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Updated: 28 April 2023

Information Sheet - Part 1 of 2

Working with Artificial Intelligence

Midjourney generated image of a robot doing an exam at uni.

Potential for Generative Artificial Intelligence (GenAI) in the workplace and the professions - the future of work

GenAI is already being used; the most obvious example is the chatbots we see on websites that pop up offering to answer your question. The function of these is to augment available organisational resources. It is possible that GenAI tools will be used to augment the work of professionals by completing routine informational tasks. This will allow us to focus our efforts on tasks requiring decision making, critical review, intellectual curiosity, innovative solutions to problems; and ensuring constructs such as ethics are adhered to.

What is AI?

Artificial Intelligence (AI) is not new. As a field of research, it has been around for around 60 years, but as an industry has only taken off in the last decade due to the arrival of big data, cutting edge algorithms and low-cost computing (Tan, 2020).

AI is a type of technology that helps actual machines (like self-driving cars), and virtual machines (like Grammarly and Google Search), process information, make decisions, execute actions, learn from past actions and make better decisions. AI has the potential to radically transform the way we live, work, and learn.

AI for the people

In late November 2022, OpenAI, a Silicon Valley research organisation (openai.org), launched ChatGPT 3.5 (Generative Pretrained Transformer). Spotify took three years to reach one million users, but ChatGPT took only five days. This gives you an idea of how much interest there has been in this GenAI Chatbot.

In February 2023, a new version of Bing was released using an improved version of ChatGPT and in March ChatGPT 4.0 was revealed. As well, Microsoft, which has invested around 8 billion dollars into OpenAI and is planning to embed ChatGPT in its tools. Clearly, this is a rapidly growing and evolving space and only the beginning.

What exactly is ChatGPT?

ChatGPT is a text-based GenAI tool based on a Large Language Model (LLM), designed to process and generate text. It has been trained on a massive amount of language and is able to identify the patterns and relationships between words and phrases, then reorganise those patterns into a coherent, grammatically correct human-like response. It is conversational in nature, so you can ask it a question and then follow up with further questions.

ChatGPT 3.5 is limited. If you ask 3.5 "Who is the current Australian prime minister?", it will confidently tell you Scott Morrison, but if you ask 4.0, it will answer Anthony Albanese, as it can scrape the web for data in real time. Unnervingly, ChatGPT can confidently make things up or hallucinate, as it is called. So, care must be taken when using ChatGPT.

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Information Sheet – Part 2 of 2

Working with Artificial Intelligence

References

Kung, T. H., Cheatham, M., Medenilla, A., Sillos, C., Leon, L. D., Elepaño, C., Madriaga, M., Aggabao, R., Diaz-Candido, G., Maningo, J., & Tseng, V. (2023). Performance of ChatGPT on USMLE: Potential for AI-assisted medical education using large language models. PLOS Digital Health, 2(2), e0000198. https://doi.org/10.1371/journal.pdig.0000198

Marche, S. (2022, December 6). The college essay is dead. The Atlantic. https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/

Midjourney. (2023). Midjourney [Beta version - Text-to-Image Model]. https://www.midjourney.com/

Mollick, E. R., & Mollick, L. (2022). New modes of learning enabled by AI chatbots: Three methods and assignments (SSRN Scholarly Paper No. 4300783). https://doi.org/10.2139/ssrn.4300783

OpenAI. (2023). ChatGPT [GPT-3.5 Large Language Model]. https://chat.openai.com/

Tan, S. (2020). Artificial Intelligence in education: Rise of the Machines. Journal of Applied Learning and Teaching, 3(1), 129–133. https://doi.org/10.37074/jalt.2020.3.1.17

Note: ChatGPT 3.5 (OpenAI, 2023) was used as a brainstorming tool at the outset of writing this information sheet. The original image "Robot doing an exam at uni" was created by Midjourney.com, an image GenAI tool.

The impact of GenAI in higher education

The study of AI in education has been going on for 30 years and is predicted to make significant contributions to learning and teaching (Tan, 2020). Although ChatGPT has only been around for a short while, there is already considerable discussion and speculation around the benefits and limitations of such GenAI in an educational context.

Potential benefits of GenAI (such as ChatGPT)

Students

- An always-on just-in-time virtual tutor that can answer student questions and generate an endless supply of explanations, examples and practice exercises, which has the potential to overcome barriers to learning (Mollick & Mollick, 2022).
- A brainstorming tool and a means to instantaneously receive feedback on drafts of their work before submitting.

Educators:

- Assist in the generation of content as well as rapidly generate quiz questions on most topics.
- Provide feedback on their learning designs.
- Assist in the writing of assessment items.

Research:

- Help with literature searches.
- Data analysis and write-ups.

Potential challenges for educators

- Academic misconduct (cheating on assessment tasks) - the text ChatGPT outputs is uncannily human and difficult to detect, which raises questions about the validity of the academic essay as an assessment tool (Marche, 2022).
- ChatGPT has been demonstrated to be able to pass exams such as the USMLE (Kung et al., 2022).
- The data sources that inform ChatGPT output can be biased, inaccurate or just made up, so it is not a reliable source of truth.
- Privacy concerns – personal information is required to access these types of tools.

There is potential for inequities in performance and assessment:

- Students using GenAI will benefit from these tools answering their questions immediately (Mollick & Mollick, 2022), whilst those, who do not have access, must use other methods, such as discussion boards with asynchronous responses.
- Some students will be submitting GenAI enhanced work, whilst others will be submitting work that is unassisted.
- Where inevitably, such GenAI tools become monetized and pay-for service, the digital divide amongst students will widen.