

AI IN EDUCATION



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Artificial intelligence: Panacea or Pandora's box?

Louisa Callanan
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The latest chapter in the digital revolution can read as somewhat of a dystopian sci-fi: exciting, slightly unsettling, but definitely worthy of a closer look.

Artificial intelligence (AI) at its basic level is the capacity of machines to go beyond the ability to merely carry out programmed instructions, but rather independently choose information from the external environment – including vast data sets – and integrate those resources to achieve desired outcomes. They do exhibit features more akin to human cognition and thus, to an extent, AI is able to duplicate or replace some aspects of human intelligence. Understandably, this has brought many challenges and concerns in its wake.

From questions concerning dependency and accuracy, to assessment validity, privacy, equity, creativity, its effects on the development of students' skills and the achievement of educational objectives, AI has provoked a great deal of curiosity and concern in educational circles.

While AI promises to relieve teachers of time-consuming and tedious bureaucratic functions – something always welcome in our busy professional lives – it also introduces added demands for educators to grapple with. In short, AI is a powerful tool, but it is also the subject of a complex and busily contested field of discussion. This edition of the journal has a range of articles which address these issues as far as they are applicable in the broad field of education.

Contributions by Keith Heggart and Danny Liu et al focus on practical aspects in reducing some of the humdrum tasks which take up a lot of

non-teaching time; Matthew Esterman and Rod Smith address important implications for student assessment; Travis McKenzie, Sophie Whish and Kael Little explore the effects on creativity and critical thinking; Marino D'Ortenzio and Josh Valeri discuss the importance of a well-constructed framework to effectively guide the implementation of AI; Damian Maher considers the ethical implications of its use; while Tamika Worrell addresses the misappropriation of Indigenous intellectual rights and property, as well as threats to broader cultural sovereignty. Other articles discuss the implications for leadership and professional development. Most deal with a spectrum of issues.

One thing is clear: AI is here to stay, and it will only become more powerful, probably growing exponentially. There is no doubt that the deployment of AI in education will require thoughtful planning, robust policies, transparency, ongoing support for students and teachers, a constant updating of knowledge and skills and a careful re-evaluation of pedagogical approaches to prepare students for a future increasingly influenced by AI.

Our aim for this edition of the journal is to make a useful contribution to the current discussion around AI in education, and to broaden the understanding of professional educators as we face the future with cautious optimism.

I wish you all thoughtful and productive reading.

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AI: Revolutionising education

Michelle Rangelov

The recent development of AI in the educational sphere has prompted significant discourse about learning and current practices. The role of technology and the speed at which it is evolving can feel head-spinning. As educators we watched the advent of the internet. We participated, and revelled, in the LMS revolution – which in its infancy showed us glimpses of how we could communicate every lesson, assessment and assessment data and much more to our students and parents. Now it feels almost quaint to have experienced a time where both of these were not common practice in schools. So, to some extent, the way educators are struggling with AI is unsurprising. To an extent we were primed to engage in an AI space that hitherto would have been inconceivable.

What these articles reflect is a sense of excitement, some trepidation, and warranted and necessary caution. The voices of educators need to be present in every discussion, from policy makers to leadership teams. The potential of AI in assisting the work of teachers to differentiate curriculum, develop resources and analyse data, to name just a few, will continue to evolve as teachers use or abandon various platforms. As outlined by our contributors, the way different educational settings are engaging with AI varies depending on the context and, importantly, the resources available.

At times the discourse about AI in education can seem overwhelming, and there is much wisdom contained in these pages. There needs to be serious consideration given to teacher workload, and although AI promises to do some of the 'heavy lifting' there is now the added mental load of thinking about how AI can be used in lesson planning, homework and assessment and of course the ethical implications of ensuring authenticity. There is also the added pressure on



precious professional learning time; schools are already hard-pressed to find time for teachers to engage in true collaboration and investigation to design and co-create learning experiences for their students. This professional learning, that is best done in our schools by our teachers, also needs to be ongoing, coherent and strategic and led by leaders who are, unfortunately, already overloaded. System-level leaders have a significant role to play in resourcing and enabling schools to revolutionise learning in a way that will be authentic to the world our 'digital natives' and now 'AI natives' inhabit.

Undoubtedly, the role of the teacher and the importance of human-to-human connection is undeniable, and no AI comes close to the hundreds of split-second decisions a teacher makes in the course of one lesson. Perhaps it is telling that AI is in fact 'artificial' and in its very name implies a lack of humanity that is the true essence of learning and teaching.

This edition explores the opportunities, potential and challenges faced by educators at every level. Timely and thought-provoking reading.

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ARE THE ROBOTS COMING FOR OUR JOBS?

Keith Heggart



Are the robots coming for our jobs?

Keith Heggart

It seems that every week there's another story about teachers leaving the profession, or being at risk of burnout, or the declining numbers of teachers enrolling or completing education courses at university. One of the reasons cited for this is the increased expectations and work intensification placed upon teachers: it is no longer enough to be an effective classroom practitioner; now teachers have to be experts in data analysis and special needs and wellbeing and so much more. I'm not suggesting that any of these things aren't important - I think they are - but I am noting that, as the role description of teachers expands, it's perhaps not surprising that so many teachers are concerned about their workload, and that so many prospective teachers are exploring other career options.

The solution to all of these is properly funded schools, including the various support services, and reducing the workload expected of teachers. That will take time and political will; meanwhile, though, there are some interesting ways that teachers might use technology, and specifically generative artificial intelligence (GenAI) to assist them in dealing with some of the tasks that contribute to workload. Of course, I am not advocating for teachers to be replaced by robots! Rather, in much the same way that photocopiers or video projectors meant that teachers could perform their work more efficiently, it is possible that GenAI might offer some time savings. First, though, let's look at how AI and education intersect.

AI as teacher

The debates about the role of AI and education are not new; they have existed in some form since at least the 1950s, when researchers and futurists started to consider what the future of education

might look like. This led to two diverging schools of thought: AI as the teacher, and AI as a kind of teaching assistant.

As far back as the 1960s, there were promises that teachers' jobs were at risk, and it was only a matter of time before teachers were replaced by some form of robot or AI. In some cases this has taken the form of an actual humanoid robot, although, much like flying cars and holidays on the moon, the reality has not lived up to the promise. At least, not yet, although there have been some experiments with robot teachers in China that have generated some interesting results.

More realistically, there have been suggestions that another form of technology would make human teachers obsolete. One manifestation of this was the Massively Open Online Courses which were popular in the early 2000s and offered an asynchronous learning experience to large groups of people, often with minimal interaction between teachers and students. The idea was that students could learn Physics or Philosophy without the real time intervention of an expert. In this model, teachers become designers of learning experiences, rather than practitioners of learning.

Such approaches have also led to the boom in online micro learning platforms. These platforms, such as LinkedIn Learning, offer mini courses in the form of micro videos. Again, there is limited or no interaction from teaching staff beyond the creation of these resources, although there has been some recent exploration of peer-led discussion forums, and even some implementation of AI chatbots.

Despite the profusion of these ideas, it's apparent that the role of teachers is not, currently, under threat. If nothing else, the COVID pandemic and the lockdowns related to it illustrated very clearly that learning, especially with young people, is an essentially relational activity; it is a human-to-human experience, and while the ideas presented above might serve as additions to the ways we offer learning opportunities, they certainly don't replace the need for human teachers.

AI as digital assistant

Having said that, though, there are still ways that these tools might be used to assist teachers in their work. This is a much more realistic idea than the robot teachers discussed above; indeed, in some cases, it is already in place in schools across Australia. This idea is based on the notion that, rather than replacing teachers, tools that make use of AI might take on some of the duties that teachers find challenging, time-consuming or are not a productive use of their very limited time. In other words, AI will do the drudge work of education, leaving time to do those things that are best done by humans. Of course, the challenge here lies in determining what falls into each category.

Previously, there has been an assumption that AI is better suited for tasks that rely on being available, or at a large scale, or require speed in computation. This has included things like selecting learning materials, assessment generation and evaluation, and reasoning. This has left humans to do things like creating learning resources and other content, engaging in storytelling and other creative practices, and demonstrating empathy (see Figure 1, adapted from Kokku et al., 2018).

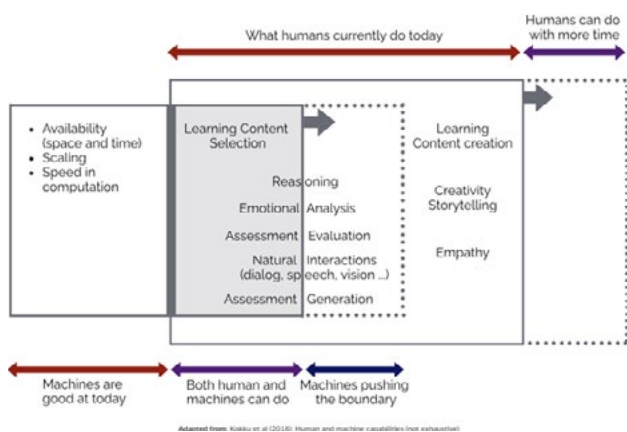


Figure 1

However, more recent iterations of AI tools have shown that they are more than capable of producing outputs that are almost indistinguishable from that made by humans. This suggests that they are able to do more than expected. This is becoming increasingly the case in things like art, or music, or even reflective writing, which for a long time was considered to be something that machines were never going to be able to do satisfactorily. Of course, the tools

are not doing any of these things: they are merely creating the appearance of doing these things, but if the outputs are largely the same, people might not care too much about the process.

The promise here is that this would address the workload of teachers: imagine if you never needed to mark tests again, or write multiple choice questions, or answer emails from parents that ask the same question over and over again? Leaving aside the pedagogical concerns that might be inherent in some of these tasks, removing this from the workload of teachers would be a significant time-saving. But, going further, what if you never needed to create a resource again? Or teach a lesson? Are you even a teacher at that point? And ultimately, what will be left?

One interesting idea is that soon students will have access to AI personal learning coaches. A colleague, Matthew Esterman, has suggested that it's time to move beyond thinking about the Learning Management System, and instead start thinking about the Personal Learning System (Esterman, personal correspondence, 2024). And certainly, the promise of an individualised guide through the curriculum is an exciting one, but also one that raises questions about agency, and equity.

Where to next?

So where does this leave teachers? It's hard to say. Currently, there is a lot of confusion and experimentation about using GenAI and similar tools. Various government organisations and other educational concerns are trialling different tools and exploring what that means for teaching, learning and education as a whole. It's important to recognise the inherent tightrope-walking that is involved in these kinds of discussions. Yes, there is hope that these tools might reduce the workload on teachers, but there is also a lot of concern related to teachers' job security and support for teachers.

Ultimately, my advice is that teachers should seek to be part of these conversations, rather than being excluded from them. I note that I am possibly adding to the workload of teachers in making this suggestion, but nevertheless, it's

generally better to be inside the tent than outside. So, here is how I would suggest starting to explore GenAI as a means to reduce teacher workload.

1. Use it for processing data

This was a huge game changer for me: there are so many GenAI based tools that are fantastic for processing data and identifying trends and actionable insights. And these tools can do it in a matter of moments. Of course, you need to be careful here – don't upload anything that you don't have permission to. However, with the right permissions, it's possible to throw huge volumes of data at the tool and ask it to develop actionable insights, and even better, explain to you what it is doing at each step of the way. One way I've done this was to look at student grades and how they correlated with the time they spend in the online learning management system – to see if there was a trend – and then matching that against the majors of the students. I could, of course, do all of this myself, but it would take a lot longer.

2. Use it for things that take you a long time

I used to hate writing multiple choice questions, especially for senior students. It took me a long time to get the questions just right. One thing that GenAI does well is tasks like this but be smart about it. Don't just ask a basic prompt. Instead, upload previous questions, and even documents with content and syllabus materials, and ask it to devise the questions from there. Huge time saver! Other teachers have explained that some AI tools have helped to create short explainer videos, reducing a task that could take days into minutes.

3. Use it for things which you know a lot about already

One of the criticisms is that GenAI can 'hallucinate', especially when it's looking for precise or detailed information. What this means is that the tool creates something that sounds plausible but is entirely made up. This is often the case with references but can also apply to statistics and reports too. It's always worth checking these carefully. This behaviour appears to be becoming less common as GenAI improves, but even the most up to date versions still provide some questionable advice. For this reason, I suggest using GenAI for topics that you already know something about, rather than something of which you are ignorant.

This means that you will be much more likely to spot any errors.

4. Use it at the start, not necessarily at the end

This is part of the academic integrity conversation (which is probably a whole new article). If you type a prompt into one of these tools, and then use the output as your own answer, that's probably some kind of misconduct. But if you use these tools as a kind of sounding board for idea generation at the start of the process, then that's a different matter. Using GenAI as a starting point is helpful for the ideation process.

5. Teach your students to use it

Your students are probably already using these tools for their homework. Some of them might even be using it in school, or for other things in their life. But it's possible that they are not using it very effectively. That leads to all kinds of problems, including academic integrity, as suggested above. It's not like students are going to stop using it, so instead, I would argue that we, as teachers, need to teach students to use it effectively, and that requires developing some expertise ourselves.

6. Listen to your colleagues but do it critically

Normally, I'd finish an article with a list of recommendations about useful resources, however, the nature of this technology means that any suggestions I might make would be quickly out of date. So rather than doing that, I'm going to provide a list of people who often generously share their expertise via social media. I suggest, if you are interested, following or connecting with them to learn more:

- | | |
|----------------------------|--------------------------|
| 1. Dr Sophie Fenton | 4. Leon Furze |
| 2. Matthew Esterman | 5. Dr Tim Kitchen |
| 3. Jason M. Lodge | 6. Anna Mills |

—

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DIGITAL PLASTIC IN EDUCATION: UNDERSTANDING THE IMPLICATIONS OF SYNTHETIC MEDIA

Leon Furze



Digital plastic in education:

Understanding the implications of synthetic media

Leon Furze

Last year, I coined the term ‘digital plastic’ to describe AI-generated synthetic media. Like its real world counterpart, digital plastic can be both helpful and harmful. As we grapple with quickly developing technologies like text, image, audio and video generation in education, it is worth revisiting this concept and exploring its implications for teachers and school leaders.

In this article, I examine the concept of digital plastic in the context of education, exploring both its potential benefits and challenges. I consider the rise of low quality AI-generated content, often referred to as ‘slop,’ and its implications for information literacy and academic integrity. I also discuss the role of frameworks, such as the Australian Framework for Generative AI in Schools, in guiding the ethical and effective use of these technologies in educational settings.

Understanding digital plastic

I use the term ‘digital plastic’ to draw an analogy between AI-generated synthetic media and physical plastics. Both are versatile, solve specific problems, and have the potential for widespread use. However, like physical plastics, digital plastic also carries risks of environmental damage – in this case, to the digital ecosystem.

Plastics were invented to solve real problems: a lack of natural materials, difficulties in working with materials like wood and metal, and the desire to create materials with significantly different properties to natural elements. Plastic can bend without breaking, last for years without rusting or

decaying, and be used in positive ways, from prosthetics to sterile packaging and more.

Of course, plastics have also become one of the most problematic inventions of all time. Alongside its petroleum-based cousins, plastics are major contributors to pollution, damaging both wildlife and human life, and are often carcinogenic. One of their biggest strengths, durability, is also one of the biggest environmental problems.

In the educational context, digital plastic can take many forms, from AI-generated text and synthetic images to computer-generated audio and video content. These forms of digital plastic offer potential benefits for education, such as personalised learning materials, accessibility tools, and creative aids. However, they also present significant challenges, particularly in terms of information literacy, academic integrity, and the potential for a ‘tsunami of slop’: low-quality, AI-generated content that may flood the digital space.

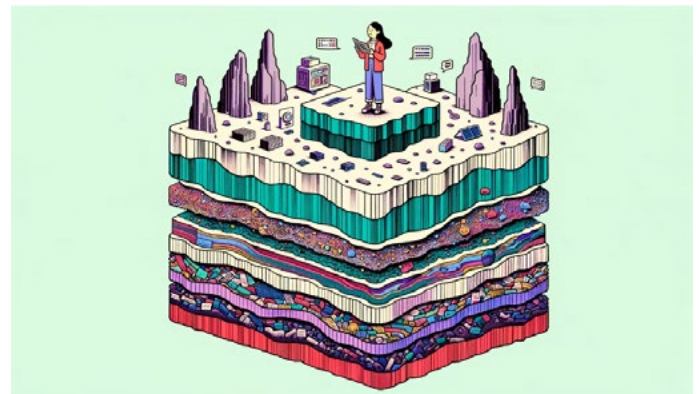


Image source: <https://leonfurze.com/2023/10/25/digital-plastic-generative-ai-and-digital-ecosystem/>

The rise of multimodal AI generation

In the last few months, we have seen a surge in research and product releases related to generative artificial intelligence, moving beyond text and image generation and into audio and video. OpenAI teased Sora, a powerful-looking video model which still has yet to be released, but is promised to be offered soon as a plugin for Adobe Premiere Pro. Two new music generation platforms, Udio and Suno, arrived almost simultaneously, offering free, high-quality audio generation that outstripped any other platform on the market. Hot on the heels of Sora’s

video generation, Runway and Luma have both released new products which can create short video clips of a much higher quality than what was available in 2023.

