeliness in government responses, means that the vacuum is likely to be filled with some less-than-satisfactory responses that will have professional, industrial and legal implication for teachers and education leaders.

- A significant concern, particularly during the teacher shortage crisis, is potentially outsourcing/replacing of teachers to AI.

Key Terminology (QCAA, 2023)

Artificial Intelligence (AI): A general term used to refer to computer systems that appear to behave intelligently and perform human like tasks.

Machine learning (ML): Refers to the ability of a machine or algorithm to identify rules and patterns in data without a human specifying those rules and patterns. These algorithms build their own model for decision making and can perpetuate biases based on the data they are trained on. Machine learning is a subset of AI.

Deep learning (DL): A part of the field of AI and an emerging area of machine learning. It involves neural networks and complex computational calculations that help machines find patterns to assist in making automated decisions and produce results that mimic human behavioural patterns.

Generative AI: An AI that uses deep learning to synthesise products (responses, images, music etc) based on user prompts and an existing set of generative data

Natural Language Processing (NLP): Uses an understanding of the structure, grammar, and meaning in words to help computers 'understand' and 'comprehend' language.

Large language model (LLM): An equation that, based on a huge amount of data, provides a response by guessing the most likely next word by mimicking the data it was trained to use.

Chatbot: A conversational interface that carries on a dialogue with a user by means of a predetermined script generated from high probability responses.

Chat-based generative pre-trained transformer (ChatGPT): A natural language processing tool that can generate responses to questions from a predetermined, large amount of material available on the internet.

Prompt Engineering: the ability to prompt a response from an AI chatbot.