



**Inquiry into the use of generative artificial
intelligence in the Australian education system**

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FEDERATION OF PARENTS AND CITIZENS ASSOCIATIONS OF NEW SOUTH WALES

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Introduction

The Federation of Parents and Citizens Associations of New South Wales (P&C Federation) is thankful for this opportunity to contribute to this Senate Inquiry into the use of generative artificial intelligence (AI) in the Australian education system. P&C Federation supports the position of individual educational and developmental needs met by a range of differential services expressed through appropriate and well-planned curricula, programs and environments conducted by sensitive and well-trained personnel in conjunction with parents¹ and families.

The core belief of P&C Federation is that the education of our children and youth is the most fundamental means of ensuring individual success and success as a nation. Government's primary responsibility is to ensure education is equitable, well resourced and fully funded.

P&C Federation is a representative voice for parents and students in public education in NSW. With over 1800 member associations, 5000 association executive members, and 820,000 public school children and their parents making P&C Associations one of the largest volunteer based organisations within Australia. Our understanding of the issues within education is broad and carries with it the voice of a substantial body of parents and carers.

This submission of the P&C Federation is partially shaped by the feedback we received from parents in NSW public schools in response to the following questions posed to them:

1. In what ways do you think AI technology will affect education and schools?
2. What do you see as the main benefits of AI technology in education and schools? What do you see as the biggest risks?
3. On balance, do you think the AI technology will have a positive, negative, neutral or uncertain impact on education?
4. What would you like to see governments do in regard to AI technology in schools and education?

Preamble

The use of generative AI in education remains very much in its infancy, and the potential benefits and pitfalls are great. Although AI technology is not new, the interest in generative AI has accelerated in recent times, due largely to the launch of generative AI tools such as ChatGPT. The education sector, along with government and industries in general, is only beginning to contend with the implications of this technology. As one parent told the P&C Federation, "*AI technology is a huge, broad ranging beast that we have not been exposed to extensively as yet.*" While the P&C Federation generally encourages the education sector to utilise rather than shun this technology, the uncertainty renders it necessary for all stakeholders to proceed cautiously in this field.

Terms of Reference

1. The strengths and benefits of generative AI tools for children, students, educators and systems and the ways in which they can be used to improve education outcomes

In our view, the following areas are the key potential benefits generative AI tools for students and educators:

- Personalised learning – generative AI tools have potential to identify individual students' strengths, weaknesses, interests, and learning styles, and generate learning material for students that is

¹ "Parent" refers to anyone with legal care of a child, such as a parent, carer or legal guardian

tailored accordingly. This may include the possibility of providing students with feedback as to their work and progress.

- Relieving administrative burden on educators – generative AI tools may alleviate administrative tasks in the following ways:
 - Generating syllabus/curriculum content – a sufficiently large educational dataset can assist in rapidly creating content for syllabi and curricula, which may allow teachers more time to develop lessons and pedagogical approaches.
 - Assisting monitoring of student progressions:

One parent told the P&C Federation “*AI technology is here to stay and is becoming part of life. Governments must ensure that public schools are equipped to immediately incorporate AI into their teaching, so that children can use it, understand it, and benefit from it. Private schools are already doing this and children in the public system shouldn’t be disadvantaged and left behind. This will take considerable investment in teacher training, and requires urgent action now.*”

2. The future impact generative AI tools will have on teaching and assessment practices in all education sectors, the role of educators, and the education workforce generally.

Due to its ability to rapidly process large quantities of data, generative AI may highly useful in identifying long-term and large-scale trends in education. There is great potential for using this capability to inform and formulate education policy.

Parents who wrote to the P&C Federation on this topic expressed a range of views. Some were generally positive about the potential of generative AI, with the following benefits being cited:

- Several parents made note of the potential of this technology to automate administrative tasks, allowing educators to allocate more time to instruction and student support, with one parent believing this should be the highest use of the tool, as it would “*free them up to spend more time with their real jobs (teaching) instead of what is not what they signed up for (administrative work)*”. Another parent told the P&C Federation *AI can definitely help teachers with their workload, which would consequently free them up to spend more time with their real jobs (teaching) instead of what is not what they signed up for (administrative work). AI can also improve productivity and efficiency among educators. It would be easier and faster to have machines analysing results and coming up with suggestions, than having teachers having all the work to go through numbers and possibilities for students’ improvement.*
- Other parents cited its potential to “*facilitate differentiated instruction, enabling educators to cater to the diverse learning needs of students. Additionally, AI can assist in identifying early warning signs of learning difficulties or emotional distress, enabling timely interventions to support students’ well-being.*”

