

Australian Parliamentary Standing Committee on Employment Education and Training: inquiry into the use of generative AI in the Australian education system

**Submission from the Department for Education South Australia
July 2023**



Introduction

This submission is provided by the Department for Education South Australia (the department). It outlines the department's position on the use of generative AI in South Australian government schools, discusses some of the benefits and challenges of generative AI tools in education, and outlines how the department is supporting government schools to navigate the evolving digital landscape. It factors broader South Australian Government positions on the use of generative AI in government agencies.

In making this submission, the department notes that education ministers from all Australian states and territories have agreed that responding to the risks and harnessing opportunities from generative AI technologies is a national education priority. They have agreed to develop the Australian Framework for Generative Artificial Intelligence in Schools, which will cover elements of human and social wellbeing, transparency, fairness, accountability and privacy and security. The department is participating in this work through a national AI taskforce. The Inquiry should factor the work of the taskforce and the framework it has developed in making its recommendations.

Generative artificial intelligence in South Australian government schools

Generative AI will continue to have an impact on the way we live, learn and work. While its transformative potential is yet to fully emerge, the technology is here to stay, its use will undoubtedly become more prevalent in schools and workplaces, and it will constantly evolve.

The early signs are that generative AI technology has significant potential benefits in education. The challenge for all education systems is harnessing these benefits while carefully considering learning design, and a range of access, privacy, security, intellectual property, and ethical challenges. The department is committed to supporting its educators, leaders, support staff, students, and corporate staff to take advantage of the benefits of AI responsibly and ethically.

Given many of these tools are relatively new in the public domain, we are only beginning to learn what is possible. As we use and experiment, we will gradually learn more about how these technologies can be used for maximum benefit in education. The department is establishing an ecosystem of practice around AI in government schools, bringing together educators, students and experts to probe what is possible and learn together what is necessary for this powerful technology to have an impact.

AI advancements such as those we saw early in 2023 with ChatGPT require us to adjust thinking, practices, and processes in what students learn and how they are taught. The department has chosen not to issue any blanket bans on generative AI tools in South Australian government schools. Schools will determine when it is suitable for teachers and students to use AI-enabled technologies for teaching and learning, taking into account privacy, security, and students' learning needs, as they do now with other digital technologies. They will be supported by departmental guidance and tools.

The opportunities of generative AI

The theoretical opportunities associated with generative AI in education have been well identified: supporting students with personalised content, learning support and targeted feedback, and teachers with planning, instruction, assessment, and streamlining tasks. Just how impactful each of these use cases are, however, remains to be fully understood.

The department has identified some early priorities for exploration within the South Australian government system, which are detailed below.

Supporting equity

Generative AI, particularly chatbots, has an obvious use case for students in supporting their learning. For example:

- explaining information in different ways to enable better understanding
- summarising complex information
- creating a study timetable or program
- testing student knowledge or prepare practice questions
- assisting in synthesising information from different sources
- assisting in paraphrasing information.

The power of this use case lies in its ability to support students to access a level of learning support that may not ordinarily be available to them, through parents, carers, tutors or other members of the community. Giving everyone access, the skills to write effective prompts, and tools to think critically about responses could be a driver of equity in education.

Ensuring the foundational enablers to explore this potential is a core challenge. For example, a wide-variety of students would need access to the tools, their use needs to be age-appropriate and controlled, and students would need the capability to write prompts and evaluate responses.

Without an equity lens in considering AI use in education, there is a real risk of inadvertently furthering digital divides between students and schools where those who can most benefit miss out.

The department encourages the Inquiry to consider how AI can be used to support equity in education systems, deliver benefits for students experiencing disadvantage, and students who may have lower digital capability. This includes what supports may need to be in place and the extent to which those supports differ for different cohorts.

Supporting personalised learning

The second main area of opportunity in the immediate-term is supporting personalised learning. Artificial intelligent tutoring systems have been around for several years, but their progress and utility are likely to be bolstered by advancements in generative AI through dialogue-based tutoring, which can receive a written or spoken response which is then evaluated with feedback and an opportunity to probe further.

Providing appropriate controls are in place, generative AI can play a role in supporting educators to build more personalised learning for students, and students to receive more adaptive and frequent

feedback. This could be particularly powerful for those students who struggle with traditional learning, or who may have particular learning needs. For example, programs can adapt to a student's learning style, making it easier for them to understand complex concepts also plays a role. Students can also identify their strengths and weaknesses and work on them accordingly.

Like other technologies, however, it is important to note that AI is an enabler and enhancer of teaching and learning, not a substitute for educator-led instruction. Its use in the classroom and at home needs to be considered on this basis. For example, when using generative AI to support student learning design, it is vital to thoroughly evaluate the quality of the outputs, and consider how to tailor the learning experience to meet the specific needs of students and the unique context in which they learn. Similarly, there remains a need to discuss AI identified trends or issues with students, so they can develop a deeper understanding of the concepts in dialogue with their educators.

Developing higher-level cognitive skills, like critical thinking and creativity through educator-led learning will always be necessary to support students to use AI responsibly and effectively.

The department encourages the Inquiry to consider the opportunities for generative AI to support personalised learning and the role that teachers can play in that process.