These advancements make it increasingly feasible to create multimodal content on demand, with minimal human intervention. [I recently used a combination of platforms \(Runway Gen 3, Suno, GPT-4, and 11 Labs\)](#) to create two short videos in under 10 minutes each. The ability to create engaging content quickly is obviously attractive, given we live in a society where video content platforms such as YouTube and TikTok have risen to be the most popular parts of the internet. While this offers exciting possibilities for creative expression and educational content creation, it also raises significant ethical and practical concerns. The ease with which high-quality, multimodal content can be generated raises questions about the authenticity of student work, the reliability of online information, and the potential for misuse of these technologies.

The challenge of 'slop'

The term 'slop' is currently gaining traction for AI-generated content that is fully automated, soulless, and rapidly filling the internet. Websites are using automated chatbots with language models that are churning out useless and often factually inaccurate materials at a scale we have never seen before.

What happens when slop becomes multimodal? As soon as it is possible, easy, and cheap to run text, audio, and video generation in concert, then you can all but guarantee that the internet will fill up with hours and hours of generated, synthetic media that has had little to no human intervention. Just as real plastic clogs the arteries of our streams, rivers, and oceans, digital plastic will fill the online ecosystem in just a few years.

This phenomenon presents several challenges for educators. As AI-generated content becomes more prevalent, teaching students to critically evaluate sources becomes increasingly crucial. The ease of generating essays, reports, and multimedia presentations using AI tools necessitates new approaches to maintaining academic honesty. Furthermore, as the internet becomes flooded with AI-generated content,

finding high-quality, human-created resources may become more challenging.

There are also equity concerns to consider. Differing access to high-quality AI tools may exacerbate existing educational inequalities, creating a new digital divide based on the sophistication of AI resources available to different schools or communities.



Image source: <https://leonfurze.com/2024/07/15/digital-plastic-understanding-ai-generated-synthetic-media/>

Implications for educational leadership

For middle leaders in schools, the rise of digital plastic and slop presents several key areas of concern. We may need to rethink how we teach certain subjects, focusing more on higher-order thinking skills that AI cannot replicate. Ongoing professional development will be necessary to ensure teachers understand and can effectively use or teach about these rapidly evolving technologies.

Schools will need to create and implement policies around the use of AI tools, balancing their potential benefits with ethical considerations and academic integrity. Leaders will need to grapple with the ethical implications of using AI-generated content, particularly concerning student data and privacy.

To address these challenges, we need robust guidelines. The Australian Framework for Generative AI in Schools, developed by the National AI in Schools Taskforce, provides crucial guidance for educators navigating this new landscape. The Framework is built around six key principles: Teaching and Learning, Human

and Social Wellbeing, Transparency, Fairness, Accountability, and Privacy, Security and Safety.

Each principle comes with specific guiding statements that can help schools develop policies and practices around the use of generative AI. This framework offers a solid foundation for educational institutions to approach the use of AI technologies in a thoughtful and ethical manner. In particular, the Transparency core principle may be helpful in avoiding the kind of misinformation and 'fake news' associated with slop, as will the more critical aspects of core principle number one, Teaching and Learning.

Protecting the digital ecosystem in education

In education, we need to take similar steps to ensure that the digital plastic we use and create is as ethical and sustainable as possible. This might involve carefully vetting AI tools before using them in the classroom, teaching students about the ethical implications of AI-generated content, and developing school policies that align with the Australian Framework for Generative AI in Schools. We should also collaborate with other schools and educational institutions to share best practices and engage with AI developers to ensure their products meet educational needs and ethical standards.

Conclusion

I hope that this strata of 'digital plastic' doesn't come to represent the next few decades of our online content. Realistically, I think that the output of Generative AI – impressive as it is – will lose its sway once people start to (re)value more meaningful content. I have no doubt that much of the content online already is, and will continue to be, produced by generative AI. But hopefully, little pockets of human and human + AI writing will continue to provide meaningful information and entertainment online.

The digital plastic analogy is helpful because it suggests a way forward. Regulation in manufacturing and environmental law has been slow to catch up with real-world plastic. In fact, despite the best efforts of environmental

organisations, businesses, researchers, and political groups worldwide, we are still drowning in plastic. It does not need to be this way with digital plastic. We have an opportunity to get ahead of the curve, to shape how these technologies are used in education before we are overwhelmed by a tsunami of slop.

As educators, particularly those in leadership positions, we have a responsibility to guide our students through this new digital landscape. We need to teach them not just how to use these tools, but how to think critically about them, how to use them ethically, and how to navigate a world increasingly filled with AI-generated content.

The Australian Framework for Generative AI in Schools provides a solid foundation for this work. By aligning our practices with its principles, we can ensure that we are using generative AI in ways that enhance learning, protect our students, and prepare them for a future where digital plastic is an unavoidable part of the environment. But frameworks alone are not enough. We need ongoing dialogue, continuous professional development, and a willingness to adapt as these technologies evolve. We need to be proactive in shaping how AI is used in our schools, rather than simply reacting to each new development.

The digital plastic era has already arrived. How we respond to it will shape the future of education both on- and offline. Let's make sure we're creating a future that's beneficial for all our students, not one where we're drowning in a sea of digital slop.

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THE ROBOTS HAVE ARRIVED – WHAT'S NEXT?

Matthew Esterman



The robots have arrived – what's next?

Matthew Esterman

Generative AI is a branch of artificial intelligence that can create new content, such as text, images, music, and even code, based on existing data and models. It is a powerful tool that can augment human creativity, enhance learning outcomes, and provide personalised feedback and support. However, it also poses significant challenges and opportunities for education, as it changes the nature and purpose of assessment, learning, teaching, and curriculum. In this article, we will explore some of the big questions that educators, students, and parents need to consider as generative AI becomes more prevalent and accessible in the classroom and beyond.

What is learning in the AI age?

Learning is a lifelong and dynamic process that involves acquiring, applying, and creating knowledge, skills, and values. However, in the AI age, learning becomes more diverse and flexible, as students can access and interact with a vast amount of information and resources, and use AI tools to enhance their learning experience and outcomes. Therefore, students need to develop competencies and mindsets that can help them navigate and thrive in the AI age, such as:

- **Digital literacy:** the ability to use, evaluate, and create digital content, using various technologies and platforms, such as AI, cloud computing, social media, and online learning.
- **Critical thinking:** the ability to analyze, question, and evaluate information, arguments, and evidence, using logic, reasoning, and creativity, and to identify and solve problems, using various methods and tools, such as AI, data analysis, and design thinking.

- **Collaboration:** the ability to work effectively and respectfully with others, across diverse backgrounds, cultures, and perspectives, using various modes and mediums of communication, such as AI, chatbots, and video conferencing.
- **Self-regulation:** the ability to manage one's own learning, emotions, and behavior, using various strategies and techniques, such as AI, gamification, and mindfulness.

If you ask most educators, especially teacher librarians, these things are nothing new at all. We've been expecting students to engage in these ways of thinking for generations. However, we now have an opportunity to look at these capabilities in a different way. Not only because AI questions the value of these skills and knowledge, but also because it makes us think about what, exactly, should a teacher do to facilitate this.

How should teachers think about their role if they all have assistants?

Teachers have many roles in the modern classroom from traditional expectations around delivery of curriculum through to newer expectations regarding student wellbeing and mental health support. However, with the availability of AI assistants, teachers can delegate some of their tasks and responsibilities to AI, and focus more on the human and creative aspects of teaching. It is not a zero-sum game where either the technology 'wins' or the human does. Teachers can now rethink their role and relationship with AI, and adopt new skills and practices that can enable them to work effectively and efficiently with AI, such as:

- **Co-teaching:** the practice of collaborating and sharing the teaching role with AI, using a complementary and synergistic approach, where each partner contributes their strengths and expertise, and benefits from the other's feedback and support. But now we have AI to act as a digital co-teacher with us: teachers can use AI to generate and evolve assessment tasks, while providing human feedback and guidance to students, and use AI's feedback and data

to improve their own teaching practice and professional development.

- **Co-learning:** the practice of learning alongside and from AI as a professional is new ground we can break, using a reciprocal and reflective approach, where each partner engages in a continuous and mutual learning process, and develops their knowledge and skills. The main difference being that one of the partners is a machine. Teachers can use AI to learn new content, pedagogy, and technology, and to create new learning materials and resources, and use their own knowledge and experience to evaluate and improve AI's performance and quality.

- **Co-creating:** this is where most teachers begin to experiment. We can create new content, products, and solutions with AI, using a generative and iterative approach, where each partner contributes their ideas and inputs, and builds on the other's outputs and feedback. For example, a teacher can use AI to generate new topics, questions, and scenarios for teaching and learning, and to produce new media and formats, such as text, images, music, and code, and use their own creativity and judgment to refine and enhance AI's outputs and outcomes.

The beauty of using AI to engage in these tasks is that it can be done quietly, at your own pace, and – usually – in much less time than would be taken to involve a human in the process or undertake the entire process manually. Having a digital assistant who may not know everything but who can help think through almost anything can have curious and incredibly useful outcomes.

Where will the best learning happen for students in the AI age?

Learning can happen anywhere and anytime, as students can access and engage with various sources and modes of learning, such as formal and informal, online and offline, individual and social, synchronous and asynchronous. However, in the AI age, learning can become more personalised and adaptive, as students can use AI tools to customise and optimise their learning path, pace, and style, and to receive tailored and

timely feedback and support. Therefore, students need to explore and experiment with different learning environments and opportunities that can suit their needs and preferences, and enhance their learning experience and outcomes, such as:

- **Blended learning:** the practice of combining online and face-to-face learning, using a flexible and balanced approach, where students can benefit from the best of both worlds, and have more control and choice over their learning. For example, students can use online platforms and AI tools to access and interact with learning materials and activities, and to receive feedback and support, and use face-to-face sessions to collaborate and communicate with teachers and peers, and to apply and demonstrate their learning.

- **Project-based learning:** the practice of engaging in authentic and meaningful projects, using a collaborative and inquiry-based approach, where students can apply and integrate their knowledge and skills, and create products and solutions that address real-world problems and issues. For example, students can use AI tools to generate and explore project ideas, to collect and analyse data and information, and to create and present their project outcomes, and have human mentors and experts to guide and evaluate their project process and product.

- **Lifelong learning:** the practice of pursuing and participating in learning throughout one's life, using a self-directed and continuous approach, where students can update and expand their knowledge and skills, and adapt to the changing needs and demands of the society and the economy. For example, students can use AI tools to identify and access learning opportunities and resources, to monitor and track their learning progress and achievements, and to receive recommendations and suggestions for further learning, and use human networks and communities to share and exchange their learning experiences and insights.

Never before have we had a situation where all the necessary curriculum has been available at students' fingertips, for better or worse, through internet-connected mobile technologies. The vast majority of Australian students do have regular access to these devices, and therefore the locus

of access has shifted away from the control of school. We need to expand what we recognise as learning so that students can gain the skills and knowledge from places other than a formal classroom setting. If we don't, the gap between students and schools will widen and students may seek our expertise and guidance less and less.

How should we rethink assessment with the arrival of AI?

Assessment is a key component of education, as it measures the progress and achievement of students, provides feedback for improvement, and guides instruction and curriculum. However, with the advent of generative AI, assessment becomes more complex and nuanced, as students can use AI tools to generate responses, complete tasks, and even cheat. Therefore, educators need to rethink the design and purpose of assessment, and adopt new strategies and methods that can leverage the potential of AI, while ensuring academic integrity and validity. Some possible ways to do this include:

- Use AI to generate authentic and diverse assessment tasks that require higher-order thinking skills, such as analysis, synthesis, evaluation, and creativity. For example, instead of asking students to write an essay on a given topic, ask them to generate a new topic based on a set of criteria, and then write an essay on it, and then have both pieces of work included in the marking criteria.
- Use AI to provide formative and summative feedback to students, using natural language processing and sentiment analysis. For example, instead of giving students a mark or grade, give them a personalised and constructive feedback at key stages that highlights their strengths, weaknesses, areas for improvement, and suggestions for further learning. Again, including all of these steps in the final mark.
- Use AI to educate students about plagiarism, cheating, and other forms of academic dishonesty, using data analysis and pattern recognition. For example, use AI to compare and contrast student responses, identify sources and references, and flag any anomalies or inconsistencies. There is no

AI detection software that can accurately ascertain if a piece of text is AI generated.

What might the future look like?

The examples above illustrate how AI can potentially transform the processes and outcomes of learning and teaching in ways that challenge our assumptions and expectations about education. If AI can perform some of the core tasks that we associate with human intelligence, such as reasoning, writing, or creating, then what is the role and value of human educators and learners? How can we ensure that the use of AI in education is ethical, responsible, and beneficial for all? And how can we prepare our students for a future where they will need to coexist and collaborate with AI systems in various domains of life and work?

These are some of the questions that we need to address as we rethink schooling itself in light of the emergence and impact of generative AI. We cannot simply continue with the traditional model of education that relies on standardised curricula, assessments, and pedagogies, and that treats students as passive recipients of information and skills. Nor can we uncritically adopt AI tools and solutions that might undermine the agency, autonomy, and diversity of human learners and teachers. Rather, we need to reimagine education as a creative, collaborative, and critical endeavour that fosters the development of human values, capabilities, and identities in an increasingly complex and uncertain world. Happily, there are myriad examples of teachers across the world attempting to do just that.

To do this at scale, we need to adopt a holistic and humanistic perspective that recognizes the interplay between cognitive, emotional, social, and moral aspects of learning and teaching. We need to design learning environments and experiences that enable students to explore their interests, passions, and purposes, and to engage in meaningful projects and problems that matter to them and their communities. We need to empower students to become active and responsible creators and consumers of knowledge and information, who can critically evaluate and ethically use AI systems and products. And we

need to cultivate students' lifelong learning skills and dispositions, such as curiosity, resilience, adaptability, and self-regulation, that will help them navigate and thrive in a rapidly changing world.

In short, we need to embrace the radical impact that generative AI will have on the nature of work, education, and life, and use it as an opportunity to redefine and enhance what we can offer our students as human educators. By doing so, we can ensure that schooling remains relevant, valuable, and enjoyable for both learners and teachers in the age of AI.

To achieve this, it will be essential to utilise AI platforms and strategies that reduce the amount of time and effort that schools currently spend on low-level, low-impact tasks, and redirect that amazing resource of creative and critical thinking to new opportunities which break new ground for and with our students.

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ENGAGING WITH GENERATIVE AI IN EDUCATION: FOUR IMPORTANT MINDSET SHIFTS

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Engaging with generative AI in education:

Four important mindset shifts

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As educators, we are navigating uncharted territory with generative AI (GenAI). There are no established maps or well-trodden paths to guide us; instead, each encounter with AI presents both opportunities for discovery and moments of uncertainty. We are, as the saying goes, making the path by walking.

The rapid and often disorienting integration of GenAI into the tools we and our students use has left many feeling anxious, overwhelmed, and uncertain. It has forced us to confront difficult questions about academic integrity, the purpose and effectiveness of assessments, and our role as educators. However, this technological shift also offers unprecedented opportunities to enhance learning, encourage creativity, and prepare our students for a future where interaction and collaboration with AI are commonplace.

In this guide, we aim to provide practical advice on how to engage productively and responsibly with GenAI in education. We will discuss key mindset shifts and offer insights and actionable strategies to help you navigate this new landscape with confidence and creativity.

Four mindset shifts for effective engagement

1. View GenAI as a partner, not a peon
One common pitfall we see is to regard

GenAI merely as a tool for handling mundane administrative tasks or generating class materials. While GenAI can certainly assist with these functions, limiting its use risks overlooking its true potential as a collaborative partner.

Recent research suggests that those who engage with GenAI not just for content generation but also for advice report higher productivity and improved outcomes compared to those who treat it merely as an 'answer machine' (Keppler, Sinchaisri, and Snyder, 2024).

As we become more comfortable with seeing GenAI as a partner, we can begin to appreciate it as a resource with a vast knowledge base and unique perspectives that can enhance our work. Educators should view AI as a powerful collaborator, not a replacement for human judgment. This balance ensures we leverage AI's strengths while applying our uniquely human insights and ethical considerations.

Practical tips:

- Experiment with using GenAI as a brainstorming partner when planning class activities. Rather than having it create a lesson from scratch, invite it to critique your existing plans and suggest creative enhancements, offering insights into how students might engage with the activities.
- Explore how GenAI can assist in drafting more personalised learning materials. Request it to generate varied explanations for complex concepts, such as analogies that resonate with students' specific interests.
- Use GenAI as a 'critical friend' to review and provide feedback on your teaching strategies. It can propose alternative approaches to challenging topics or suggest different ideas for differentiating instruction.

Example:

Rather than solely using GenAI to write a multiple-choice quiz, consider asking it to suggest thought-provoking discussion prompts that tie your lesson content to current events. This approach transforms GenAI from a mere task-completer into a partner in promoting deeper learning.