Other parents raised concerns about teachers over-relying on this technology to teach their classes. One parent told the P&C Federation “*Just yesterday my child’s science class couldn’t go ahead as they had no power to run the smart board. I questioned if the teacher actually knew what she was teaching, or did she need technology to enable her to teach? It would only get worse with AI.*”

Relatedly, other parents emphasised that “*while AI has the potential to enhance education significantly, it should complement, not replace, human educators. The role of teachers in guiding and inspiring students remains vital in the learning process.*” Similarly, another parent argued the approach should be “*more of a partnership with the computer, guiding it to create the outcomes with less time on routine or laborious tasks.*”

The risks and challenges presented by generative AI tools, including in ensuring their safe and ethical use and in promoting ongoing academic and research integrity.

Overestimating the utility of generative AI technology

The potential of generative AI technology will understandably tempt education departments to rely on it to decrease administrative costs. There is a risk this will cause departments to overlook the limitations of this technology and use generative AI tools for tasks to which they are not suited.

The output of generative AI technology is dependent on the data that is input to it. The fundamental limitation of this was outlined by Chomsky et al. (2023) in their assessment of machine learning tools such as ChatGPT. They noted *“the human mind is not, like ChatGPT and its ilk, a lumbering statistical engine for pattern matching, gorging on hundreds of terabytes of data and extrapolating the most likely conversational response or most probable answer to a scientific question. On the contrary, the human mind is a surprisingly efficient and even elegant system that operates with small amounts of information; it seeks not to infer brute correlations among data points but to create explanations”*. They argued that these tools’ *“deepest flaw is the absence of the most critical capacity of any intelligence: to say not only what is the case, what was the case and what will be the case — that’s description and prediction — but also what is not the case and what could and could not be the case.”*²

Selwyn (2022) also argued that *“one of the inherent limitations in any educational application of AI is the working assumption that all significant facets of student activity and the learning process can be captured in data form”* and that there is a valid concern that *“there are not enough data points in the world to adequately capture the complexities and nuances of who a student is, or how a school functions.”* The author also cites the AI community’s *“limited understanding of the nature and complexity of intelligence itself”* and encourages *“more realistic understandings around the capability of AI products to approximate human traits.”*³

Examples of how these fundamental limitations of AI technology can impact education are (1) the grading of student work and (2) algorithmic bias, which we outline below.

Grading of student work

The last time the P&C Federation commented on AI technology in education was in 2017-18, when the Australian Curriculum, Assessment and Reporting Authority (ACARA) proposed using automated essay scoring to mark NAPLAN Online writing tasks. The P&C Federation strongly argued that while such technology could measure qualities like syntax and vocabulary, it was incapable of assessing the substantive content of written work. Consequently, students could be awarded high marks for writing random gibberish, as long as they used sophisticated vocabulary and sentence structure.⁴ This would be of essentially no educational value, and ACARA eventually abandoned this proposal.

A more recent example occurred in the UK in 2020, when the government did not allow A-level exams to proceed as planned due to the COVID-19 pandemic and students’ A-level grades were instead determined by an algorithm. The algorithm used historical data of each student’s previous grade levels, and the historical grade distribution of their school. Consequently, *“if no one from your school has gotten the highest grade in the past three years, it’s extremely unlikely—if not impossible—for anyone from*

² Noam Chomsky, I Roberts, J Watumull. AI Unravalled: The false promise of ChatGPT. *New York Times*. 10 March 2023.

³ Selwyn. 2022. The future of AI and education: Some cautionary notes. *European Journal of Education Research, Development and Policy*. Vol. 57(4), pp. 620-631

⁴ P&C Federation. *Robots Cannot Read NAPLAN Essays*. 20 October 2017
<https://www.pandc.org.au/forms/mediareleases/Media%20Release%20171020.pdf>

your school to attain that grade this year."⁵ Figures revealed nearly 40% of students had their grades downgraded by this algorithm, and as A-level exam scores are the main criteria for university entry, the implications for students were large. A public outcry caused the British Government to retract these exam results.

