PARLIMENTARY INQUIRY INTO THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE IN THE AUSTRALIAN EDUCATION SYSTEM

Attention	The House Standing Committee on Employment, Education and Training
Response to	PARLIMENTARY INQUIRY INTO THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE IN THE AUSTRALIAN EDUCATION SYSTEM PO Box 6021 Parliament House CANBERRA Canberra ACT 2600 Phone: +61 2 6277 4573 ee.reps@aph.gov.au
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I trust my contributions have been helpful to your inquiry and would be very happy to discuss any of these matters further.

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Abstract

This abstract examines the implications of artificial intelligence, particularly natural language models like ChatGPT, in higher education. Trained on a vast dataset of internet text, these models can generate responses to a wide range of prompts. The inquiry explores the use of Generative AI since its release in November 2022 and highlights both its advantages and disadvantages.

One notable advantage is the potential for AI to address learning challenges by facilitating knowledge transfer, dispelling misconceptions, and fostering critical thinking skills among students. However, the article also acknowledges concerns regarding the use of Generative AI in assessments and the potential for academic dishonesty and integrity issues. To gain a deeper understanding, the authors conduct a literature review on the usage of Generative AI in education, emphasizing the high level of interest in this technology.

By summarizing the research findings, author offers usage guidelines for students and teachers, aiming to navigate the potential implications of Generative AI in the educational context. Author also emphasizes the importance of government involvement in regulating its usage.

1. Introduction

Generative AI, a variant of GPT-3 developed by OpenAI, has gained significant attention and popularity since its release. It has been widely used, including in educational settings such as the International Baccalaureate program (Chadwick, 2023). While there have been concerns and attempts to ban Generative AI in education, previous attempts to ban emerging technologies in higher education have not been successful (Finkle & Masters, 2014; Spies et al., 2010).

Although Generative AI has limitations, such as its performance in certain tasks, it offers numerous advantages that should be considered. Users must exercise caution and understand its limitations to make informed decisions about its use. Its human-like capabilities have opened up unprecedented prospects in academia, but there are concerns regarding its use in assessments and the potential for academic cheating.

While the integrity of assessments is not currently in crisis, the potential threats associated with using Generative AI in assessments cannot be ignored. Certain programs, such as management studies and information technology, may be at higher risk. Emphasizing critical thinking and discouraging copying and pasting is crucial in education. However, it is important to adapt to new technologies in our fields of interest.

This submission presents materials on the use of Generative AI in education, including personal experiences and insights from academia and schools.

2. Strengths and benefits of Generative AI as an educational tool

In recent years, there has been growing interest in using chatbots and artificial intelligence (AI) in education and research. Generative AI, based on the GPT-3 architecture, shows promise in enhancing teaching and learning experiences. Generative AI has been used to create various literary texts, explain complex topics, and generate model answers (Tili et al., 2023). Integrating chatbots into online platforms can improve student-teacher interaction and learning experiences (Dwivedi et al., 2023; Kuhail et al., 2022). However, over-reliance on chatbots may decrease critical thinking skills and independent problem-solving abilities (Kooli, 2003). Generative AI benefits non-English speaking students in language editing, translation, and overcoming language barriers (Lim et al., 2023). It provides accurate responses, enhances peer communication, and offers quick information summarization (Geerling et al., 2023; Farrokhnia et al., 2023). Generative AI's interactive nature helps identify gaps in student learning and provides timely feedback (Lim et al., 2023). While Generative AI has the potential to revolutionize education and research, caution is needed to maintain critical thinking skills and independent problem-solving abilities.

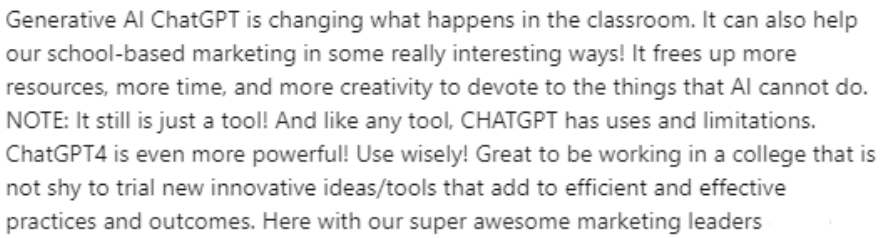
3. Risks and challenges presented by generative AI tools.