Embracing GenAI as a partner can expand our teaching strategies. To fully realise its potential, we must go beyond merely accommodating GenAI in our teaching and start actively exploring how it can enhance our practices.

2. Shift from a policing mindset to a possibilities mindset

It is natural to approach new technology with caution, especially when it can produce outputs that are indistinguishable from human work, raising concerns about academic integrity. However, if we only focus solely on banning or restricting GenAI use, or on the tasks it might replace, we risk overlooking the opportunities it presents.

Shifting from a 'policing' mindset to one focused on 'possibilities' encourages us to explore innovative ways of integrating GenAI into our practice, rather than seeing it as a threat to be contained. As AI becomes more embedded in our everyday tools, the distinction between human and AI creation will continue to blur, leading to a new class of content co-created with, rather than by, GenAI.

Practical tips:

- Instead of asking "How do we stop students from using GenAI?" (which is not possible because GenAI is quickly becoming ubiquitous and not detectable (Fleckenstein et al., 2024)), ask "How can we use GenAI to make learning more engaging and valuable?"
- Explore ways to integrate GenAI into your lessons that enhance critical thinking, curiosity, and creativity. For example, demonstrate to students how GenAI tools like Microsoft Copilot can present different (and often problematic) perspectives on historical events and connect them to current issues.
- Engage your students in discussions about how GenAI might shape their future careers and how they can prepare for these changes. Include conversations about AI ethics, such as its inherent biases, the use of training data, and its environmental impact.

Example:

Rather than attempting to create assignments that are 'GenAI-proof,' teachers could design projects that explicitly incorporate GenAI tools. For instance, students might be tasked with using GenAI to generate initial ideas, and then critically evaluating and refining those ideas. The assignment could also include tasks that would be challenging or impossible without GenAI, such as generating relevant visuals using free GenAI image-generation tools.

This approach acknowledges the reality of GenAI's presence and educates students on how to use these tools productively and responsibly.

Focusing on GenAI's possibilities requires us to stay adaptable. As AI rapidly evolves, we must embrace continuous learning, adopting the 'Yet' mindset.

3. Remember the importance of 'Yet'

GenAI technology is advancing at a rapid pace. What it can't do today, it might be able to achieve in a month. This rapid evolution requires us to adopt a forward-thinking approach in our policies, rules, assessment design, and personal skill development – otherwise, we'll constantly find ourselves needing to update policies or change guidelines. As the hockey adage goes, "skate to where the puck is going, not where it has been". The concept of 'Yet' also reminds us that our understanding and application of AI in education is an ongoing journey – we are not there yet.

It's also worth exploring interdisciplinary applications of AI. AI's versatility opens the door to innovative cross-curricular projects, helping students make connections between different subjects. For instance, a history project could incorporate AI-generated art, or a science experiment could use AI for data analysis, fostering a more holistic learning experience.

Practical tips:

- Stay updated on GenAI developments by engaging with professional networks such as LinkedIn and Substack. Consider starting or joining a discussion group at your school or district to share GenAI experiences and best practices. Collaborative learning can help

you and your colleagues become more familiar with GenAI.

- Avoid trying to make take-home assignments 'AI-proof,' 'AI-resilient,' or 'AI-resistant'. GenAI output is ubiquitous, undetectable, and constantly improving. An assignment that might challenge GenAI today could become easier for GenAI in just a few months, requiring you to redesign your assessment again to keep pace.

- Foster a growth mindset in yourself and your students regarding GenAI. Demonstrate safe and effective ways to explore it, and use GenAI mishaps as teaching opportunities to iteratively refine prompts, discuss current limitations, and evaluate the strengths of different GenAI tools.

Example:

Rather than imposing rigid (and completely unenforceable) rules about GenAI use, develop flexible and forward-looking principles that can adapt as technology advances. For instance, 'We will use GenAI tools to enhance our learning process and will regularly review and update our practices as new capabilities emerge'. Or, 'We aim to keep humans in control and ensure that GenAI contributions are transparent and well-documented'.

As GenAI's capabilities expand, our approach to assessment must also evolve. Instead of restricting GenAI, we could guide its effective use through a 'menu' approach, for example, offering students options on how to integrate GenAI in a way that supports their learning objectives.

4. Consider a 'menu' approach to AI use in learning and assessment

Traditional methods for controlling GenAI use in assessments are ineffective. Instead of trying to create 'AI-proof' assignments, relying on unreliable detection methods that can easily be circumvented, or using a multi-coloured 'assessment scale' or traffic light system to (on paper but not in practice) dictate gradations of GenAI use, consider adopting a 'menu' mindset to assessment and learning design in a world where GenAI is becoming ubiquitous.

A scale or lights imply a linear progression of GenAI use from none, to planning, drafting,

refining, to 'full' use. Even if we don't see the scale as imposing restrictions, the language of gradation undermines the complexity of the possibilities of GenAI use and encourages a false sense of linearity. Additionally, even saying "you can only use AI for brainstorming" damages the validity of the tasks we set for students, as setting conditions that cannot be adequately enforced is a threat to the validity of a task. If a task is designed to be conducted without access to notes, but some students access their notes, then any judgements about those students' outcomes for that task are invalid (Dawson, Nicola-Richmond, and Partridge, 2024).

A menu approach (Liu, 2024) offers greater flexibility and creativity in assessment design, aligning well with the rapidly evolving nature of GenAI. It allows educators to adapt their assessments as new GenAI capabilities emerge, ensuring that our evaluation methods remain relevant and effective in an AI-augmented educational landscape. Moreover, it encourages both educators and students to adopt the mindset that a wide variety of AI tools can be used in many ways, much like a menu that offers various entrees, mains, and desserts.

Just as eating everything from a menu will lead to feeling unwell, relying on AI tools for everything will hinder learning. While we can't stop students from 'consuming' all options, our role as educators is to guide them toward the most beneficial 'menu items' – those AI tools and applications that will be most productive for learning, tailored to different learning or assessment activities. The choicest menu items are unlikely going to be as simple as 'just planning' or 'just drafting'.

A menu of AI uses in learning and assessments might look like:

As a critical friend – Soups

- Suggest analyses
- Provoke reflection
- Provide study/organisation tips
- Practising

Getting started – Entrees

- Suggesting structure
- Brainstorming ideas

Engaging with literature – Bread service

- Suggesting search terms
- Performing searches
- Summarising literature
- Identifying methodologies
- Explaining jargon
- Fixing reference list

Generating content – Mains

- Writing some text
- Making images, video, audio
- Making slide decks

Analyses – Lighter mains

- Performing analyses of data, text
- Suggesting counterarguments

Editing – Coffees

- Editing tone
- Improving clarity and readability
- Fixing grammar
- Shortening

Feedback – Desserts

- On all of the above elements
- Specifically on rubric criteria

Practical tips:

- Provide students with a “menu” of ways to use AI in their assignments, focusing on applications that enhance learning. Demonstrate how to engage with these options in class using available AI tools (e.g., using [elicit.com](https://www.elicit.com) or [perplexity.ai](https://www.perplexity.ai) to find sources, and then Microsoft Copilot to suggest counterarguments).

- Encourage students to reflect on how they used AI in their work and what they learned from the process. This might include documenting the different “menu items” they selected and how they sought input and output from GenAI.

- Adopt a ‘two lane’ approach to assessment (Bridgeman and Liu, 2024), emphasising that assessments should either be secured (supervised, with AI use allowed or disallowed) or ‘open’ (unsupervised, where AI use is unrestricted because it’s impossible to limit or control). This approach provides clarity for both students and teachers and promotes a realistic, forward-thinking approach to assessment design.

Example:

For a literature analysis assignment, the ‘menu’ might include options such as using AI to generate initial interpretations and then critically evaluating and expanding on them; employing AI to find relevant quotes, followed by the student explaining their significance in their own words; and utilising AI to suggest counterarguments to the student’s main argument, which the student then addresses in their essay. These choices encourage students to collaborate with AI as a learning partner, actively seeking both input and output from GenAI, rather than just passively relying on its outputs.

Embracing the journey

As we navigate this new AI landscape in education, it’s crucial to approach it with an explorer’s mindset – embrace the idea of partnership, think of the possibilities, recognise we’re not there yet, and appreciate the choices available. By adopting these mindset shifts, you can start to move from seeing AI as a threat (or an answering machine) and instead see it as a powerful partner. This will augment (not automate!) your teaching and help you prepare your students for a future where collaboration with AI is an integral part of their personal and professional lives.

Remember, you don’t need to be an AI expert to lead effectively in this new era. Your content expertise, teaching skills, and ability to facilitate meaningful learning experiences remain the cornerstone of education.

As professionals, our responsibility is clear: we must learn to walk this path and guide others along it too. It’s time to move past fear and dismissal, and instead explore how we can harness AI to push our creativity and humanity to new heights.

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CONCEPTUALISING GENERATIVE AI

Sophie Whish



Conceptualising generative AI

Sophie Whish

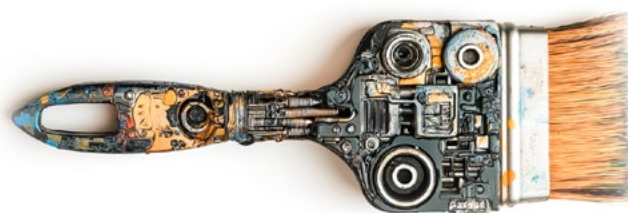
As my student types prompts into Canva's image generator, I think to myself, 'Will the QCAA accept this as an alternative approach to this student's focus?'. As an early career teacher, I am constantly nagged by the second voice in my head: the governing bodies that prescribe the assessment criteria. I like to tell my students that we are actually working together to get the best mark possible from the external moderators, rather than them working independently to get the best mark from their teacher. When my student came across the work of Irish conceptual artist Kevin Abosch and asked if it was really art if an artificial intelligence (AI) image generator made it, I did not have an answer. Interestingly, it got me thinking about other conceptual artists and how their work challenged the rigid sensibilities of the early 20th century art world. This is not surprising considering the Cambridge University dictionary's limiting definition of the visual arts: 'the arts of painting and sculpture rather than literature and music' (Cambridge University Press, n.d.).

Marcel Duchamp debuted his work *Fountain* – an upturned urinal – in April 1917 to a controversial reception. Duchamp's entry ruffled the feathers of the art world, sparking a conversation that will likely never end. Whether or not critics and audiences considered it art, it changed the way we define the visual arts and thus began the genre of the ready-made (Grovier, 2017; Philadelphia Museum of Art, 2017). Conceptual art has since been defined as a movement that first emerged in the late 1960s in which the foundation of the artwork is the idea or theoretical concept rather than the skill or finished product (Rudd, 2023). However, Duchamp moved beyond traditional skills and recognised the absurdity of displaying a urinal 50 years prior. Based on this definition, the use of AI and image generators fits within these confines and could be considered conceptual art. Creativity is considered a uniquely human trait (Doshi & Hauser, 2024), and it is the human

that has to conceive of the idea or concept before prompting the AI to generate the image. Therefore, AI – particularly image generators – should be embraced as an alternative media and explored by students and educators with the open mind of a conceptual artist.

Conceptual artists challenged the long-held idea that art practice should be laborious, require acutely honed skills and provide the purpose for the existence of the work (Zygadlo, 2024). While many fear that AI will replace the need for artists (Zygadlo, 2024), Melbourne-based artist Dr Sam Leach reinforces historical conceptions of art making by collaborating with AI rather than rejecting it. Leach uses AI as a tool to generate images that he then skilfully paints. For his 2023 Wynne Prize entry he fed images of historical landscape paintings to an AI generator; teaching the program to create images that possess the visual qualities of these masters (Art Gallery of NSW, 2023). It is his belief that 'art is not for simplifying concepts; but rather it is good at illustrating the complexity of concepts' (Leach, 2024). His work illustrates the relationship between humans and AI but also challenges the idea that only humans can combine visual language to communicate complex meanings. He challenges the idealised landscapes that artists have historically documented which inform an altered view of the world (Art Gallery of NSW, 2023).

AI will be the next wave to change the way we make, view and understand visual arts. It can be used as a tool to both challenge and reinforce ideas long held by the art world. Like conceptual art, it rests on ideas and theoretical concepts rather than traditional skills. Similarly, it requires a human touch and the appropriate context to communicate ideas and connect with the audience. So yes, Laura-Lee, AI generated images can be considered art.



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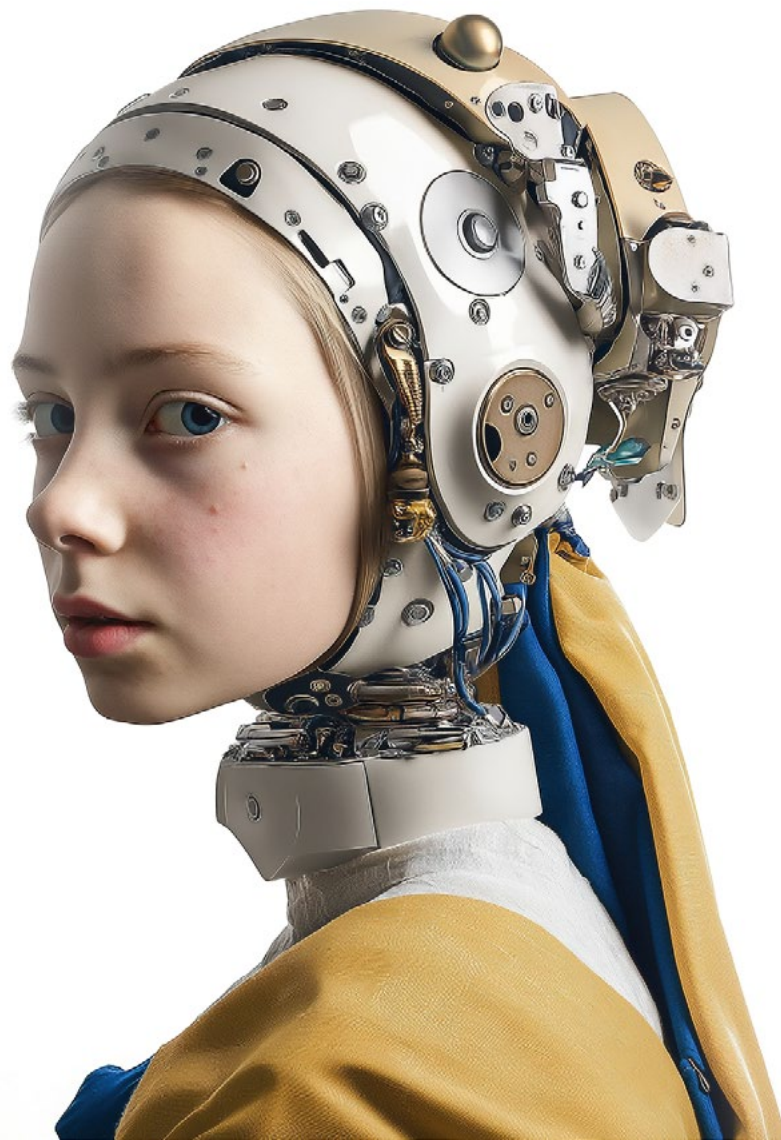
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THE NEED FOR A NATIONAL AI FRAMEWORK IN AUSTRALIAN EDUCATION

Josh Valeri

The need for a national AI framework in Australian education

Josh Valeri

In 2024, Australia's education system stands at a critical crossroads. The rapid integration of artificial intelligence (AI) into classrooms brings enormous potential to enhance learning but also poses significant risks if not managed within a cohesive national strategy. The federal government's Future Schools Initiative has already laid the groundwork by prioritising digital literacy and ethical technology use, positioning AI as a central component of modern educational practices. However, the lack of a dedicated national AI framework threatens to fragment these efforts, potentially exacerbating disparities between students and schools across the nation.

Learning from global AI policies

As Australia navigates its AI future, there is much to learn from countries that have already established comprehensive AI policies. Nations such as Finland, Singapore, and the United States offer valuable blueprints, each providing lessons on how to effectively balance the opportunities and challenges posed by AI in education. Finland's AI Finland strategy, for example, not only promotes ethical AI development but also ensures its integration across various sectors, including education. This strategy has translated into tangible benefits, such as personalised learning environments that enhance student engagement and outcomes, particularly in digital and STEM education.

Similarly, Singapore's AI governance framework outlines clear guidelines for the ethical use of AI, with a strong focus on transparency, accountability, and fairness. Singaporean schools have integrated AI into their Smart Nation initiative, using AI to personalise learning experiences and streamline administrative processes, thereby fostering greater educational equity.

In the United States, the National AI Initiative Act coordinates AI research and development across sectors, including education, with a strong emphasis on data privacy, equity, and bias prevention. The American education sector has seen AI tools being used to support students with disabilities, illustrating AI's capacity to enhance inclusivity in education.

These international efforts provide Australia with a robust foundation on which to build its own national AI framework, one that addresses the unique challenges of the Australian educational landscape while aligning with global best practices.

The imperative for a national AI framework

The necessity of a national AI framework in education cannot be overstated. It is crucial for ensuring consistency, equity, and ethical standards across Australia's diverse education system. Without a unified strategy, disparities are likely to widen, with well-resourced urban schools reaping the benefits of AI while underfunded rural or remote schools are left further behind.