In our view, these cases reveal the inadvisability of replacing human graders with automated grading that run on algorithms. The P&C Federation would question the use of generative AI technology at all in marking, with the possible exception of cases where it is directly marking questions to which there are definite right/wrong answers, such as multiple choice or arithmetic questions. If this technology is to be used at all in grading student work, it must always be verified by a qualified human grader.

Algorithmic bias

The A-level case in the UK underscores the larger risk of algorithmic bias, where inputs cause a generative AI tool to produce outputs that lead to unfairness. This is due to flaws in algorithmic models, such as using incomplete historical datasets, which may entrench or obscure unfairness. Possible examples include overlooking disadvantaged groups such as Indigenous people who are less represented in datasets, or (as in the UK A-level case) schools that have historically underperformed. If not properly accounted for, algorithmic bias may even cause education departments to breach discrimination law.⁶

Some parents raised the risk of algorithmic bias with the P&C Federation, stating "*If AI algorithms are trained on biased data or not properly regulated, they may inadvertently reinforce discriminatory practices and widen educational disparities.*"

Ultimately, the P&C Federation concurs with the view of the Department of Industry, Science and Resources Discussion Paper:

Where AI developers cannot correct for or mitigate unwanted bias, they should either:

- *reconsider the appropriateness of deploying the AI system at all*
- *find alternative data, scale back or revisit their objectives, and then carefully train and test their models again.*⁷

Erosion of learning and teaching

In feedback from parents ahead of this submission, the erosion of original thinking or analysis was one of the most common concerns, with some stating "*I strongly believe that AI will have a negative impact on education. Children will lose the ability to think, discuss and problem solve, and this is how many life lessons and coping strategies are learnt.*"

One parent told the P&C Federation of students using ChatGPT for take-home assessment tasks, and modifying some words to escape plagiarism rules. In light of this technology, this parent recommended the *immediate removal of the requirement to assess students with any take home tasks. All assessment tasks (up to and including HSC level) to be conducted at school under the supervision of professional teaching staff.*

⁵ Kolkman. 2020. What the world can learn from the UK's A-level grading fiasco
<https://blogs.lse.ac.uk/impactofsocialsciences/2020/08/26/fk-the-algorithm-what-the-world-can-learn-from-the-uks-a-level-grading-fiasco/>

⁶ The risks of algorithmic bias in AI breaching discrimination law were outlined in Chapter 8 of Australian Human Rights Commission. 2021. *Human Rights and Technology: Final Report*

⁷ Department of Industry, Science and Resources. 2023. *Safe and responsible AI in Australia Discussion paper*. Page 8

Another parent who also works in vocational education told the P&C Federation they see AI “a very big concern for the future of education in schools - not so much from a teaching perspective but that of the student’s ability to learn and absorb, analyse and construct arguments from information... I have seen people leave school and not even be able to fill in an enrolment form with their personal details - this alone is an absolute disgrace to our educational system... Ai will further exacerbate this as students will simply ask the Ai generator to complete their tasks for them, reducing their ability to analyse and think for themselves (a skill already lacking in today’s school leavers).”

Conversely, another parent relayed an experience where her child wrote an essay without using AI technology, but an anti-plagiarism site found his work was over 50% AI generated. This would highlight the low degree of accuracy in current technology in detecting AI-generated work.

In the P&C Federation’s view, there is high potential that students will use generative AI platforms such as ChatGPT to complete school assessments, essentially an act of plagiarism which may be highly difficult to detect. Marche (2022) has observed that essay writing “has been the center of humanistic pedagogy for generations”, and “is the way we teach children how to research, think, and write. That entire tradition is about to be disrupted from the ground up.”⁸ As this technology currently stands, there is a clear risk that students will use it as essentially a way to complete their schoolwork while avoiding learning. Several Australian jurisdictions, including NSW, have restricted the use of ChatGPT by students using Department software. However, this is not likely to have a serious impact on students’ use of these tools outside the Department’s channels.

Ultimately, generative AI tools would ideally be used to help students work better. In the words of one parent correspondent to the P&C Federation, the goals of AI are not to shorten the ways but to make students work in a “smarter way”.

