

# **Submission to the Standing Committee on Employment, Education and Training into the use of generative artificial intelligence in the Australian education system**

**Joel MacKay**

I welcome the opportunity to submit this important inquiry, and I congratulate the committee for taking on this important issue.

Generative Artificial Intelligence (AI) has emerged as a powerful tool with the potential to transform various industries, including education. In recent years, the Australian education system has shown an increasing interest in exploring the use of generative AI to enhance teaching and learning processes.

## **Personalized Learning:**

Generative AI can play a significant role in providing personalized learning experiences for students. By analyzing vast amounts of data, AI algorithms can identify individual learning styles, preferences, and strengths, allowing educators to tailor instruction accordingly. This personalization fosters student engagement, motivation, and ultimately, better learning outcomes.

## **Intelligent Tutoring:**

AI-powered intelligent tutoring systems can provide students with immediate feedback and support, promoting self-paced learning. These systems can adapt to individual learning needs, identify knowledge gaps, and offer targeted resources or interventions. By providing personalized guidance, generative AI assists educators in catering to diverse student abilities and maximizing their academic potential.

## **Curriculum Enhancement:**

Generative AI can aid in the development and improvement of curricula. By analyzing large datasets and educational resources, AI algorithms can identify gaps, suggest new content, and even generate instructional materials. This automation saves teachers valuable time and enables them to focus on refining pedagogical strategies and delivering engaging lessons.

## **Data Analytics and Predictive Insights:**

AI can analyze large-scale education data to generate insights that inform decision-making processes. By leveraging generative AI, educators and policymakers can identify trends, patterns, and potential areas of improvement. This data-driven approach helps in assessing the effectiveness of teaching methods, monitoring student progress, and developing evidence-based policies to enhance the overall education system.

## **Efficient Administrative Processes:**

Generative AI can streamline administrative tasks, reducing the burden on educators and administrators. Automated grading systems can provide quick and accurate assessments, freeing up valuable time for teachers to focus on personalized instruction. AI-powered

scheduling algorithms can optimize resource allocation, class organization, and student timetables, ensuring efficient use of available resources.

While the integration of generative artificial intelligence in the Australian education system presents numerous benefits, it is essential to recognize and address the potential risks associated with its use. The following are some of the risks that need to be considered:

**Data Privacy and Security:**

The use of generative AI involves the collection and analysis of large amounts of data, including student information and learning data. Maintaining data privacy and security becomes crucial to protect sensitive information from unauthorized access or misuse. Adequate safeguards must be in place to ensure that student data is protected and used ethically.

**Algorithmic Bias and Fairness:**

AI algorithms rely on the data they are trained on, and if the training data is biased or contains discriminatory patterns, the AI system may perpetuate or amplify these biases. In the education context, this can lead to unfair treatment, unequal opportunities, and exacerbation of existing disparities among students. Regular monitoring and evaluation of AI systems are necessary to ensure fairness and mitigate algorithmic bias.

**Lack of Human Interaction and Social Skills Development:**

The use of generative AI may reduce human-to-human interaction in the learning process. While AI can provide personalized instruction and feedback, it cannot replace the unique qualities of human educators, such as empathy, emotional support, and the ability to foster social skills. Over-reliance on AI may hinder the development of important social and emotional competencies in students.

**Dependency on Technology:**

The integration of generative AI may lead to a heavy reliance on technology in the classroom. Technical issues, system failures, or power outages can disrupt the learning process and create dependency on AI systems. It is crucial to maintain a balanced approach that combines the benefits of AI with traditional teaching methods to ensure continuity in education.

**Teacher Professional Development:**

The effective use of generative AI in education requires teachers to be adequately trained and skilled in utilizing AI tools and interpreting the data generated. Without proper professional development opportunities, teachers may struggle to effectively integrate AI into their instructional practices. Investment in teacher training and ongoing support is crucial to maximize the benefits of generative AI.

**Ethical Considerations:**

Ethical considerations encompass a broad range of issues, including student consent for data collection, transparency in AI algorithms, and ensuring that AI is used responsibly and in alignment with educational goals. Comprehensive ethical guidelines and regulations need to be established to govern the use of generative AI in the education system and protect the rights and well-being of students.