The 2024 State of the Schools report underscores the persistent digital divide between urban and rural areas, a divide that could be exacerbated by uncoordinated AI implementation. Moreover, Australia's ongoing initiatives to address Indigenous education disparities, such as Closing the Gap, could be significantly enhanced by AI—provided these tools are developed in collaboration with Indigenous leaders and are sensitive to Indigenous knowledge systems.

However, it is essential to avoid the pitfall of viewing AI as a panacea. Addressing broader systemic issues and entrenched inequities is

critical. AI must be part of a holistic strategy that integrates Indigenous leadership and cultural respect, ensuring that technology supports, rather than undermines, efforts to resolve these deep-rooted challenges. For example, AI could be harnessed to preserve and promote Indigenous languages, integrating them meaningfully into the curriculum.

While the Australian Government's AI Ethics Framework lays out general principles, it falls short of addressing the specific needs of the education sector. This framework provides valuable ethical guidelines but lacks the detailed, actionable insights necessary for educators and policymakers. For instance, while it highlights the importance of data protection, it does not offer clear directives on how to handle sensitive student data within educational contexts—a critical oversight. Moreover, while the framework promotes inclusivity, it does not ensure that AI is employed as a tool to close, rather than widen, existing gaps in educational equity.

A more detailed, education-specific framework is needed—one that provides clear guidance on how to responsibly integrate AI in classrooms while safeguarding student rights and ensuring equity across Australia's diverse educational landscape.

Essential components of a national AI framework

For a national AI framework to be effective in the Australian context, it must incorporate several key elements tailored to the specific needs and challenges of the education sector:

- **Data governance and privacy protocols:** The framework should build on the principles established in Australia's AI Ethics Framework, implementing stringent security measures and transparent consent processes to protect student data. Building trust in AI systems is crucial, and the framework must explicitly reference relevant guidelines from the Australian Curriculum, Assessment and Reporting Authority (ACARA) and the Office of the Australian Information Commissioner (OAIC) regarding student data protection.

- **Addressing bias and ensuring equity:** AI tools must be developed using datasets that reflect the diversity of Australian society, including Indigenous communities and other underrepresented groups. The framework should include ongoing monitoring mechanisms to detect and correct biases, particularly in critical areas such as grading, resource allocation, and student support services. Additionally, the framework should acknowledge and address the unique challenges faced by Indigenous communities and those in remote areas, ensuring that AI tools are developed and deployed in ways that respect and incorporate diverse cultural perspectives.

- **Professional development for educators:** Teachers need more than just access to AI tools; they require ongoing, tailored professional development to use these tools effectively and ethically. The framework should mandate consistent, high-quality training programs across all states and territories, with special attention to regions facing high teacher turnover and digital infrastructure challenges, such as Western Australia and the Northern Territory. This approach will help ensure that even underfunded schools have the necessary support to integrate AI tools effectively.

- **Technological infrastructure:** The effective integration of AI into education requires robust technological infrastructure, a significant challenge, particularly in remote or underserved communities. While the vision of universal AI access is compelling, it must be pursued pragmatically. Many schools, particularly in rural areas, continue to struggle with unreliable internet access and outdated technology, which risks further entrenching educational inequalities.

To address this, governments and systems should launch small-scale pilot programs in select regions to demonstrate the potential benefits of AI. These pilots would provide a model for broader implementation by focusing on upgrading digital infrastructure in a manageable number of schools and allowing for the testing and refinement of AI tools in real-world educational settings. The insights gained from these pilots could then inform more extensive national initiatives.

- **Political and financial considerations:** Large-scale national projects, such as the National

Broadband Network (NBN), have demonstrated the challenges of securing political and financial support for nationwide infrastructure improvements. To circumvent these challenges, the governments and systems should build coalitions of stakeholders — including private sector partners — to advocate for and contribute to the necessary funding. By framing the initiative as a series of strategic, incremental steps rather than an all-encompassing overhaul, the goal of integrating AI into education becomes more attainable and less vulnerable to the pitfalls that have hindered past projects.

Conclusion

In the context of Australia's 2024 education policy landscape, the development of a national AI framework is not just a response to technological advancements — it is a strategic imperative. Such a framework is essential to ensure that AI is integrated into Australian schools in a way that is consistent, ethical, and equitable.

By learning from global examples such as Finland, Singapore, and the United States, Australia can develop a framework that addresses local challenges while aligning with international best practices. Through targeted pilot programs, public-private partnerships, and a commitment to continuous improvement, AI can be harnessed to enhance learning outcomes while safeguarding the rights and equity of all students.

The decisions made today will shape the future of education in Australia. It is imperative that policymakers, educators, and stakeholders come together to craft a framework that ensures AI serves as a tool for equity and excellence, rather than a source of division.

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YARNING ABOUT UNCLE CHATTY GEE: AI HARMING INDIGENOUS KNOWLEDGES

Tamika Worrell



Yarning about Uncle Chatty Gee:

AI harming Indigenous knowledges

Tamika Worrell

The use of generative artificial intelligence (AI) in education can pose significant risks to Indigenous knowledges, though it also has potential benefits if used responsibly. Here are some key points to consider.

Risks to Indigenous knowledges

1. Misrepresentation and inaccuracy

Generative AI systems rely on large datasets, often sourced from the internet, which may not accurately represent or understand the nuances of Indigenous knowledges. This can lead to the distortion or oversimplification of these knowledges, which are often deeply rooted in specific cultural contexts.

2. Cultural appropriation

AI systems might generate content that incorporates elements of Indigenous cultures without proper understanding or respect for their significance. This can lead to cultural appropriation, where sacred or culturally significant elements are used out of context, potentially causing harm to the communities involved.

3. Erosion of traditional knowledge transmission

Indigenous knowledges are traditionally passed down through oral traditions, ceremonies, and community-based practices. The introduction of AI in education might shift the focus away from these traditional methods, potentially undermining the role of elders and other knowledge keepers in the transmission of knowledge.

4. Data sovereignty concerns

Indigenous communities have the right to control how their knowledge is used and shared. If AI systems are trained on data without the consent of these communities, it can violate their data sovereignty and lead to the exploitation of their intellectual property.

Potential benefits

1. Increased access to educational resources

AI can potentially increase access to educational resources for Indigenous students, especially in remote areas. This could include language learning tools, culturally relevant educational materials, and more.

2. Preservation and revitalisation of languages

AI can be used to help preserve and revitalise Indigenous languages, which are often at risk of extinction. Language models can assist in creating resources for language learners, translating texts, and recording oral histories.

3. Customisation and personalisation

AI can offer personalised learning experiences that respect the cultural context of Indigenous students, adapting educational content to their specific needs and backgrounds.

Conclusion

The impact of generative AI on Indigenous knowledges in education depends on how it is implemented. It is crucial that Indigenous communities are actively involved in the development and deployment of AI technologies to ensure that their knowledges are respected, protected, and accurately represented. Collaboration with Indigenous knowledge keepers, ethical guidelines, and policies that prioritise Indigenous data sovereignty are essential to mitigate potential harms (ChatGPT, 2024).

It seems appropriate to commence a yarn regarding the risks that generative AI poses to Indigenous knowledges by getting Uncle Chatty Gee's (ChatGPT) perspective. The above extract is from the question prompt 'Does the use of generative AI in education harm Indigenous knowledges?'



**Images generated by Tamika Worrell and Midjourney drawing on themes of Indigenous perspectives and the use of generative AI*

What is AI?

Colloquially known as AI, generative AI refers to a range of technologies that draw on large language models to generate texts, images and videos. It has become increasingly popular as a language model to generate and locate information with ease. AI is a blanket term, referring to a range of technologies that exist in many different forms. I use the term AI here to refer to a range of generative AI technologies that use artificial means to generate texts, images and videos. This includes OpenAI platforms such as ChatGPT.

What are the concerns?

A primary concern for Indigenous peoples and knowledges is the information that AI models are trained on. AI models draw from a primarily western corpus of knowledge and is primarily created from a lens of white men. Non-Indigenous peoples have consistently stolen from Indigenous cultures, including our art practices. AI poses a new frontier in which Indigenous art can be reproduced, misappropriated and sold for profit without any engagement from Indigenous peoples and communities.

It is evident that AI will continue to shape education and pose a range of challenges for educators and students. Some of the challenges are logistical ground level impacts, such as students limiting their learning by plagiarising content, and learning from inaccurate or fabricated content (Grassini, 2023). There is a much more sinister concern, however, relating to [further damaging of Indigenous intellectual rights and sovereignty](#).

Carlson and Richards (2023) affirm the urgency of action needed to prevent AI further encroaching on Indigenous data and knowledge sovereignty. Sherlock (2023) shares that as universities are working at “reconciling the impacts of colonialism and decentralising white Western and patriarchal ways of knowing”, AI language models are unable to evaluate the primarily western sources that they are drawing knowledge from. It is timely and integral that the relationship between AI and Indigenous knowledges is understood, due to the potential AI has for producing inaccuracies and misappropriation about Indigenous peoples, histories and contemporary lives, further perpetuating damaging misinformation that Indigenous peoples already fight against (Carlson & Richards, 2023).

Frameworks and protocols

Aboriginal and Torres Strait Islander knowledges in classrooms remains a national priority, affirmed through the [Mparntwe Education Declaration](#), Australian Curriculum Cross-Curriculum Priority [Aboriginal and Torres Strait Islander Histories and Cultures](#) and the principles of the [Closing the Gap](#) initiative which highlights formal partnerships and shared decision making and culturally safe and appropriate education (Commonwealth of Australia, 2023).

The Australian Government’s Interim Report 2024, Safe and Responsible AI in Australia Consultation makes no reference to Indigenous peoples, indicating a significant issue concerning safety and Indigenous intellectual and cultural rights. [Australian Framework for Generative Artificial Intelligence \(AI\) in Schools](#) offers a set of

principles to guide school communities within Australia – this includes reference to the need to respect Indigenous Cultural and Intellectual Property (ICIP):

4.4 Cultural and intellectual property: generative AI tools are used in ways that respect the cultural rights of various cultural groups, including Indigenous Cultural and Intellectual Property (ICIP) rights.

Whilst this is a seemingly positive inclusion, more work is needed to guide teachers and school communities to understand the ways that generative AI can threaten ICIP. Mechanisms need to be put in place to ensure Indigenous community wellbeing and self-determination are not threatened by AI developments (Ruster & Brown, 2020; Lewis, 2023).

This has been reiterated through the Indigenous Protocol and Artificial Intelligence Working Group, and their position paper (Lewis, 2020). This position paper offers a conceptual starting point for AI engagement with Indigenous concerns being centralised. In Australia, Abdilla et al. (2021) are developing a set of protocols that explore how AI can be grounded in Indigenous Cultural Values. Teachers can explore the [Indigenous Protocols AI Laboratory](#) and further through [Old Ways New](#).

Considerations for the future

Settler colonial practices have historically and continually damaged our cultures and languages. As a result the need for Community control and Indigenous governance is heightened (Lumby, 2024). There are many considerations educators must make in navigating these frontiers. Ultimately, it is through the appropriate evaluation and consideration of perspectives, authorship and authority. The considerations in documents such as [AIATSIS Guide to Evaluating and Selecting Education Resources](#) can be utilised and applied to AI contexts. Importantly, critical self-reflection remains a key component of practice here.

In the classroom, the ethical considerations of using AI can be implemented in positive ways, through building students' critical thinking and questioning skills (Creely et al., 2023). These conversations with students work hand in hand with Indigenous content consideration, asking students to consider concepts of power, authority and accuracy.

Australian teachers have long voiced concerns with their ability to incorporate Indigenous perspectives into the curriculum (Bishop, 2022; Madsen et al., 2021; Worrell, 2023), and the global uptake of AI tools may be an option to meet their requirements. As my research has identified, teachers experience a fear when engaging, or attempting to engage in Indigenous content in their classrooms (Worrell, 2022; 2023). It is clear that the use of AI is not the solution to this fear.

My current research aims to identify how non-Indigenous educators are engaging with generative AI as it relates to Indigenous content, of which little is currently known. Are teachers creating 'Indigenised' artworks on platforms such as Canva? Are they using AI to script PowerPoints, lesson plans or other content for students to engage in? Perhaps they are purchasing content generated by non-Indigenous peoples using AI for teaching resources and activities.

As technologies develop, teachers too will develop and adjust. As illustrated earlier in the generated response, there is sufficient information available to know that AI poses risks to Indigenous knowledges, but further work is needed to ensure the use of these AI tools are culturally appropriate, and to guide and scaffold how to use these in culturally and ethically appropriate ways. This work entails ensuring Indigenous involvement at all levels, from conception and technology creation, to policy, application and evaluation (Worrell, 2024). As Sherlock (2023) affirms, AI has much to learn from Indigenous knowledges, too.

The question remains: will the prevalence of generative AI use in education contribute to furthering a 'tick-a-box', tokenistic approach to including Indigenous perspectives in education?

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FOCUSING ON QUALITIES THAT MATTER: SOFT SKILLS



Kael Little

Focusing on qualities that matter: Soft skills

Kael Little

As artificial intelligence (AI) and automation continue to advance, the skills and qualities that distinguish humans become increasingly valuable. While proficiency in working with AI is undeniably essential in the modern world, it is equally important to recognise that education should focus on nurturing each student's individual talents, encouraging them to pursue their passions, and ensuring they reach their full potential. In this context, educators must equip students with the skills needed to navigate a rapidly changing world, skills that will set them apart in an era of AI's growing influence. While modern machine learning is remarkably advanced, it cannot replicate the full range of human capabilities. Therefore, educators must prepare students with a broad repertoire of skills that will allow each individual to realise their utmost potential. Teaching interpersonal skills is essential, and many educators already incorporate this to some extent. However, stepping back to understand how these human qualities complement and enhance technological advancements will better enable educators to meet the diverse needs of their learners. Preparing students to be valuable members of our community is no easy task. By focusing on developing interpersonal and soft skills, we empower students to excel in areas where AI falls short, allowing them to thrive in our ever-evolving and complex world.

Soft skills, defined as non-technical abilities that involve interpersonal and intrapersonal interactions, play a crucial role in enabling individuals to navigate social contexts effectively (Dolev & Itzkovich, 2021). These skills are indispensable in the modern world, as artificial intelligence, while transformative, cannot replicate the nuanced human qualities that are essential for meaningful contributions in society. Therefore,

it is vital for educators to focus on nurturing these skills that support their overall personal development and capacity to contribute positively to society (Robles, 2012). Students that possess these qualities will be sufficiently prepared to chase their dreams and realise their individual talents.

1. Critical and creative problem solving

Wells (2024) highlights that critical and creative problem solving is something that AI cannot fully replicate. Artificial intelligence can analyse data and provide solutions to routine tasks, but it lacks the ability to devise creative solutions to complex problems. Understanding a problem accurately and adapting a solution to the uniqueness of the issue is a complex process that requires human reasoning to wholly solve it. Problem solving is an essential skill for students and one that will help them utilise their talents.

Frameworks:

Teaching problem solving is as challenging for teachers as it is for students beginning the process. I always start with focusing on how to approach a problem. This means establishing a framework that will govern students' work. I have used the "IDEAL" framework which breaks down the five stages that students will go through when solving the problem. Identify the problem, define the goals, explore strategies, act on the best strategy and evaluate the solution.

Real-world contexts:

Once students have a framework, they can begin to immerse themselves in a problem. I firmly believe that a real world context for problem solving makes the most meaningful problem solving experience. Be creative and try to tailor tasks to the interests of the class. This can be anything; quoting the cost of a job using area and volume, measuring the volume of a lake using integration or using graphs to design a theme park. In a recent lesson with a Year 8 class, we used the circumference of a circle to calculate the approximate flight distance between my hometown in Australia and where I currently live in the UK. Soon after, the class eagerly joined in wanting to see how far it was to fly to a number of different places in the world.

2. Collaboration and teamwork

A recent study conducted by Forbes showed that 62% of educators were concerned about the reduced interaction between students (Hamilton, 2024). Artificial intelligence focuses on minimising the time it takes to complete tasks and with this comes a reduced amount of interaction between students and all members of society. AI can enhance certain aspects of teamwork. However, it does not possess the unique skills of communicating effectively in group settings. Therefore, it is paramount that educators look to build in opportunities for their students to collaborate on work together.

Think-pair-share:

Giving students the opportunity to work with their peers can be a powerful experience. I often pose students a problem, allow students time to think independently, then have them discuss their thoughts with a partner before sharing their solution with the class. I have found this works best by beginning with small tasks and allowing them to become comfortable with the process. Gradually, I have built up to asking students more open-ended questions that require deeper thought and multiple steps. With these problems, I will provide each pair with a miniature whiteboard and a marker so that they can discuss the issue and formulate a solution before allowing them to compare their solution to other pairs.

Group work:

Managing student behaviour and engagement can be difficult in a group work setting, which leads many teachers to avoid this strategy. Initial group tasks that I deployed in my classes were much the same. However, with practice and guidance, students adapt to this. By scaffolding tasks, setting clear expectations, and assigning specific roles, students are held accountable for their contributions while also gaining valuable insights into teamwork and group dynamics.