Streamlining teaching tasks and school administration

Another key area of opportunity the department is exploring currently is the ability to streamline teaching tasks and school administration. The department notes Priority Area 3 of the National Teacher Workforce Action Plan and its focus on reducing unnecessary workload and freeing up teachers to focus on core teaching tasks and collaboration. Generative AI offers significant potential in this regard. There are tasks that educators undertake frequently which generative AI could streamline. For example, generative AI could be used:

- as a starting point for lesson planning – inputting lesson objectives and other parameters, and using the outputs as ideas for design and activities
- to reword information – making it more accessible for students at different stages of learning
- to summarise research or concepts – you could ask for a summary of research or a concept and experiment with it as an input to lessons
- for inspiration on topics – asking for input on a topic to cover as part of a particular learning area based on the needs of a class
- to create or prompt questions – asking for a topic or question in a particular area and using it as the basis for interesting conversations or assessment for students
- to tailor a task or learning to support engagement – asking for input about ways in which a topic could be presented in more interesting or dynamic ways.

There are also uses which are commonplace for all workplaces, and which generative AI could support in schools. Generative AI can automate a wide variety of tasks, freeing up employees to focus on higher value work. The capabilities of these technologies can be applied to nearly all aspects of business currently: generating reports, creating content and marketing materials such as

email campaigns and social media posts, creating presentations, generating ideas, and helping with brainstorming.

The challenges with generative AI

Every new invention poses new challenges and generative AI, as component of broader digital transformation, is no different. In some cases, these challenges present significant hurdles to realising the benefits outlined above. In others, the risks can be controlled currently to a suitable degree to enable meaningful use.

As Australian jurisdictions seek to collectively address some of these challenges, the department notes opportunities to use the national education architecture to drive minimum standards, manage the market to optimise AI-enabled technologies for education use, and support education systems to address risks without comprising the ability to derive benefit or local decision making. The department encourages the Inquiry to consider the collective opportunities in this regard.

Some of the core challenges are outlined below.

Immediate challenges

Access

- The terms of service for some AI tools require users to be over a certain age. In the case of ChatGPT and DALL-E this is 13 years old, with those under 18 requiring parental consent to use the platform. Some generative AI sites do not request proof of age during registration. Others only require an email or Google or Microsoft account to register. This makes it difficult to strictly control access.

Content

- Generative AI chatbots sometimes provide answers that cannot be tracked back to the source information. They can produce false references to support the answers provided (which seem convincing on their face) and at times, even make things up, which is referred to as 'hallucination'.
- They are trained using large data sets and may produce inappropriate content for students based on questions asked. Their moderation is still rudimentary and cannot be easily done by the user.
- There may be implicit or explicit biases against individuals or groups in responses. For example, they may perpetuate outdated stereotypes or make assumptions about someone's background or personality based on their characteristics. In some cases, this may be due to incomplete datasets and training underpinning the model. In others it may be a result of bias in the data itself.
- Overtime, generative AI chatbots understand more about individual users based on their digital footprint and customise responses to their requests. These responses may serve to reinforce narrow views of the world, particularly where students are concerned.

Data, privacy, and security

- The data and information entered into generative AI tools becomes the property of the owners of the tools. It may not always be clear how the tools protect the privacy and security of data. This is compounded where the products build profiles of users over time. Given the relatively limited data

privacy of AI, the department has recommended that staff and students do not enter any personal or identifiable information, including student work, into chatbots.

Learning needs

- Generative AI chatbots raise particular considerations in relation to assessment integrity. Because content is generated (and not copied) it can be difficult to identify – even for automated anti-plagiarism tools – where a student may have used a generative chatbot to support their work. Schools and teachers will need to consider appropriate controls, and strategies to identify misuse.
- As with other matters relating to assessment integrity and student work, open discussions about plagiarism and misuse of existing tools are important for students. In the context of generative AI, this means how students can use them in service of their original thinking and work, rather than as a substitute.

Broader challenges

Generative AI has also raised broader public concerns and questions, which play out in the education sphere:

- how generative AI is affecting the wellbeing of users, especially students
- how we can ensure transparency in the gathering and aggregation of data used by generative AI, and how such data influences user decisions
- how to ensure that generative AI application does not widen the digital and socioeconomic divide in society
- how to ensure that decisions made using generative AI are fair and equitable across cohorts of students
- how to ensure transparency in generative AI backend data and architecture
- how to develop checks and balances to ensure that student and user information, and privacy are protected
- how to ensure adequate compensation for works used in generative AI.

How the department is supporting schools to explore generative AI Technology

Since the release of ChatGPT in November 2022, the department has been reviewing ways to support the responsible and effective use of ChatGPT and other related AI capable technologies. It recognises that in order to realise some of the benefits, the access and use of generative AI needs to be made more appropriate for classrooms and students.

Early in 2023, the department commenced a proof of concept with Microsoft to integrate the 'Open AI' platform (the platform currently hosting ChatGPT) into the department's Microsoft Azure Tenancy (private cloud). This enabled the department to produce its own version of a generative AI chatbot, like ChatGPT.

The benefit of this approach is that the department will have a version of a generative AI chatbot which:

- allows greater control over what data or information can be accessed through the platform
- provides the department with control over the data received through the platform
- reduces the possibility of inappropriate content being provided, meaning it is more appropriate for teaching and learning purposes.

The department is currently undertaking an 8-week trial of the technology with several secondary government schools in South Australia. The trial will include capability building initiatives (supporting teacher and student use), as well as an observational study to understand how it is being used and the impact it can have on teaching and learning.

The trial will inform consideration of broader implementation and provide valuable insight as the department explores its strategic priorities identified above.

Guidance

The department recognises that many schools are seeking guidance on the opportunities and challenges associated with generative AI, as well as on practical classroom uses. It has established an AI advice series through which it will regularly disseminate advice to schools on different aspects of AI use in education. This includes topics such as: security and privacy, assessment and assessment integrity, using AI to streamline teaching tasks, and supporting personalised learning. Where relevant, guidance for parents and carers is also being produced. The department will continue to monitor the evolving technology landscape and provide advice and guidance as appropriate.