

## **The Next 5: Predictions of Developments in the Australian Higher Education Performing Arts Sector**

Ian Bofinger

December 2024

*Moore's Law describes the increasing number of transistors on integrated circuits, which in turn increases the speed and lowers the cost of computing. As stated in Roser, Ritchie & Mathieu (2023), the computational capacity of computers has increased exponentially, doubling every 1.5 years. The number of floating-point operations carried out per second by the fastest supercomputer in 2020 was 442 million in 2020 gigaFLOPS\* but by 2024 this number had increased to over 2 billion (\*equivalent to  $10^9$  floating-point operations per second).*

*As such it should have been no surprise to anyone that the computational power required for Generative AI would be on our 'academic doorstep' earlier than previously assumed. Many universities and the government regulator - TEQSA - were caught off-guard and imposing last-minute amendments to adapt to this change.*

*This paper looks at the author's personal view as to what could be the next 5 predictions of developments in the Australian Higher Education Performing Arts sector. This is driven by the recent tsunami of GenAI's emergence and the rapid adjustment to the academic focus and assessments in tertiary music and dance curriculum.*

### **Prediction 1 - Shift the emphasis from assessing product to assessing process**

This approach places importance not only on the final product or outcome, such as an exam, final report or final essay, - but the development that occurs through the learning process. A process-oriented approach focuses on evaluating the steps and strategies students engage in during the learning process, and primarily aims to assess how students think, approach problems/tasks, and reflect on their learning.

The growing dominance of GenAI has led to significant changes in Higher Education (HE), prompting extensive research into its consequences. Understanding this shift necessitates a reassessment of academic approaches to equip students with the necessary tools for a future where all forms of artificial intelligence are ubiquitous.

A major benefit of this approach to assessment is that it can give lecturers a better insight into student learning and foster student development of 'metacognitive' skills – that is, the students' ability to think about, monitor and manage their own thinking and learning strategies. An added benefit of placing more emphasis on process - rather than the final product - is that process is arguably more difficult for students to outsource (Mulder, Baik & Ryan, 2023). Cardamone (2023) also believes that institutions should Integrate tasks that demand creative problem-solving abilities by involving students in practical or hands-on projects that necessitate the creation of inventive solutions and unconventional thinking.

### **Prediction 2: Increased use of Mobile learning**

In 2024, 60.67% of website traffic is mobile, and the overwhelming majority of internet users (92.3%) will consider going online through their smartphones instead of other devices. (Alster, 2024)

Mobile learning, or m-learning, refers to using smartphones and tablets to access learning resources and environments from anywhere and at any time. To meet the limitations of screen dimensions, alternatives to traditional text heavy dissemination will need to be thoroughly considered. The incorporation of Apps and even mobile games should also be evaluated for both assessment and dissemination.

### **Prediction 3: Move towards STEAM Education**

Expanding on the traditional STEM curriculum (Science, Technology, Engineering, and Mathematics), STEAM incorporates *Art*. As such, it promotes creative and innovative thinking in addition to the traditional scientific pedagogy and encourages students to approach challenges from multiple perspectives that create innovative solutions.

As noted by Alkhalidi (2024), while AI and digital citizenship skills are important, creativity is now the predictor of success. Being able to think differently is more important than ever, which is why STEAM education is so powerful and will only continue to grow in importance:

Performing Arts education for primary and secondary school teachers will become more highly sought after and as such Higher Education institutions will need to expand their focus to include students studying general teacher training.

### **Prediction 4: The return of real-time, analogue assessment tasks**

Asynchronous digital assessment tasks have been the staple for many tertiary academic courses for the past few decades. Research Essays were traditionally nominated at the start of the teaching period. This allowed the students time to prepare and research the topic, demonstrating sufficient support and citations from secondary and primary resources. Unfortunately, this assessment format was initially diluted by the existence of outsourced essay mills as students could simply pay an external provider for a paper to be prepared on their specific research question. This was the focus of TEQSA in the Australian tertiary scene over the past decade.

A new 'menace' then appeared on the horizon – GenAI, where programs such as ChatGPT could provide a response to any stimuli given. These included students specifying the research topic, citation formats, length etc and within a matter of minutes a formed digital submission could be generated.

To combat this, many institutions including mu own school - AMPA, sent the research submissions through AI detectors (such as GPTZero) and even after publicly declaring that this was the ongoing process, students continued to take this shortcut. It came to a crisis point in 2024 when almost 30% of the research papers submitted for one class ended up with a rating of 50% human to AI generated content. The best analogy I can provide is the 1970 Stanford marshmallow experiment on delayed gratification. Although students knew it

was wrong and would probably get caught, the temptation to take the shortcut and cheat was simply - too great.