Compassion and empathy:

AI does not have the capacity to understand emotions the way that humans do. Compassion and empathy are multifaceted skills that allow humans to see situations from another perspective, to understand feelings and be non judgemental in response. Being able to develop connections

through compassion and empathy gives humans an edge as they can assess situations and respond accordingly. Ultimately, students that can display compassion and empathy will be primed to operate in whatever path they choose to follow.

Peer mentoring:

Allowing students to gain help or seek advice from each other has provided many beautiful moments in my career. Watching students' joy as they assist each other or overcome challenges is a profound way to foster compassion and empathy. Peer to peer interactions that are based on benefitting someone besides themselves promotes inclusion in the classroom and gives students perspective on how others are placed in their learning. I often plan small segments of my lessons where students can interact to evaluate or provide feedback on contributions to tasks. Doing this regularly has helped students become more compassionate and in tune with their classroom community.

Modelling:

Modelling compassion and empathy is vital in helping students develop these qualities. Embody it in the classroom so that students can see how essential it is. Seize every opportunity to demonstrate these qualities - whether that is listening intently, understanding concerns or responding to needs. These moments leave a lasting impression. For example, if a student seeks more real-life examples to deepen their understanding, adapt your lessons accordingly. Devote extra time to exploring these concepts in your next lesson, emphasise this and you'll see their eyes light up with appreciation.

3. Leadership and decision making

Great leaders create change, provide direction and motivation, and make critical decisions that lead a team towards a goal. Kolawaye (2024) highlights that leadership is still critical to the workforce and being adaptable to the advancements of AI is crucial for leaders looking to grow with technology. While AI can augment processes that will assist with decision making, being able to make crucial decisions that suit stakeholders' needs are what will set leaders apart from automated technology. Affording students the chance to develop and demonstrate

leadership skills should remain in focus for educators to enhance students' individual talents.

Questioning:

Try to create an environment where questioning is encouraged. Questions lead to answers, and to answer a question, a student must make a decision, especially when the question is open-ended. I try to ask students open-ended questions during these tasks and when you think the student has exhausted the conversation, try asking another question. Or have the student ask a question of you. You will be surprised by how much you can both learn about the task when engaging in open-ended questions. Many of these conversations have led to whole class discussions that have changed the course of projects and led to me teaching the task completely differently in future lessons.

Competitions:

Incorporating competition into my lessons has consistently boosted student engagement. Recently, while teaching basic vector operations in two dimensions, I introduced a puzzle activity where students had to match vector facts with their corresponding vectors. Dividing the class into groups, I set a clear goal: complete the task as quickly as possible. This approach transformed what could have been a routine lesson into an exciting challenge. Students not only enjoyed the experience but also had the chance to take on leadership roles, collaborate, and make real-time decisions to win the game. Competitive tasks like these offer valuable opportunities for students to lead, work together, and think critically under pressure.

In conclusion, artificial intelligence has quickly established itself as a transformative force in the education industry. The tools available are vast, flexible and improving rapidly. As technology continues to advance, new opportunities will emerge for teachers to enhance education through this technology. Yet, human intelligence and soft skills must be promoted as AI continues to grow. Adopting a focus on interpersonal qualities will equip students with a comprehensive skill set that complements AI's capabilities and prepares them to follow their passions. Many of the strategies provided will not be new to teachers, but ensuring that they are deliberately incorporated in an impactful way will only benefit students. The goal is to create a balanced

education that promotes interpersonal skills which complement AI, thus allowing students to flourish in any direction that they desire.

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EMBRACING AI IN THE CLASSROOM

Damian Maher



Embracing AI in the classroom

Damian Maher

Although artificial intelligence (AI) has been around since the mid 60s, it is now transforming various sectors, including education. As teachers, understanding how AI can support student learning and addressing the ethical issues surrounding its use is crucial. While teachers are starting to explore the use of AI to support their teaching, to date the use of AI to support students' learning has been limited in Australia due to ethical concerns. AI has been trialled in South Australia and New South Wales. As yet, no reports or publications have been produced from these trials. This article provides an overview of ways AI's can be used to enhance student learning while maintaining ethical integrity.

Understanding AI in education

This article focuses on GenAI, which is a type of AI that generates images, text, videos, and other media in response to inputted prompts. ChatGPT and DALL-E2 are some of the more common platforms at the moment although AI is increasingly being embedded into platforms such as Word, Google Docs etc. AI in education encompasses a wide range of applications, from personalised learning and intelligent tutoring systems which can support students' learning both in the classroom and at home. These tools can significantly enhance the learning experiences of students by providing tailored educational content through identifying areas where students need more support. One way this can be achieved is by using personalised learning.

Personalised learning

One of the most significant advantages of AI in education is its ability to personalise learning experiences. AI algorithms can analyse a

student's performance and preferences to create customised learning. For instance, adaptive learning platforms like DreamBox and Knewton Alta can adjust the difficulty of tasks in real time based on the student's progress. Khan Academy has released an AI tool called Khanmigo which provides individualised support for students. This tool does not provide answers directly to students but instead asks them Socratic questions and in doing so, supports their thinking processes. Additionally, personalised learning provides opportunities for students to learn at their own pace, giving them the time they need to fully understand a topic before moving on. This flexibility can reduce stress and anxiety, particularly for students who may struggle with a traditional, one-size-fits-all approach.

Personalised learning can accommodate a wide range of learning needs, including those of students with writing difficulties, language needs, or other aspects that impact on learning outcomes. Adaptive technologies can provide the necessary support to ensure all students have equal opportunities to succeed. An example is where AI can support students with writing challenges. There are a range of editing tools to support students' writing including Grammarly and Quillbot for students who can write independently but struggle with aspects such as spelling, grammar etc. A feature of these tools is that they provide students with immediate feedback and error correction. Additionally, many writing apps such as Microsoft Word and Google Docs now come with built in editing tools, which means students do not need to purchase additional software.

Other software such as Jenni.ai and Perplexity.ai can support students who are experiencing challenges in formulating ideas and collating new information. These AI text generators can provide the support required for students to participate in classroom-based writing activities alongside their peers. They also allow students to work independently at home. An example of Jenni.ai is that it builds text based on the student's prompt and creates the text sentence-by-sentence, thereby requiring the student to read and consider each sentence before proceeding. 'This sentence-by-sentence approach also allows students to adjust the direction of the text relevant to their desired writing goal.' (Young & Maher, 2023, p. 126).

With personalised learning, AI systems can more easily identify areas where students are struggling, and provide targeted support and interventions. This proactive approach can prevent small issues from becoming significant obstacles to learning. AI systems facilitate this through the collection of student data which allows for the analysis of data on student performance, providing valuable insights for educators. This data can inform instructional strategies, curriculum development, and educational policy decisions. This fits in with the current focus of data-informed practice and is supported by research. In a review by international education experts, a consistent finding was that the best systems all use effective assessment and data to drive improvement: systems cannot improve what they do not measure (McKinsey & Company 2007).

Critical and creative thinking skills

Another way that AI can support student learning is to develop critical thinking and creative thinking skills. This is a component of the Australian Framework for Generative Artificial Intelligence in Schools. It sits under Principle 1: Teaching and Learning, and focuses on ways generative AI tools are used in ways that support and enhance critical thinking and creativity, rather than restrict human thought and experience.

AI-powered platforms can present problems and scenarios that require critical thinking, adjusting the complexity based on the student's progress. These platforms can challenge students with tasks that require analysis, synthesis, and evaluation, which are essential components of critical thinking. AI can create realistic simulations and scenarios where students must apply their critical thinking skills to solve problems. For example, virtual labs, historical reenactments, and business simulations can provide immersive experiences that require thoughtful decision making and analysis.

In relation to creativity, AI-powered tools can assist in brainstorming sessions by generating ideas based on given prompts. These tools can provide diverse perspectives, helping students explore various creative solutions. AI can support creative writing by offering suggestions for plot

development, character creation, and dialogue. Tools like AI-driven writing assistants can help students refine their writing style, experiment with different genres, and overcome writer's block. AI can provide advanced tools for digital art and design, allowing students to experiment with different styles, techniques, and mediums. AI-powered software can suggest colour palettes, design layouts, and even generate artwork based on user inputs, inspiring students to push their creative boundaries. AI can also aid in music composition by generating melodies, harmonies, and rhythms based on the student's input. These tools can help students experiment with different musical styles and structures, enhancing their creativity in composing original pieces.

Ethical considerations in AI use

While there are benefits of AI use to support student learning, it is essential to consider the ethical implications of its use. As AI becomes more integrated into the classroom and home use, students, parents, and teachers must navigate issues related to privacy, data security, bias, and the digital divide.

AI systems often rely on vast amounts of data to function effectively. This data can include sensitive information about students, such as their academic performance, behaviour, and even biometric data. Protecting this data is paramount. Educators and parents should ensure that the AI tools they use comply with the Australian Framework for Generative Artificial Intelligence in Schools (Commonwealth of Australia, 2023). Section 6 of this framework states students and others using generative AI tools have their privacy and data protected.

Bias is an issue in using AI tools. AI systems are only as unbiased as the data they are trained on. If the training data contains biases, the AI system will likely perpetuate those biases. For example, if an AI grading system is trained on essays predominantly written by students from a particular demographic, it may not fairly assess essays or, importantly, support student understanding from students from different backgrounds. As noted by Kathryn MacCallum and David Pearsons in a recent *Conversation*

article, AI use has raised concerns about fairness. As AI tools consume quantities of unfiltered data, the risk is they will reinforce existing biases in this data, perpetuating gender stereotypes and other negative outcomes. For people from Indigenous cultures, AI provides both opportunities and threats.

As AI becomes more prevalent in education, fostering digital literacy among students is essential. Students need to understand how AI works, its benefits, and its limitations. This includes them understanding about data privacy, ethical considerations, and the importance of critical thinking when interacting with AI systems. By equipping students with this knowledge, they can be empowered to use AI responsibly and effectively.

Not all students have equal access to the technology required to benefit from AI-enhanced learning. This digital divide can exacerbate existing educational inequalities. Schools must work to ensure that all students have access to the necessary devices and internet connectivity. This might involve providing laptops or tablets to students in need or creating programs to support families in securing affordable internet access.

A limitation in providing increased opportunities for students to learn with and from AI systems is that teachers have fewer opportunities to engage with students and understand their learning needs. This notion raises the importance of teacher-student relationships. Many educators and researchers have noted the importance of this relationship (e.g., Maher, forthcoming).

One of the outcomes of positive teacher-student relationships is that they can support student wellbeing. In order to provide such support, it is important that teachers are able to identify factors that may be negatively impacting students' wellbeing and put in place strategies to support them. This is particularly important in the current climate, where the impacts of COVID-19 continue to affect some students. If AI replaces interactions teachers have with students, the opportunities to support their wellbeing decreases. The notion of wellbeing is covered under Australian Framework for Generative Artificial Intelligence in Schools. It sits under Principal 2: Human and Social Wellbeing: Generative AI tools are used to

benefit all members of the school community. The impacts of wellbeing related to effects on human contact are not covered in the framework.

AI has the potential to impact education by providing personalised learning experiences for students and to support their critical and creative thinking skills. AI is also able to support students from diverse backgrounds. However, it is crucial to address the ethical considerations associated with AI use, including privacy, data security, bias, and the digital divide. GenAI is currently evolving at a rapid pace. It is important that students are provided with opportunities to use this technology in ways that support their learning.

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IMPLEMENTING AI EFFECTIVELY

Marino D'Ortenzio



Implementing AI effectively

Marino D'Ortenzio

Technology advances at a furious pace, but sometimes just because you can do it, doesn't mean you should. In education, we often are the victims of the latest fads, sometimes imported from overseas, where they were implemented without planning, without regard to the impact of the new initiative, and often without considering the views of the teachers about whether the new initiative is educationally sound.

It was for this reason that the AEU Victorian Branch created the Education Committee, an internal committee focused on producing policy on the issues that matter most to members. This committee develops a policy over many months, seeking out critical friends and experts, undertaking literature reviews, and squarely placing the policy in the context of what happens in the classroom. The process includes inviting feedback on a draft policy from the tens of thousands of members of the AEU Vic Branch, before our Branch Council, comprised of over 100 members elected from the teacher, ES and Principal classes, finalises the policy.

In October 2021, The Branch Council endorsed the [AEU Technology and Teaching Policy](#). This policy highlighted some of the challenges but also the opportunities that present themselves to teachers in relation to artificial intelligence (AI) and machine learning. Indeed, any teacher who has even a rudimentary knowledge of software like ChatGPT can immediately see the potential.

I can see for example, the benefit of the ability of AI to produce very quickly multiple prompts that can be provided to students to assist them to write a narrative about their holiday. Previously, such a task could take a teacher 5-10 minutes. It took ChatGPT less than a second. In my classroom, I would often use articles as a resource for students to practise reading, undertake research, or identify writing styles and techniques.

Yet for some students their reading level or other challenges meant they required a summarised article, or a precis that rewrote the article at a level they could access. The ability to quickly source an article quickly is a major workload reduction strategy.

Yet, when I asked ChatGPT to tell me about myself, it first answered that it did not know me, and then when I asked a second time, with the exact same prompt, it produced a fanciful story of my arrival from overseas as a migrant with my wife and children. I am a natural born Australian. You see the problem.

Does such a significant flaw in the AI system mean we should reject it outright? The view expressed in the AEU's policy is not so black and white. We recognise that AI is here, that students and teachers are using it and that it will likely expand in its scope and use. Importantly, and unlike other fads that the profession has been subjected to (think the harmful effect of standardised whole-cohort testing which has narrowed curriculum, bored students, and sucked much of the joy out of teaching), there is an opportunity here for the views of teachers to be taken into account.

Even if teachers do not implement generative AI, we know that students are using it, and this means our approaches to learning tasks have already begun to alter. We know of schools which are changing the way they approach tasks to ensure that AI does not give students who use it an advantage. For example, some schools are returning to handwritten assessment pieces. Others are setting tasks that assume AI is going to be used, by getting students to identify how they might ask an AI model to produce a result, and then analysing the result to examine where they are flawed.

There are some guidelines that should be implemented before teachers should be using AI, and much of the work arising out of these guidelines needs to be undertaken by the Department. These guidelines are that:

- The Department of Education and Training must be accountable for the implementation, use and decisions of AI in schools. This accountability should be set out in clear, publicly available guidelines for schools and their communities.

- An AI system should be deployed only after an adequate evaluation of its purpose and objectives, its benefits, its risks, and evidence of the accuracy, reliability, and validity of its decisions.
- AI implementation should be based on the principles of transparency, interpretability, and explainability so that school oversight can be enabled, and school communities can understand its processes, and decisions. These principles provide a basis for justifying, tracking, and verifying decisions, improving the algorithms being used, and exploring new facts.
- The use of AI systems in schools should not result in unfair discrimination against individuals, communities, or certain groups. DET must ensure that AI systems do not reflect unfair bias or make impermissible discriminatory decisions. For this purpose, it must ensure that the quality and relevance of AI training data is such that it is free from bias or characteristics which may cause the algorithm to behave unfairly.
- All individuals have the right to know and challenge in a timely way the basis of an AI decision that concerns them. This includes access to the factors, the logic, and techniques that produced the outcome.
- All individuals impacted by AI have the right to a final decision made by a person.
- AI systems employed in schools must comply with all relevant international, Australian Local, State/Territory and Federal government obligations, regulations, and laws, and ensure that private data is protected and kept confidential. They should also prevent data breaches that could cause harm to people.
- An institution that has established an AI system has an affirmative obligation to terminate the system if human control of the system is no longer possible.
- As all AI systems replicate and magnify human biases and subjective decisions, each AI system needs to provide a logical thought piece, or literature review, explaining the thinking and ideas that underpin its processes.

The Department has now signed on to the [federal Australian Framework for Generative AI in Schools](#) which was endorsed in October 2023 by Education Ministers, and has developed its own [policy for schools in Victoria](#) which was released in June 2024. There are features of this Framework and the Victorian Department's policy that are overwhelmingly positive and sensible, such as in data management and privacy, ongoing monitoring, deep fakes and cultural appropriation. In many respects these documents reflect some of the guidelines our Branch Council highlighted in the AEU's policy, such as the importance of the human contact in communication between school and community members.

Yet there are also some areas where the Department policy falls short. For example, schools are encouraged to "adequately prepare staff and students to understand and use tools safely and responsibly". This simple sentence lands all of the work on sourcing, vetting, and training staff, back on the school. When Generative Intelligence and Machine Learning systems are becoming ubiquitous, such as new iterations of Windows software including a 'copilot' AI assistant, where is the system-wide training that will prepare staff adequately? Why is this left to the school to manage?

The AEU's policy clearly highlights that when new software systems are implemented or permitted the Department must "assess... the likely workload impact of changes to practice". Failure to do so will increase the risks associated with new technologies and the workload associated with them, especially as new technologies will have a high workload impact, particularly when new.