Privacy

Generative AI tools depend on the often-rapid attainment of large quantities of data, which immediately raises concerns about the security of that data. This is especially pertinent considering that, unlike search engines such as Google, generative AI tools are still novel and the privacy implications of them are not yet clear cut. The P&C Federation considers it imperative that there are strong guidelines around the acquisition, use and retainment of this data, including the need for parents to be made aware what data is being collected. As one parent wrote to the P&C Federation, “As AI systems collect and process sensitive student information, there is a need for robust safeguards to ensure the protection of personal data and prevent unauthorized access or misuse.”

Another parent suggested these concerns “will be resolved as the AI interactions become compartmentalised such as constrained to the device in our hand or containerised to ensure that we remain the owners of our inputted data for our benefit.”

The P&C Federation suggests education departments adopt policies that include the following measures:

- Minimise the collection and retention of personal data.
- Require the transparent communication of how data is collected, stored and utilised, including clear controls over who may access the data.
- Create guidelines around the anonymisation of data, to protect individuals from being identified by generative outputs.

⁸ Marche. The College Essay Is Dead. *The Atlantic*. 6 December 2022.

3. How cohorts of children, students and families experiencing disadvantage can access the benefits of AI

Several parents raised the potential of this technology to expand access to education in remote areas. One parent told the P&C Federation this technology can “*promote some learning experiences that may not be possible for students that are studying in more remote places (not uncommon in Australia) and for students that maybe could not afford an experience such as a trip (e.g., virtual reality experiences).*” Other parents noted the potential of this technology to assist students with a disability, and in identifying early warning signs of learning difficulties or emotional distress, enabling timely interventions to support students' well-being.

4. International and domestic practices and policies in response to the increased use of generative AI tools in education, including examples of best practice implementation, independent evaluation of outcomes, and lessons applicable to the Australian context.

International

One key international framework is the Beijing Consensus on Artificial Intelligence and Education, the product of a UNESCO conference in 2019. The P&C Federation considers this document to be reasonably balanced, acknowledging the inherent benefits, flaws and limitations of AI technology in education. and could be used as one framework in guiding policy around generative AI in education.

Domestic

The current domestic frameworks remain largely thin. On 27 February 2023, an Education Minister's meeting agreed to establish a taskforce to develop a nationally consistent framework to guide schools in harnessing AI tools to support teaching and learning.⁹

The NSW Government has a Mandatory Ethical Principles for the use of AI, while the NSW Department of Education has guidelines regarding use of generative AI that focus largely on protection of personal information and the use of teachers to verify output of generative AI content.

In the P&C Federation's view, such policies must be more robust than their current form and the establishment of nationally consistent principles and guidelines around generative AI in schools would be of great assistance.

5. Recommendations to manage the risks, seize the opportunities, and guide the potential development of generative AI tools including in the area of standards.

The P&C Federation would suggest any framework on using AI in education should be shaped by principles that would include the following:

1. Generative AI technology has much potential for enhancing educational experiences and outcomes of students, and for assisting the pedagogical practices of classroom teachers. In the words of one parent correspondent, “*When deployed ethically and thoughtfully, AI can empower educators, improve learning outcomes, and foster greater equity in education. However, this outcome is contingent upon proactive measures to mitigate risks and ensure responsible implementation. Therefore, it is crucial to establish clear guidelines, promote transparency, and*

⁹ Communique - Education Ministers Meeting - Monday 27 February 2023 - <https://www.jasonclare.com.au/media/portfolio-media-releases/5400-communique-education-ministers-meeting-monday-27-february-2023>

involve stakeholders in the decision-making process to harness the full potential of AI in education.”

2. The core of education should continue to be in-person interaction and collaboration between teachers and students. Generative AI technology can supplement this form of education, but should not replace it.
3. The utilisation of any generative AI technology must always be supported by a clear assessment of the risks and benefits.
4. Education departments should explore and develop the benefits of generative AI technology in helping students with disadvantages, such as disability or residing in remote geographic locations.
5. Develop clear processes surrounding the ethical and transparent use of generative AI technology that addresses:
 - a. The collection, retention and utilisation of educational data, which accounts for data privacy.
 - b. The issue of algorithmic bias and transparency.
 - c. What generative AI technology is to be used for, including an acknowledgment of the inherent limitations of this technology so that it is not deployed for purposes for which it is not suited.
6. Invest in funding and professional development for educators on how to appropriately integrate generative AI technology in their teaching processes, in ways that enhance student outcomes.