Where it is appropriate for assessable items to be created by both AI and humans, the assessment design should provide clear opportunities to gather evidence where learners critically engage with the use of AI if required, but then demonstrate judgement in how to best use AI and reflect on the learning process. (Lodge, Howard, Bearman & Dawson, 2023)

In Trimester 3, 2024 AMPA trialled a research paper examination where students were given the question one week in advance and allowed to prepare an essay plan and bring 2 x A4 pages of citations that could be used as secondary research sources (but not a fully worked essay). The exam was done on paper under invigilated conditions and the materials used were also submitted as verification of the process. The results in our microclimate were quite remarkable. The papers showed significantly developed insight overall and were a more honest reflection of the students' understanding of the unit content than previously witnessed

### **Prediction 5: Transforming exam supervision and performance assessment**

AI will become more prevalent to aid and facilitate remote exam proctoring. Since the 2019 COVID pandemic, many institutions now offer Blended Learning as a common mode of delivery, but conducting distant exams with security and fairness can be challenging (Batista, Mesquita, Carnaz, 2024). Incorporating AI-powered software with human supervision will further assist in the invigilation of exams to ensure there is no cheating or identity theft.

As a similar transdisciplinary parallel, embedding real-time retail artificial intelligence solutions in grocery self-checkouts is now commonplace to reduce accidental and intentional theft attempts. Equipping attendants with AI-enhanced mobile devices gives real-time oversight of the self-checkout area (Voller, 2024)

Exceptional invigilation/exam proctoring products such as *invigilatorPlus* currently utilize a purely human-first approach which surpasses AI-only platforms but the potential to include appropriate AI as an additional resource will most likely be incorporated.

*Arguably, one of the most controversial pieces of education technology to enter the classroom has been the calculator. Watters (2015) commented that in the 1980s this evoked fear of - 1) student computational abilities would be ruined; 2) students would become too reliant upon machines; and 3) students would not learn how to estimate and that they would not learn from their errors.*

*Some 40 years later, teaching programs have adapted to use calculators in a positive way. Assessments are based on the workings (process) and not purely the answer (product). The initial panic concerns have been averted by modifications to the delivery and assessment of mathematics examinations making the course more contemporary for the modern student.*

*As educational technologies improve and educational trends evolve, experts are excited about how artificial intelligence can be incorporated into the Performing Arts curriculum without negatively affecting the fundamental education goals of Higher Education.*

## References

- Alkhalidi, N. 2024 *The future of AI in education: pioneering a new era of learning*  
<https://itrexgroup.com/blog/the-future-of-ai-in-education-pioneering-a-new-era-of-learning/>
- Alster, K. (2024) *11 Most Important Education Trends for 2024 and Beyond*  
<https://www.synthesia.io/post/education-trends>
- Batista, J. Mesquita, A. Carnaz, G. (2024) *Generative AI and Higher Education: Trends, Challenges, and Future Directions from a Systematic Literature Review* <https://www.mdpi.com/2078-2489/15/11/676>
- Cardamone, C. (2023). *Thinking about our Assessments in the Age of Artificial Intelligence (AI)*. Teaching@Tufts.  
*invigilatorPlus* 2024 <https://www.invigilatorplus.com.au>
- Lodge, J. Howard, S. Bearman, M and Dawson, P (2023) *Assessment reform for the age of artificial intelligence* <https://www.teqsa.gov.au/sites/default/files/2023-09/assessment-reform-age-artificial-intelligence-discussion-paper.pdf>
- Mulder, R. Baik, C. and Ryan, T. (2023) *Rethinking Assessment In Response To AI*  
[https://melbournecshe.unimelb.edu.au/\\_\\_data/assets/pdf\\_file/0004/4712062/Assessment-Guide\\_Web\\_Final.pdf](https://melbournecshe.unimelb.edu.au/__data/assets/pdf_file/0004/4712062/Assessment-Guide_Web_Final.pdf)
- Roser, M. Ritchie, H. and Mathieu, E (2023) *What is Moore's Law?* OurWorldinData.org.  
Retrieved from: <https://ourworldindata.org/moores-law>
- Voller, G. (2024) *Artificial Intelligence (AI) in Grocery Stores Self Checkout*  
<https://seechange.com/ai-in-grocery-stores-shrink-at-self-checkout/>
- Watters, A. (2015) *A Brief History of Calculators in the Classroom*  
<http://hackeducation.com/2015/03/12/calculators>

**Professor Ian Bofinger** is Chief Executive Officer and Executive Dean at the Australian Academy of Music and Performing Arts (Sydney)