While there are some potential workload reductions, such as the two I mentioned above, the experience of AEU members has been that new technology has overall always increased workload. The most obvious examples of this are the rise of email and the use of Learning Management Systems, such as Compass or Xuno or equivalent. Both email and LMS do have positive characteristics, yet I challenge anyone to find a single employee in the teaching service who says that either have reduced their workload.

Another area where the Department policy falls short is in relation to examples and

demonstrations. It used to be the case that Departments would have whole sections of staff dedicated to producing materials and resources that teachers in schools could use. Over time Departments have, shortsightedly, reduced or ended these supports. The challenge this presents is that teachers then have to produce the resources themselves, often on the fly and without guidance.

Recent budgets in Victoria has seen money allocated to getting resources produced internally again, but none of these were in relation to AI. When Departments vacate these spaces, private industry often steps in, and then teachers have the challenge of accessing material that has been produced for profit, or developing it on their own.

We have raised these concerns in relation to the involvement of big business, for which profit was the motivator rather than educational attainment of our students. This is most obviously seen in software that promises 'personalised learning' but in reality many of these present videos of learning that do not take into account the student, or their personal circumstances, and most importantly, the relationship between the teacher and the student which is central to every positive learning experience in a school.

The Department acknowledges this somewhat by emphasising the importance of using their vendor relationships to set appropriate parameters for these businesses. Yet examples of what such a system could look like in schools are not provided by the Department. The Department policy does not link to explanatory videos, or have application case studies. It does not have sample tasks that can be completed and no gives no demonstrations. In short, it still leaves it to the profession to do the research into the activities.

Where the Department policy really shines is in assessment, in that the profession did not want some form of 'robo marking'. This may seem like a dystopian yarn, to have software making assessments of for example, students' writing, yet it has in fact been proposed by numerous companies seeking public funding. The policy explicitly forbids robo marking from happening. Another area where the Department policy gets the tick of approval is the professional autonomy of teachers and the respect that should be paid

to them for their expertise. The policy calls out that the teacher should only be using AI if the software has a stated purpose, enhances the educational program, and is regularly monitored by the teacher/school to ensure the software still meets the purpose.

We know from other research, that respect for the profession in the community is a key factor in causing members to consider leaving the teaching service. Positive steps to reverse the trend of teacher-bashing commentary are welcome, and highlighting the central role of teachers in the development and implementation of pedagogy is one way to do this.

So, is AI useful in an educational setting? Well, like most real-world topics, it depends. It depends on the willingness of the Department to give the time to train staff, the supports it puts in place, the importance it places on teachers developing the pedagogy alongside the resources, and the effectiveness and reliability of the software itself. With students already accessing and using these systems, at the very least the Department should be providing training for staff on how to respond to this development. Certainly, the obligation is now on the Department to ensure the conditions are right for teachers to effectively respond to student use of AI or implement AI where there is a sound educational purpose in classrooms.

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HERE WE GO AGAIN:

AI AND STUDENT ASSESSMENT

Rod Smith



Here we go again:

AI and student assessment

Rod Smith

Those of us who were teaching in the 90s are probably feeling a bit of *déjà vu* right now, as the emergence of artificial intelligence (AI) brings back memories of how a disruptive technology can impact educators' confidence levels. I can clearly remember the anxiety within the staffroom when I started my teaching career, as the mainstream emergence of the internet gave students access to information on an unprecedented scale. Suddenly, experienced teachers were no longer the fountain of all knowledge and, short of a textbook, the only means for students to receive essential information. My colleagues were concerned this would mean the end of the profession, as society questioned the role of teachers in a new world where students could access all the information they needed, whenever and wherever they wanted.

Fortunately, these dire predictions for the future of education have proven unfounded, and educators are still here and as necessary as ever. The internet has been adopted as another tool in a teacher's arsenal, and for most educators it is now difficult to imagine doing our job without it. Yet here we are again with another technological disruptor threatening the short period of peace and stability (ha!) that our profession has enjoyed after the emergence of mobile phones and remote learning. AI has now emerged as the 'next big thing' that naysayers fear could mean the end of the profession that allows all other professions to exist, as we grapple with the dilemma of how to accurately assess students' learning if AI is able to generate the required responses to any task.

What approach have you taken to the emergence of AI? Have you embraced this new way of working and the associated productivity gains? If not, you are not alone. It seems that educators

have a history of being reluctant to embrace new technology – including one of history's most lauded academics, the great philosopher Socrates. He was convinced that the simple act of writing would be detrimental to a student's ability to learn, arguing that they would become 'a burden to their fellows' if they were to 'cease to exercise memory because they rely on that which is written'. While almost 2,500 years later this concept is laughable: at that time, memorising and reciting large portions of epic poems such as *The Iliad* formed a fundamental aspect of a student's education. Abandoning this time-honoured oral tradition in favour of the written word would have represented an enormous disruption to the established methods of teaching and learning – for which I'm sure most of us are thankful!

I was not immune to similar predictions in my own experience as a student. I wonder how many other pupils my high school maths teacher incorrectly informed that they would "not always be walking around with a calculator in your pocket" when they questioned the need to perfect the skill of long division. The emergence of the smartphone as an essential piece of equipment that most of us would never be caught without, means that Mr Christie's 1980s prediction was woefully inaccurate.

In the education community, it seems we are currently navigating that abyss between resistance and acceptance. After decades of shifting towards online learning, the mainstream use of AI has led some Australian universities to revert to the relative safety of requiring students to demonstrate their understanding of subject content through timed assessments conducted under supervision. Meanwhile, in the school sector, many institutions and even entire states initially rushed to ban the use of AI, before realising that prohibition does not work and beginning to develop policies to ensure its safe and ethical use. And to me, this is the answer. Although there are many legitimate concerns about the use of AI in education that must be addressed, kneejerk reactions such as banning its use are not the solution. While it will take time, and there will inevitably be some trial and error, creating tools to help students and educators harness AI in their teaching and learning will always be far more effective than burying our heads in the sand.

AI has already done a great job of infiltrating every element of our lives, making them easier and, in some ways, safer – from asking Siri to send a text message, to using adaptive cruise control on long drives to reduce driver fatigue, to having intelligent controllers monitor the pH and chlorine levels in swimming pools to deliver the correct dose of chemicals. As I type this article (and resist the urge to have Copilot write it for me), spelling and grammar checks are not so subtly letting me know when I have mistyped words. It seems that AI is here to stay and will only evolve further and become even more integral to people's everyday lives and careers. In the same way that the lumberjack had to embrace the chainsaw to survive, it seems that everyone, regardless of their profession, will benefit from embracing AI. However, it is important to note that embracing AI does not mean entrusting it to work unsupervised.

Just as any good assistant requires management and monitoring, AI requires a human to be involved in critical tasks and decision making, particularly when being used for decisions that can impact a student's future. In the 2022 Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators, the European Commission mandates that educators ask a series of questions when auditing the use of AI, starting with 'Is the teacher role clearly defined so as to ensure there is a teacher in the loop while the AI system is being used?' and 'How does the AI system affect the didactical role of the teacher?'. They then go on to pose further questions such as whether a teacher can still notice anomalies or possible discrimination when determining if AI's analysis of work can be trusted. So, it appears that we are still a long way from giving AI full autonomy, and maybe we never should. However, that does not mean that we cannot use it to make the job of teaching less onerous.

My colleagues who have embraced AI are using it as an assistant when designing assessment tasks, grading students' work or even developing whole units of study. For these early adopters, AI has quickly become integral to lightening their workload. Personally, I have used AI as a tool to perform some of the heavy lifting of analysing data and the seemingly never-ending stream of paperwork that flows across my desk,

which would undoubtedly be helpful for almost any profession. This leads me to question: If AI is becoming a vital resource in the workplace and the fundamental purpose of education is to prepare students for the world of work, how can we ignore AI as a tool? The current generation of students are digital natives, comfortable in a world of virtual reality and augmented reality – and the next generation will be AI natives. Are we adequately preparing these students for life after school if we do not allow them to use AI, or if we are inadequately training them in how to use it?

At this point I am reminded of when educators were first struggling with the dilemma of how to teach students to use the internet correctly. I am reminded of the Vacanti mouse and the perils of finding the primary source that Alan November so eloquently warned us about in his presentations on teaching critical thinking and web literacy. In the same way that educators had to teach students the correct way to use the internet to research, we need to teach students how to use AI so that it does not become a hazard to their learning. How would you feel letting an experienced lumberjack loose with a chainsaw if they had not been adequately trained in its use?

In a recent article for Independent Schools Victoria, Associate Professor Leon Furze put the spotlight on the AI Assessment Scale (AIAS) that he developed with Dr Mike Perkins, Dr Jasper Roe and Associate Professor Jason MacVaugh to offer a structured approach to incorporating AI into assessment practices. He believes this scale 'offers a framework for educators to thoughtfully integrate AI into their assessment strategies, moving beyond the binary of 'use AI' or 'don't use AI.' The five levels of the AIAS range from 'No AI use at all' through to 'Full AI generation'. The beauty of the scale, according to Furze, is that it can allow educators to 'design assessments that gradually introduce AI, allowing students to develop critical AI literacy skills while maintaining academic integrity'. As an educator, where do you sit on this continuum? How comfortable are you allowing students to submit work that has been either partially or fully generated by a bot?

If we set aside the question of assessment for a moment, what about learning? I wonder how comfortable you would feel using AI to help your students learn about a particular

topic – for example, by asking it to wade through the seemingly limitless information available online and summarise its findings into an easily digestible summary. I am sure that most of us would not have a problem with that. AI has tremendous capacity to free teachers' valuable time if they use it to generate resources for students, whether that be creating examples, generating writing prompts, or producing class materials that differentiate the curriculum. So why, if we are at ease using AI to assist students with their learning, does it feel like such a leap to allow students to use it to assist them during assessments?

Like all recently adopted technologies, one of the key concerns is the minefield of inequity AI may open. What happens when a student uses an open-source version of AI that generates unreliable information? How does that disadvantage a student who does not have access to a paid or high-quality version of the technology? These issues will not be easy to resolve without government intervention, which would most likely take the form of a financial investment similar to the rollout of laptops in government schools.

However, while there are still many unresolved questions about the use of AI in the classroom, I believe the ultimate answer is that the education system must evolve so that it can survive. As Charles Darwin said: 'It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change.' I would like to think that it is the ability to use tools that separates humankind from the rest of the animal kingdom, regardless of what that tool looks like. Humankind has been evolving and developing new tools throughout our history, and AI is just another device in our ever-expanding arsenal.

As Arthur C Clarke's third law states, 'Any sufficiently advanced technology is indistinguishable from magic', and right now, AI appears to have magical capabilities. However, it is important to remember that artificial intelligence is just that: artificial. Just like a magic trick, it is not 'real' intelligence but rather an illusion of intelligence. And as long as that is the case, there will always be a role for us human educators to guide the next generation through the minefield of misinformation and find the truth.

Rod Smith has been an educator in both the tertiary and secondary education sector for over 25 years and brings a wealth of experience in Technology Education. He has worked with the VCAA as a State Reviewer and an Examiner and has recently worked with the Victorian State Government in a Community of Practice to help develop the Australian Framework for Generative Artificial Intelligence in Schools. In his current role as the Head of Academic and Data Services at Girton Grammar School in Bendigo, he is responsible for ensuring that testing data is used effectively in the classroom to differentiate curriculum.

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IS AI A LEARNING MACHINE?

A STUDY OF AI IN EDUCATION



Suzana Sukovic

Is AI a learning machine?

A study of AI in education

Suzana Sukovic

In the two years since its public emergence, generative artificial intelligence (AI) has been viewed as a revolutionary technology with far-reaching consequences, arguably comparable to the Internet. It poses numerous questions across society but, in schools, it particularly raises uncertainties about its impact on young, developing minds. At Presbyterian Ladies' College Sydney, an independent PreK-12 school for girls, we initiated a year-long investigation into the issues of AI in education aiming to inform our strategic and practical approaches now and into the future. This article shares preliminary findings from the study, contributing to the broader discussion of AI's implications for schools.

The findings presented here are based on 12 interviews with 13 education leaders, including representatives from the NSW Department of Education (DET), independent schools across Australia, Microsoft, and academia. While a broader range of data has been collated for the project, the focus of this article is on the experiences and thinking of people at the forefront of the change within their organisations.

Approaches to adoption of AI

Participants discussed a range of approaches to AI adoption in schools. AI Committees, often comprising teaching and non-teaching staff, are increasingly common, and most schools have AI assessment guidelines. The key approaches are the following:

1. AI on trial:

DET trials NSW EduChat, designed for personalised tutor-style conversations, while blocking AI sites for students. The trial is currently in 50 schools.

2. Planned or early stages of adoption:

AI has not been a strategic priority for some schools, but they are considering staff professional development this year.

3. Middle-of-the-road approaches:

Schools gradually integrate AI, aiming to balance opportunities and risks. For example, a Sydney girls' school uses AI to assist teachers in a range of tasks, and to enhance data analysis, while another focuses on developing teachers' capacity through a team of AI integrators.

4. Early unstructured approach:

An independent school for boys in Sydney gave teachers a mandate to explore AI for reporting, assessment, marking, resource preparation and student learning from early 2023, leading now to a more structured approach, and a possible investment in AI next year.

5. Early structured approach:

Two co-educational independent schools, in Melbourne and Brisbane, implemented a whole-school AI adoption from the beginning of 2023, complete with policies, plans, and dedicated AI leaders. One of these schools has worked with free AI tools for students while another chose secure tools with enterprise licensing. AI is used across corporate functions including marketing in different languages, enrolments, and personalised student and staff induction.

AI for student learning

Assigned by their teacher or not, students are using AI, some starting as early as Kindergarten. Some education leaders commented on students' natural inclination towards AI while others noted initial reluctance or ongoing distrust of AI. Students' frequent use of AI for homework is viewed as a significant support in situations where parents or traditional resources may fall short, but also a cause for concern.

Writing is an area of major use where AI helps students generate ideas and edit their work. A history teacher from a Sydney boys' school commented on how students used AI for a research task. While stronger students used AI to explore different writing structures and strengthen their argument, others did not achieve meaningful improvements. "We're trying to get them to

mark AI's work and re-engage them with criteria to try improve the quality of the response. I think, combination of AI and that work will lift all ability. But they (i.e. academically weaker students) wouldn't have done that themselves."

The use of AI for writing beyond idea generation and editing is controversial, especially since AI tends to bring varieties in writing towards the middle. An English teacher from a girls' school in Sydney doubted the view of writing as a product rather than "the process of moving through something tricky to think about and then coming up with prose. It (i.e. AI) is too wedded to information. It's predicated on the assumption that writing is syntax and the assembly of information that already exists. So I don't think it is actually generative in that way, truly generative."

In the classroom, AI "can create a bit of a buzz" as one of the participants put it, provide individual assistance, and extend student learning. One example was using AI in Design and Technology to experiment with 3D models of furniture and different materials, enhancing students' creativity. It has also been valuable in generating images to support learning with younger students. AI proved to be a game changer for teachers of computer programming.

Participants who developed their subject-specific GPTs commented on the exceptional value of these tools:

I've built a custom GPT, which has all of the past papers for my subject, the marking guides, and the markers' comments. And when a student finishes doing a practice paper, they can scan it in and then get itemised feedback based on the marking guidelines. Now, that would take me hours and hours and hours to do. They get it instantaneously. And I think that immediate feedback to something is really important and really beneficial. (Independent School for Boys, Sydney)

Assessment

AI's impact on assessment has been a concern in schools. For some educators, this technology has just added another layer to the existing tools for deception, while others hope it is a catalyst for much-needed assessment reform. Initial responses

involved shifting towards in-class assessments and handwritten tasks, but schools are now exploring broader assessment practices to ensure the authenticity of student work.

AI is promising for enhancing research, and some teachers wish to utilise it with added instruction, guidelines, scaffolding, and monitoring the progress to ensure that AI is being used ethically and productively. An expert from Microsoft mentioned an example of a teacher who "got some essays off their students and then put them back into Copilot and ask Copilot to create 10 questions based on the content written in the essay, and then gave that back to the student as a second part B of their assessment. So, if they hadn't written part A, they couldn't answer the question."

A misalignment between the possibilities of using AI and assessment in senior years is a concern for some educators. In AI-intensive schools, it means a disconnect between the integration of AI and the return to more traditional practices in Year 11 and 12. Some are concerned about fairness in research-based Extension courses and the International Baccalaureate.

Practical assignments may be easier or much more difficult to assess depending on the subject. In the two years since generative AI started, its ability to work with images, video, and sound has been significantly improved, making it a cause for concern for teachers who assess creative tasks.

Wellbeing and ethical considerations

Students are reportedly using AI in their daily lives, from supporting and developing their interests such as coding and creating images for applications and games, to using AI to make financial decisions for themselves and their families or enhancing their gambling chances. This blurs the line between home and school life.

The development of social skills is a promising and challenging area. AI can support social skills development and ease loneliness, but overreliance on technology can be addictive and hinder human interaction. Some education leaders emphasise the need to monitor students individually at

home and school. The potential impact on students' confidence and sense of self is also a concern as students may believe in 'smart' AI underestimating their intelligence. Discussions about how AI functions and its limitations are central to addressing these issues. The ethical implications of AI, including the potential for creating fakes and acting impulsively are a regular concern for educators.