Technology's increasing presence in education raises concerns about the potential negative impact on critical thinking skills and independent problem-solving abilities. Overreliance on technology can hinder creative and critical thinking, leading to disengagement and lack of initiative (Kooli, 2003). Generative AI, while efficient, relies on prompts and lacks contextual understanding and creativity (Kooli, 2023). Plagiarism detection and equitable assessment are challenges posed by AI tools (Geerling et al., 2023). There is a need for vigilance to ensure accuracy and integrity (Farrokhnia et al., 2023; Debby et al., 2023). Educators must strike a balance between technology and traditional teaching methods to foster well-rounded skills. AI-generated text can evade detection but must be prevented to maintain academic integrity (Yeadon et al., 2022). Affordability and access to Generative AI tools pose equity concerns (Lim et al., 2023). Considerations should be made before implementing premium versions.

4. International and Domestic practices

Australian education sector is divided and confused in terms of the using generative AI. I have experienced that some private schools in Australia have encouraged their students to use the AI tools for certain extend and whereas public schools show strict policies. We can see that there will be many tools as such in the market in coming years. For an example, Gemini is still in training, but it's already exhibiting multimodal capabilities never seen in prior models.

1. *Private school Teacher's post on LinkedIn the teacher recommends the tool but to use it wisely (source LinkedIn)*


Generative AI ChatGPT is changing what happens in the classroom. It can also help our school-based marketing in some really interesting ways! It frees up more resources, more time, and more creativity to devote to the things that AI cannot do. NOTE: It still is just a tool! And like any tool, CHATGPT has uses and limitations. ChatGPT4 is even more powerful! Use wisely! Great to be working in a college that is not shy to trial new innovative ideas/tools that add to efficient and effective practices and outcomes. Here with our super awesome marketing leaders

2. *This article was found on the internet.*
   Embracing the use of AI in teaching and learning (Source the Guardian, Internet)
   https://www.theguardian.com/technology/2023/feb/27/chatgpt-allowed-international-baccalaureate-essays-chatbot

5. Current Recommendation

The use of Generative AI in education has both benefits and drawbacks. To ensure ethical use, experts from various fields should be consulted to develop guidelines. Here are some key guidelines in practice.

- Raise awareness of generative AI's potential uses and limitations.
- Use Generative AI as a complementary tool, not a substitute for human researchers.
- Incorporate proctored, in-person assessments alongside AI tools.
- Develop ethical principles and guidelines for Generative AI in higher education.
- Promote originality and creativity in assignments.
- Implement strategies to prevent plagiarism when using Generative AI.
- Provide personalized feedback to students.
- Use formative assessment practices like self-assessment and peer feedback.
- By addressing ethical issues and limitations, educators can harness Generative AI as a valuable educational resource.

6. The government's Role.

a. We can expect to witness the emergence of future AI tools incorporating multimodal language models in the upcoming months and years, like Google Gemini. (Source: https://www.youtube.com/watch?v=gwEuvrI4fx4)
b. The existence of "haves" and "have nots" raises important questions about the government's role in addressing social and economic inequality.
c. How does the government exercise control over the storage of all this data?
d. Does the government embrace and adopt the technology, or reject it?
e. How to establish clear guidelines that determine the when, where, what, and how of utilizing these tools effectively.
f. How does government resolve the transparency of the AI algorithms?
g. How does government handle the cultural biasness of AI usage?
h. How does practically use Generative AI tools to redesign assessments?
i. If so, how, and when are teachers from both government and private sector trained?
j. How generative AI can be used to help disadvantage students to increase their literacy skills.

To ensure the quality of student learning and prepare them for a future where AI is pervasive, government schools should ensure that student work reflects their genuine effort and acknowledges the use of open AI, as necessary, while meeting regulatory standards. It is

crucial for the government to equip students with practical skills and ethical understanding of AI's appropriate use in the workplace. Additionally, government schools should have the ability to design assessments that either allow or restrict the use of open AI based on the context and adhere to relevant policies. What are social, cultural, and economic barriers implementing such policies?

In this endeavor, the government has responsibility eliminating any ambiguity and fostering a progressive approach towards implementation. The government needs to actively address these factors such as age limits, which tools, which subjects, assessment types etc. to ensure the responsible and beneficial integration of these technologies into education.

7. Summary

In conclusion, the use of AI in education is a complex issue that requires careful consideration of its benefits, risks, and ethical implications. While AI has the potential to revolutionize education and research, it also raises significant concerns about fairness, bias, and accountability. Therefore, the further research and discussion is needed to explore the potential benefits of AI in education and how it can be integrated effectively into teaching and learning processes.

To maximize the potential of AI in education, stakeholders must collaborate to develop policies, guidelines, and ethical frameworks that promote transparency, responsibility, and inclusivity. This will require ongoing public discussions, inquiries, and research to identify potential risks and benefits and ensure that AI tools are used effectively and responsibly. By working together, we can unlock the full potential of AI in education while mitigating the risks and ensuring a fair and equitable learning environment for all.

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