Schools are addressing these challenges by incorporating ethical considerations into AI education. A co-educational school in Melbourne is taking it a step further by embedding digital wellbeing as a core pillar in its student care framework:

Through digital wellbeing, we have programs that really support and educate students in the use of AI, but through the lens of wellbeing and emotional health. So this is a relatively new space, I think, for us as a school and probably new for education – seeing AI through the lens of wellbeing.

Preparing students

Schools recognise the importance of teaching students how to use AI effectively. An academic in this study emphasised teaching students about AI as a learning machine, not an answer machine. Students should learn how to achieve the results they want, understand AI hallucinations and bias, and appreciate ethical implications. Early adopters in this study have been developing skill maps and tracking students' learning journeys with a view to incorporating AI skills into their broader education.

Critical thinking is a key capability needed to interact with AI effectively. Critical thinking, however, is grounded in content knowledge. Teachers want students to have a broad understanding of the world and different types of arguments to develop their own thinking, and avoid bipartisan views harmful to themselves and society. AI has highlighted the need for student character and citizenship development. It has also brought to the fore our irreplaceable humanity with intuition, empathy, ability to evaluate complex situations, and deep communication skills as human attributes worth fostering. Preparing

students for adulthood in an AI-enhanced world involves cultivating unique human qualities alongside technical skills.

AI for teachers

In all schools discussed in the study, teachers' responses to AI vary widely. None of the schools has mandated a particular approach, and teachers' responses range from excitement about the potential to save time and improve teaching practice to hesitancy, and fatigue caused by dealing with yet another technological change after the COVID years. An academic in the study noted that 'whether or not the technology gets used depends on teachers and shifting that whole distribution, not just those at the top that see the potential and take advantage of it'.

AI has been used primarily as an efficiency tool for writing, lesson planning, marking, creating rubrics and a number of administrative tasks. Some teachers find AI-generated suggestions helpful for improving lesson plans and materials, while others believe it should be only done by a teacher.

Subject and school-specific GPTs offer instantaneous feedback on student work, saving teachers' time and supporting learners. Some teachers use AI to analyse student work based on marking criteria, identify learning gaps and develop suggestions for further learning and assessment. Help with differentiation, in particular, is seen as a major benefit.

Data analysis is another promising area, allowing teachers to gain insights without advanced numerical skills. By connecting information about student attendance, co-curricular choices, and assessment results with teachers' notes, AI can help teachers gain insights into individual student changes and possible welfare issues.

Professional development

Developing teachers' AI capacity is key for successful AI implementation. Schools are using various strategies, including developing the capacity of AI champions, creating AI expert roles, organising conference attendance and special talks at school, and organising collections

of resources with short videos and prompt libraries. A co-educational school in Melbourne has a structured whole-school approach to developing AI capacity, including an informal Community of Practice open to all staff, and forums that engage staff, students, and parents as a learning community. Still, the AI leader in this school commented, “I don’t know if any school or any industry is really on the front foot of this.” We are all on a learning journey.

Future direction

Looking ahead, adaptive and personalised learning is seen as particularly promising area of AI for education. Some participants envision children growing up with AI as a personal assistant that remembers their learning path, reinforces previous lessons, and supports highly individualised learning. While this vision carries potential risks and dystopian possibilities, it also promises enhanced and more inclusive education.

Human relationships, however, remain at the core of teaching and learning, so teachers are irreplaceable. Whether learning and contact with teachers will happen in schools as we know them is uncertain, but the school as a place where people gather to learn is unlikely to disappear. Delegating some aspects of teachers’ work to AI could create more time for engagement with students, allowing teachers to focus on the parts of their job they value most. As a Microsoft expert pointed out, technology may also assist people who live with disabilities to become teachers. More time for meaningful engagement with students and broadening the pool of teaching candidates are likely to help with teacher shortages.

Making an optimistic vision of the future with AI a reality requires educators to engage with technology experts and policymakers. The existing technology is both promising and challenging. Which aspect will prevail in education depends to a large extent on educators’ influence on how this rapidly developing technology is adopted in education.

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Acknowledgement and participation invitation

The team working closely on this project is the College Principal, Dr Paul Burgis, Director of Learning and Teaching, Dr Sarah Golsby-Smith and Dr Suzana Sukovic in the role of Principal Investigator. Data gathering for the project is being finalised, but we would still like to extend an invitation to primary schools that use AI, and secondary schools that decided against its use to participate in the study. All participants will receive a copy of the final report.



THIS IS JUST A WARM-UP ACT: THE BIGGEST TRANSFORMATION TO EDUCATION IS ABOUT TO TAKE CENTRE STAGE

Michael O'Keeffe



This is just a warm-up act:

The biggest transformation to education is about to take centre stage

Michael O’Keefe

AI and its influence on education are not just another passing craze. It won’t disappear like fidget spinners or that mullet phase the teenage boys were obsessed with a couple of years ago. If you think AI is just another addition to your teaching toolkit, alongside a YouTube clip, a great PowerPoint, or a Kahoot, you’d be doing yourself a disservice. Generative AI is the most significant disruptor since Wikipedia, and before that, the Internet. It feels like it’s snuck up on us, and now we’re in catch-up mode.

Let’s start with homework

This might seem like an odd place to begin, but when AI first became free and mainstream with the launch of OpenAI’s ChatGPT, homework was the first thing that came to mind. For years, I’ve questioned the purpose of assigning at-home tasks for our students, often challenged by some learning area leaders who argue that certain subjects cannot fit their entire curriculum into the school day, making it a necessity. Flipped learning was our last attempt to circumvent what we knew all along: if students are working independently, we cannot always authenticate their work. Yet, many teachers have continued to rely on having students complete assignments at home, sometimes even for assessment purposes.

AI is the official killer of traditional homework (Bubeck et al., 2023). The concept is simple: the moment a student is unsupervised on their digital device, they are likely using AI to assist with their tasks. Increasingly, the software products our students use are gaining built-in AI capabilities, often without students always aware when and

where it is applied. We need to explicitly teach our students the power of AI so they can use it as a tutor or co-pilot. No more asking mum and dad for help with maths problems, especially as the rules for long division keep changing. There are so many amazing AI tools that can guide students through any content areas where they need support.

Finally, a real conversation about assessment

If I were writing a thank-you card to AI, my main message would be gratitude for giving us a reason to start talking about assessment again. I felt like I was going crazy for a while. Why were we so obsessed with summative assessment? Why did we think that three assessment tasks, per subject, per semester, was the magic number for best practice? Why did we continue to set assignments for students, give them two weeks of class time to complete them, remind them to work on it every night at home, place huge amounts of pressure on them to get it done, build it up as the most important thing they would ever do in the class, and then pull our hair out when they didn’t meet the learning outcomes for the task?

AI is giving us the opportunity to reflect on the big question: What is the purpose of assessment? Do we want our students to simply regurgitate content, or do we want them to become sharp, analytical thinkers in a world increasingly bombarded by fake news and deepfake AI? My hope is that we reimagine assessment as a tool for continual growth, giving students the skills and capabilities they will actually use beyond compulsory education. With AI’s help, many of the routine tasks that once dominated classrooms can be pushed aside, allowing students to engage with more meaningful challenges that sharpen their minds and prepare them to be adaptable, innovative learners.

Cue the creativity

I remember being a Year 12 media student using the Casablanca machine. At the time, this was cutting-edge technology, two VCRs side by side with a small selection of transitions. The quality of my final product was never going to be anywhere

near what I could see on television. Fast forward nearly 30 years, and with an inexpensive laptop, I can now create documentaries, music clips, or short films that rival what you can watch on Netflix. What video editing has done for media students, AI can now do for so many other subject areas.

For example, in History, students could generate simulations of how World War II might have unfolded differently if key decisions had been changed. In Languages, students can use AI to provide them with feedback on their vocabulary, grammar, and style, giving them room to express more complex ideas and explore creativity in language beyond basic conversation. And in Science, students could use AI to simulate different environmental variables and models to explore climate change.

While we don't want AI to completely replace creative thought processes, its true power lies in freeing up time for students to dive deeper into the subjects they are passionate about. AI isn't here to take over human creativity; it's here to amplify it. By handling routine tasks, AI allows students to focus on becoming more engaged, thoughtful, and imaginative learners, giving them the tools and time they need to fully explore their ideas.

AI is cool, but it'll never be your favourite teacher

For years, computers have tried to replicate the human connection in education by rewarding students with badges, points, and other stimuli designed to keep them engaged. Platforms like Mathletics and Education Perfect use gamification techniques to motivate students to keep going. While these strategies can be effective in maintaining momentum, they can never truly replace the coaching, encouragement, and empathy that come from a real-life teacher (Balci, Secaur, & Morris, 2022). AI might automate rewards and feedback, but it lacks the human touch that makes education meaningful, the connection, support, and inspiration that only a teacher can provide.

Teachers provide emotional support, and they understand the nuances of their students. They can read body language, pick up on subtle cues, and adjust their approach based on the individual needs of each student. Teachers bring subject matter to life, sharing their own experiences, encouraging discussion, and pushing students to think beyond the superficial.

They provide experiences like camps, school musicals, and formals. Teachers are the coaches of sporting teams and celebrate students' birthdays during morning homeroom. They dress up for book week and perform cringeworthy staff items at the house arts festival. These are the moments that students remember from school. I can guarantee that at a high school reunion in 20 years' time, no student will cite a lesson they had using AI as their favourite memory. Instead, it will be those moments: the camp, the school musical, the formal, with their teachers, that will be the memories that they cherish for years to come.

Beware: AI's been reading the same book over and over

I'm confident that all readers of this article by now are aware that large language models obtain the majority of their data from the Internet. With this comes certain biases that can be reflected in the AI's decisions. When students rely on AI to help with their learning, they're often receiving information that reflects the same biases over and over again. This can limit their perspective and reinforce stereotypes rather than challenging them to think critically.

Students may then absorb these biases, affecting their understanding of complex social issues and reinforcing misconceptions. AI is only as diverse as the data it's fed, so if that data is skewed, students may miss out on diverse perspectives. That's why it's critical for teachers to step in, helping students identify and question these biases, so they can engage with the material more thoughtfully and with a broader mindset.

The next challenge: Academic integrity

While schools and institutions across Australia may feel that they've 'AI-proofed' themselves through the use of handwritten assessments and exams, the reality is that much of the work students complete is now done via computer. As I mentioned earlier, if a student is using their computer unsupervised, they are most likely interacting with some form of AI. While we can adapt our assessments, we also need to approach this from a moral perspective. Some university lecturers have even given up on using AI detection software, as it's becoming increasingly difficult to catch students out. Instead, they are focusing on making their students understand the ethical implications of submitting AI-generated work.

What's interesting to observe is that tools like spellcheck, thesauruses, and even asking a colleague to proofread have become standard practice in student work, and no one bats an eye at their use. Yet now, with the rise of AI, we've become hyper-aware of what is human-created versus computer-generated. After using AI intensively over the last year, I'm starting to intuitively pick up when someone has used AI to craft an email or letter. Will using AI to write become the norm?

AI will extend its run on Broadway

For those who have been observing the tech world since the 1980s, the gap between innovations has been steadily shrinking. The emergence of open-source AI marks the fastest technological evolution we've ever seen. By the time you finish reading this, thousands of new AI products will have already hit the market. I suspect that in 10 years' time, this article will feel outdated.

What we've seen so far is only the opening act, and we need to move quickly to prepare our students for Act Two. Prompt writing will need to become a core part of the curriculum, as teaching students which AI to use in different situations

will be a crucial skill. Equally important is helping them identify when AI is showing bias. But beyond all of this, we must ensure that the time saved using this technology is spent wisely, allowing our students and teachers to become better, more well-rounded humans.

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DOES AI UNDERMINE OR SUPPORT CREATIVITY?

Travis McKenzie



Does AI undermine or support creativity?

Travis McKenzie

Socrates hated writing. He said thinking only happened inside heads, and that if his students read ideas instead of memorising them, it would be cheating. Of course, we only know this because his best student, Plato, wrote down everything Socrates said, which just proves that even the best teachers get it wrong sometimes. Similarly, I was wrong about generative artificial intelligence (AI).

When ChatGPT burst onto the scene last year, I assumed that my students would embrace it, the way I had my first calculator. But a year on, I find it hard to get them using any of the applications now available to them for art and media creation. Even when I show them the most ethical open-source tools to use, they continue to resist.

This article will be my attempt to work out why. Sorry Socrates, I think better when I write, and I think the problem comes down to cheating.

Every student knows how bad it is to be labelled a cheat. Cowboys get killed for hiding cards up their sleeves, athletes are disqualified for taking steroids, and students can fail a Year 9 maths test if they're caught using a calculator under their desk. But what about artists? Aren't they meant to be independent creators? Isn't any assistance from technology considered cheating?

Artists have always cheated

Whether it's the grid transfer tracing techniques of antiquity, or Renaissance workshops full of apprentices helping their masters paint and sculpt,

artists have always used tricks to fool us. Take the Camera Lucida, a prism-based drawing aid that gave artists a superimposed image of their subject on a surface, making it easy to render reality. Of course, you don't have to look further than David Hockney's claim that artists such as Ingres, Van Eyck, and Caravaggio used the device in their masterpieces (Hockney, D. 2009) to see how controversial this idea still is. When it comes to creativity, we want to believe in magic.

What about photography? In her 1857 essay, *Photography*, art historian Lady Elizabeth Eastlake claimed that while photos 'give evidence of facts, as minutely and as impartially as, to our shame, only an unreasoning machine can,' they should never be considered 'that mystery called Art.' (Zarevich, E. 2022). My students agree that such ideas seem naive now. After all, there is no question that the work of Ansel Adams, Cindy Sherman and Annie Leibovitz is art. What then makes taking a well-composed photo a work of art, but using a prism to render a painting cheating? Perhaps it has something to do with honesty.

It's not cheating if you admit it

When Auto-Tune software was introduced in the 90s, any singer could easily achieve perfect pitch in post-production. At first, some artists denied using it – only to be caught out during a live performance. We expect stage magicians to fool us, but creative art is meant to be sacred. Yet, over a decade on and the characteristic electronic warble of Auto-Tune is now openly used by global acts such as Daft Punk and Bon Iver, who accept it as just another sonic tool to utilise at will.

No artist works alone

Students love studying Andy Warhol's work as much as we love teaching it, but we often miss the point. Despite Warhol himself trying to make the meaning of his work explicit, we continue to analyse it the way we do Renaissance masterpieces. We should focus on how it was made instead. Warhol didn't just celebrate the aesthetics of mass production in his work, he wanted to be a machine, using the

force-amplifying power of factory workers to make them.

Operating throughout the 60s and 70s, Warhol's Factory was a New York loft where a diverse range of artists, musicians, actors and writers hung out and partied. But they also helped produce Warhol's most iconic pieces such as his Campbell's Soup Cans and his Marilyn series. Throughout this process, Warhol was as much a production manager as an artist: directing and organising, and of course signing the work that they all made together. Warhol's Factory was closer to a Hollywood studio than an art workshop, and it directly influenced the practice of contemporary artists such as Jeff Koons, Damien Hirst, Takashi Murakami and Patricia Picinini, whose monumental pieces would be impossible without the teams of people who helped to make them.

"That's different," my students say. "Those artists are all paid for their work. Isn't AI stealing?"

All artists steal

As Banksy famously said, "Bad artists imitate, the great artists steal." (Banksy, 2021). Actually, it was Picasso who said this, Banksy just made his point clearer by stealing that too. What they both mean, of course, is that there is no such thing as originality in art: everything is taken from somewhere else. Anyone training to become an artist must first ingest many years of inspiration, absorbing countless words, sounds and images to develop their taste and artistic inclination. Whatever they make comes directly from what they consume. In a way, it's not that different from how we train AI.

Each new AI system must first be fed massive archives of art, media, music and literature before it can become a functional mashup machine, autocorrecting its way to statistically probable responses to the prompts that we give it. The problem is, these archives are rarely paid for, and even less frequently acknowledged.

I make sure to point my students to those AI companies that claim to function ethically. Sure, they might not be as fun to use as a camera, or as cool to hang out in as Warhol's factory, but

platforms like Adobe Firefly or Google Gemini are full of eager agents ready to visualise their concepts or render their compositions; generate songs for their soundtracks or special effects for their footage.

This should be the dawn of a new democratic age of creativity, with the means of production available to anyone with internet access. So why do my students still resist using them? It's almost like using AI takes the fun out of creativity. In a recent interview, singer Nick Cave warned that generative AI is "expressly designed to take the creative act away from us." (Cave, N. 2024, August 14). Last year I would have dismissed such sentiments as neo-luddism, but now I'm not so sure. For any artwork to move us, we must believe it contains the essence of the effort it took to make it. We can see this in the brush marks on a canvas, or the off-key notes in a chorus, the emotion in a performance or the unique order of words on a page. These imperfections cannot be faked – they come from the struggle that artists go through to create. But to be brave enough to venture out on such a daunting quest, an artist must first develop a requisite level of self belief.

You can fly!

In the film *Dumbo*, the titular baby elephant believes a magic feather is responsible for his power of flight. We call this 'scaffolding' in education theory, and the point is to slowly bring students to the realisation that they don't need such crutches to function independently. We call this the 'gradual release of responsibility', and while it doesn't make for exciting climaxes in movies, it is how students develop a sense of self belief.

No single human technology has ever had as much apparent creative power as generative AI. From the way it can render reality as well as any camera can, to the very nature of how it is trained to generate its creations, AI is too close to us for comfort. Science fiction writer Arthur C. Clarke famously said that "any sufficiently advanced technology is indistinguishable from magic." (Clarke, Arthur C. 1973). I always thought this was just a clever epigram, but now I see it as the warning Clarke probably always intended it to be: when humans start relying on magic, they stop

believing in themselves. We have to show our students that AI applications aren't magic, just very clever computer programs.

Picasso had a last piece of relevant advice for us on this point too. "Computers are useless," he said in a 1964 interview. "They can only give you answers." (Fifield, W. 1964).

Answers are important in so many aspects of our lives – Year 9 maths tests, for example. But even in maths, the important point is asking the right questions. That's what calculators did to numeracy education, changing the way problems were taught and assessed, to focus on the process as much as the result.

I hope that is what generative AI will do for the arts: bringing more students to the realisation that they have questions worth asking and available tools to answer them. As Nick Cave put it, this is the "striving that becomes the very essence of meaning," (Cave, N. 2023, November 22) and it is the one that cannot be cheated.

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PROFESSIONAL DEVELOPMENT FOR USING AI IN THE CLASSROOM

Daniel Cohen



Professional development for using AI in the classroom

Daniel Cohen

'As we move forward, it's essential for the education sector to have a stronger, more influential voice in shaping the trajectory of AI development and implementation. We must strive to ensure that AI's transformative power is harnessed positively, promoting inclusivity, creativity, and human flourishing.'

- Rose Luckin, University College London

With this sentiment in mind, professional development (PD) is essential to ensuring teachers have the knowledge and skills needed to utilise artificial intelligence (AI) effectively. It needs to be targeted to address skills that enable teachers to provide the kind of learning necessary to produce better student outcomes and future-ready skills. PD of course needs to work towards school goals, but also must ensure that teachers are developing their own skills and understanding – for themselves and for the betterment of the work that they do. Logically the question then is “What skills and knowledge will be needed to address teacher and student skills in the future?”

What is AI?

First, we need to know what AI is. I will not go into the detail of machine learning and a philosophical exploration of consciousness and intelligence. Rather I will focus on what an average teacher is likely to refer to in their everyday lives when AI is discussed. AI is not one thing. It is a set of algorithms that produce something. It can be the AI in Canva that populates text, the AI in Adobe Creative Cloud that creates images, or the AI in toys that respond to our instructions or, of course, it could be any number of chatbots like ChatGPT, that generate answers to the questions we submit.

We can use a potato peeler to whisk eggs, but it might not garner the same results as an egg beater; understanding the tools means we use them effectively. To understand the AI that we are using, we need to know what it is designed to do so that we can choose to use it appropriately. Developing the critical thinking skills to judge what the AI is doing is important, and requires some basic knowledge of how to use the AI tool.

Digital literacy

As with all technology, there is a difference between understanding the tool and the application of the tool. With the introduction of calculators there were a number of discussions about how they should be used. As teachers became more familiar with how they operate, integrations with the curriculum were developed so that they became a tool to aid learning. We are at the beginning of that same process with AI. Teachers need sufficient digital literacy to be able to make informed judgements and decisions about how the tool can be used to focus on learning outcomes. This means that many teachers will need to engage in PD around basic computer operations.

AI is built on algorithms. They are usually kept secret, and each different AI tool has a different algorithm and dataset behind it. Understanding basic computer logic and algorithms will start building necessary digital literacy skills. But this doesn't mean teachers should start short courses in computer science or programming. Microsoft Excel, Google Sheets, or any spreadsheet software has the ability to include formulas. Playing around with simple formulas and the logic of them is a great starting point.

Consider the Conditional Formatting feature in Microsoft Excel: Start with a student list of test results. Scores higher than 80% will be coloured green, below 50% will be red, and between 50% and 80% will be yellow. While this will be coloured manually, it can be automated by an algorithm. A common programming function is the IF/ELSE statement. The computer processes the algorithm by essentially asking IF this happens THEN do that. If (result) > 80% then colour = green. If (result) < 50% then colour = red. Else colour = yellow. Teachers do not need to be

programmers, but understanding the logic of how the computer decides what colour the result should be, allows us to apply the same logic to how we expect AI to produce results in other areas.

If I search for online images using the keyword 'fox' I may get pictures of a fox or photos of Jess and Noemie Fox winning gold at the Paris Olympics. AI will take a prompt we input, then process a series of algorithms and produce an output. To be digitally literate we should be able to judge the data source being used to produce results, how the data was included or uploaded, whether the information is likely to be reliable and if the algorithm is following logic that has any kind of bias.

AI needs to develop examples of correct and incorrect responses. This basically means that we upload the data that we want to be analysed and then start providing the conditions for whether something is correct or not. Over time it develops more examples and increases accuracy and draws on multiple people's input to provide those responses. ChatGPT uses the information from all users to determine the response that is most likely required to a particular question or prompt. To be confident in the results produced when using an AI tool, our own digital literacy will rely on our knowledge of what data the AI is using to produce answers, and we will use our own judgement to decide if the information produced is trustworthy.

AI in the classroom

I approach PD with the rule of thumb that if it takes longer to set up the technology than it takes to complete the task manually, then technology isn't the right solution. While I don't believe AI will be able to replace good teaching practice, there are many elements of the teaching and learning process that can be improved with the use of technology. There has been much discussion about the repetitive and mundane tasks that can be passed off to AI such as test marking, scheduling, and generating lesson plans. As long as we can be confident the content is produced with a good dataset or appropriate training then this has a use for both teaching and learning. However, if the discussion is around students cheating because the AI produced the work for

them then the underlying presumption of what we are teaching, what students are learning and what is being assessed needs further analysis. The application of AI tools is ultimately where our attention will be drawn.

Algebra continues to be taught despite generations of students claiming they will never use this information. Algebra's greatest use is in the problem-solving skills, higher order thinking skills and critical thinking skills generated. That is why the introduction of calculators didn't render learning mathematics obsolete. These are the important discussions to have. We make decisions on what and how to teach based on the broader learning goals.

AI is a tool that isn't going away. Students and teachers will use it in some capacity. "How?" and "Why?" are the questions. Teachers looking for PD will benefit from exploring how the broader outcomes are achieved. Let's look at how assessment can be effective by incorporating AI. Let's shift the assessment to focusing on the thinking skills instead of just the output of endless artifacts that need to be graded. Let's look at how a student applied the AI tools and the critical thinking they used to prompt the AI to generate an essay. Let's look at the decision making, and the collaboration students demonstrated.

Around 2010 my class was selected to have Professor Yong Zhao of the University of Kansas visit. I was wondering what sort of lesson or what piece of technology he was going to revolutionise my classroom with. Instead, he asked a simple question to my class: "Can you make me something that I can take back to America, to show everyone what makes yours the best school?"

Some students started recording videos, some created PowerPoint presentations, some grabbed pencil and paper and started drawing plans. One student started practising her spelling words because that was most important to her. Professor Zhao highlighted the literacy skills that were on display. The discussions of grammar in writing, the narrative and storytelling in video production, the questioning techniques used in interviewing the professor, the speaking and listening skills, collaboration and research skills were all being used regardless of the form of technology.

The greatest PD I had in that moment was not which program I should use on the computer but what question I should pose to the students to guide their learning.

To incorporate AI in the classroom effectively, PD will look at how our questioning can guide student learning, how the learning tasks encourage students to engage and think and create. If we prepare lessons that allow students to use AI to demonstrate their learning, the skills they employ will reveal these skills.

What is PD?

Until companies agree to share proprietary knowledge we will have different AI tools in different systems for different purposes. Learning to use each of these tools will be important. The best PD to do is follow the tutorials they offer themselves. Search online for videos of other people using the tools. Spend time experimenting with the tools and get creative. This can be done independently in our own time or as shared experiences with students. The tools will take an amount of time and practice.

The application of tools, however, is something already familiar. Teachers are experts in delivering curriculum and engaging students. Critical thinking strategies, problem solving strategies and collaboration are important skills now and will be in the future. Engaging in PD that focuses on these areas will allow teachers to apply that knowledge when choosing how to incorporate AI tools throughout the curriculum.

The term 'prompt engineering' at its core refers to asking effective questions. Questioning techniques are used by teachers to engage students. These same techniques will allow both students and teachers to use AI tools effectively. Of course, assessment will remain an area of concern while new methods of demonstrating learning are explored. PD in effective assessment techniques will ensure that we are assessing the skills that matter and not the regurgitation of knowledge that can be outsourced to AI easily.

Looking to the future

Depending on your view of AI in everyday use, these are exciting times or the end of days. Either way it is certain that our students will be growing up in a world where interacting with AI will be unavoidable. To guarantee that our students experience the best chance of success we can ensure they develop the skills they will need to interact with the world and understand how to figure out the unknown.

AI is a system: a system built on rules. If we know how to figure out the rules, we can effectively judge what the system will produce and not only anticipate the results but manipulate them and use them to our advantage. Whether the AI is making judgements about weather patterns, producing images and essays or just deciding which cat video to put on the screen of a device, students should be equipped with the knowledge to figure out how the AI is operating. This means the work that we are largely already doing will continue to be relevant and necessary.

Critical thinking skills and the ability to question whether information is factual and reliable will continue to be essential. The ability to follow instructions and formulate procedures will be important to evaluate whether AI systems are working correctly. Importantly, ensuring that creativity and artistic endeavours are continued and encouraged will mean students will retain the ability to exist in the world without needing to commodify every moment and AI will serve as a tool to enrich our lives rather than turn ourselves into products AI uses to generate income for faceless companies.

I had the benefit of attending workshops delivered by Rose Luckin and Leon Furze at the EduTech Conference 2024. I recommend following their work.

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AI IN SCHOOLS: A LEADERSHIP PERSPECTIVE

Allison Stott



AI in schools:

A leadership perspective

Allison Stott

Whilst always having an active eye on emerging technologies and how to capitalise on them for staff and student use, forming a school-wide policy on artificial intelligence (AI) was not on my bingo card for 2025. Perhaps it should have been. The difference between AI, and say, the latest 3D printer or collaborative file sharing software, is the ethics behind it. Where does the information come from? What biases does it contain? When does it shift from my intellectual property to someone else's? Coupled with the practical elements: What software do we focus upon? Should we teach coding when AI will do it? At what year level and subject would this be most appropriate?

AI goes much broader than the curriculum. Thinking about AI is not as simple as working out meaningful places to insert it into the curriculum or setting aside a planning day where staff can learn how to use it and teach with it. This is different. Far from being a panacea, it is both a blessing and a curse. When the various levels of government 'learnt' that teachers are overworked and need more time to meet the increasing demands of 21st century education, the recommending bodies suggested that 'packs' were created that teachers could just deliver.

When AI tools were developed that could assist teachers, it was championed as another way to decrease tasks and the cognitive load of a strained workforce. Neither of these suggestions meet the needs of teachers to deliver quality teaching and learning, ensuring that students are ready for the complexities of life beyond their formal schooling, engaging them with their schools and meeting their emotional needs.

Let's face it, AI is not new. It has long been the technology behind a lot of what we have been using without questioning it – namely search platforms, chatbots who we think may be real

people, and media that curates advertising and information feeds directly to us. What is new is the generative potential of us as users, and the rapid pace that it has come barrelling into our lives. This has pulled into sharper focus the need to question what we are reading, the biased perspectives of the information we are digesting and the implications for ourselves and the young people who we educate. It does, however, connect with the pressing need to increase the involvement, agency and advocacy of women in tech industries and clearly this has implications for girls' education.

A staff perspective

It is not possible to capture a single staff viewpoint on AI use in schools. There are some staff who have absolutely grabbed it with two hands to supplement their teaching practice: summarising key notes, changing the language level to meet the needs of particular learners, converting a narrative into a script (or the reverse), setting learning intentions and success criteria directly from the Study Designs or Curriculum Documentation, generating comprehension questions or revision activities, designing basic lesson plans when introducing new topics, or creating rubrics, just to name a few. Elsewise, there is a healthy scepticism coupled with a reluctance to change practice when the stakes are high. This could be as simple as, 'Do I have to create ANOTHER account and password', to 'If the students use AI, it won't be their work and it is not fair', or, 'I cannot control what I do not understand'.

Conversely, students can be encapsulated in a single voice – "Yes please". Never knowing life without it, and only thinking about how it can advantage them, teenagers are adept and finding tools that make their lives easier. The greater issue here is that students are not always aware of when they are using AI too much (think Grammarly) or without discretion (How is what is being presented to them as normative actually shaping their viewpoints and values?).

This is not the moment to play it safe. It is not possible, or advisable, to ignore the existence of AI tools. Like it or not, preparing students for a flourishing life beyond school means that they

must have the skills to adapt to new technologies, to use them critically and with discernment, and to not diminish their own unique viewpoints, or those of others, in the process.

The concept of a ban seems incomprehensible. What would that list look like? Sure, we could blacklist the likes of ChatGPT – and equivalents that we know about now – but that won't stop students using it out of our protective digital environments, and it can never keep up: Are we banning Google searches? Spell check? Are we banning predictive text? What educational outcomes would be lost? If we ban AI as a tool, how will we teach the students how to use it appropriately? How to question what they are reading and to wonder how it is shaping their views?

Instead, we need to have a conversation about the engine behind AI. We need to be thinking about the body of knowledge (the internet up until 2021) and who constructed this knowledge, what values and voices it preferences, and then what skills we use to interpret and critique this construction. AI tells us what normal looks like, teaches us to be prescriptivist SAE language users, defines perfection and good practice for us. Covert prestige is attached to what it tells us, surreptitiously shaping our views on the world. If we ignore this, we are not educating well.

As leaders, we need a better understanding ourselves. There is an abundance of forums for this. Too many and this needs to focus, not so much on the technical and practical uses (we do have google for this), but the underlying premise of AI. Our systems advisors are focussing on protecting the authenticity of our creation, ensuring that we 'do no harm' but this is not addressing the covert harm that comes from experiencing a world only through a white western male perspective.

Then we can start working with our staff about appropriate and effective ways to use the technology. This needs to be a revolution to the way that we work, not a substitution or an addition. There is certainly time saving and effective outcomes for AI in meeting the needs of our students. It cannot however, design lessons that are tailored to our specific students or include the immediate context. AI cannot form

relationships, respond to the myriad data sources, or respond on the spot when an activity is not reaching the outcomes.

What do we need to be doing?

Generative AI instruction is key to supporting staff to achieve the best results. Reviewing and being critical of the output is what will make it a success. There is no question that education-specific tools can be a time saving and effective way to design curriculum and pedagogies. Staff also need strategies to critically audit these outputs such that they are achieving the best possible results.

Staff and students need clear guidelines about when to use AI and when they should not. To understand appropriate student use: the difference between a photoshopping software and one that creates an image without the creative direction of the student.

Teachers need to equip students with the critical skills to determine the values behind the creation, for example that a created image or text is based upon a preconceived notion of what constitutes a good image is key to them being able to control the impact. That whenever we engage with a canonised body of knowledge, it has been curated from a particular perspective, and that when we are constantly exposed to one type of viewpoint, we cannot avoid accepting this as normal. This must be a focus for everyone, but particularly gender or minority groups.

Students need to be empowered to be the inventors of the technology, to use their imagination and wondering to design the next phase and respond to needs of their own perspective. To be part of the discourse, to learn the programming skills needed to fully engage with the technology and provide the gendered perspective (not just as a mask of convenience in a chat bot). Girls' education needs to be engaged in networks that drive this discourse so that the students can see via role models the impact that they can have in the future.

What does a school policy on AI look like?

It is a policy that accepts that AI is part of our present and our future. It takes an educative stance for both staff and students ensuring that it is a tool to support our thinking and creativity, not one that replaces it. It is a policy that focuses on digital literacies and the general capabilities of critical and creative thinking. It is a policy that reminds of the absolute privilege that allows us to utilise AI to make our lives better, challenging us to contribute to the broader discourse of gender and social norms, identifying and correcting the in-built biases.

That is a lot to take in all at once! What we do know is that AI and associated technology is only going to increase. Our role in this is to educate our young people to know when they are using AI, what influence and impact it has on our thinking and what we produce and to ensure that our unique human gifts, our authenticity, are not compromised. As teachers, we need to work with students to understand when the technology is supporting them, when it is useful but also when it is not an expression of their own skills and knowledge.

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Standards:

6 Engage in Professional Learning

- 6.1.2 Identify and plan professional learning needs
- 6.2.2 Engage in professional learning and improve practice

7 Engage professionally with colleagues, parents, carers and the community

- 7.1.2 Meet professional ethics and responsibilities

Hours of professional learning involved in reading and reflection





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