Responsible use of Generative AI

This article provides an overview of generative artificial intelligence (AI) and resources to support colleagues and students to use generative AI tools responsibly in teaching, learning and assessment.

Why use generative AI responsibly?

Generative artificial intelligence (AI) is expected to transform education, work and many facets of life. Generative AI tools such as ChatGPT, Dall-E, Google Bard, GPT-4 and Microsoft 365 Copilot and Bing can process text, generate human-like responses and produce multimodal content. This is an important technology with diverse and growing capabilities, creating opportunities and challenges for education. We believe generative AI will play a significant role in society and encourage the responsible use of the technology in teaching, learning and assessment.

What is generative AI?

ChatGPT, a versatile chatbot developed by OpenAI, is a generative artificial intelligence (AI) tool that went viral after its launch in November 2022. Since the release of ChatGPT, generative AI technology continues to advance at a breakneck pace, propelling the development of other popular generative AI tools.

Generative artificial intelligence (AI) can process text, generate human-like responses and produce multimodal content (e.g. audio, images, simulations and videos). Common models of generative AI include natural language processing, speech recognition, Text-to-Image (T2I) and Text-to-Video (T2V) generation.

Generative AI tools such as ChatGPT, Dall-E, Google Bard, GPT-4, Microsoft 365 Copilot and Bing are built on Large Language Models (LLMs). LLMs are known as foundation models (Bommasani et al., 2021), a general class of AI models that are trained on a large volume of data and can be adapted to a wide range of tasks, such as answering questions, following instructions, translating languages, extracting information, completing code, captioning images and recognising objects.

GPT (Generative Pre-trained Transformer) is a LLM based on the transformer architecture, a deep learning model developed by Google (Vaswani et al., 2017). Deep learning is an advanced type of machine learning (a subset of AI) that is inspired by the neural networks of the brain (Hinton & Salakhutdinov, 2006).

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What are the opportunities?

OpenAI, the developer of ChatGPT, suggests a variety of generative AI applications in educational contexts, where teaching and learning could become more streamlined, personalised and accessible.

- Opportunities for teachers: generative AI creates new opportunities for teachers to develop educational content and teaching activities, provide students with interactive and engaging learning experiences (Qadir, 2022), improve learning outcomes through adaptive and personalised means of teaching (Kasneci et al. 2023), enhance the quality of targeted feedback and support to students (Bozkurt & Sharma, 2023), perform marking and feedback more efficiently, automate administrative tasks and thus potentially reducing workload (Department for Education, 2023).

- Opportunities for students: generative AI can serve as a personalised online tutoring tool embodying extensive knowledge on a wide range of topics, with the ability to interact with students in a conversational manner, provide personalised learning
support and feedback. By adapting to students' performance and adjusting the learning paths accordingly, generative AI tools could respond to individual learning needs and improve learning progress. Generative AI tools could also make knowledge more accessible to diverse students. In a recent student consultation at the University, respondents expressed a positive attitude towards incorporating AI into teaching and learning. Studies in other universities also indicate students' favourable perceptions of generative AI (Chan & Hu, 2023).

- Opportunities beyond education: generative AI tools are proliferating in sectors outside of education. An increasing number of organisations are also building domain- specific applications powered by LLMs. Although generative AI has the potential to enhance the productivity of knowledge workers, it is anticipated to profoundly impact the job market, affect employability of university graduates and transform the skills required in an AI-driven economy.

What are the risks?

Important questions have been raised about the risks of generative AI tools in higher education.

- Academic misconduct: generative AI tools such as ChatGPT and GPT-4 can be used to research, write essays and academic articles. Some universities and schools around the world have issued bans to prohibit students from using generative AI tools. In practice, detecting AI-written text may prove to be challenging.

- Unequal access: generative AI tools are not equally accessible to all users. Although ChatGPT is free of charge, it remains unavailable in certain countries and could be temporarily inaccessible at peak times. GPT-4, a more powerful and multimodal AI chatbot, is restricted to fee-paying

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subscribers. Hence, generative AI is paradoxically 'accessible' yet 'restrictive' ([Lim et al., 2023](#)).

- Legal and ethical risks: there are concerns about the legality and ethics of using generative AI in terms of intellectual property, data privacy and the General Data Protection Regulation (GDPR). We should also pay attention to the risks of biases and misinformation.

How to adapt to generative AI?

- Teaching, learning and assessment suggestions

The checklists provided in the "Adapting to Generative AI" document on [our webpage](#) are designed to help academics take account of generative AI tools in teaching, learning and assessment. The suggestions in the checklists are neither definitive nor exhaustive, leaving room for academics to make adjustments that are suitable for their subjects, programmes/modules and students.

- Acknowledging generative AI

Please refer to this [guide for referencing for generative AI](#) provided by the Academic Support team.

- Academic integrity

The [Assessment Misconduct Procedure](#) provides the definitions of assessment misconduct.

In addition to the definitions, assessment misconduct includes but is not limited to:

- *Using AI tools, such as chatbots and language models, to complete assessments or produce work without appropriate attribution; and*
- *Using paraphrasing tools or other automated tools to produce work without appropriate attribution or to disguise the source of work.*

- Detection of AI-generated text

At present, the University will not be implementing Turnitin's AI detection tool as the possibility of affecting student outcomes is unknown. This is a decision made in collaboration with many other UK institutions supported by sector bodies such as UCISA and Jisc.

It is important to note that AI detection tools (e.g. Turnitin, OpenAI's classifier, OpenAI GPT2 Output Detector, and GPTZero) are not completely reliable.

- OpenAI acknowledges that its AI classifier, a tool designed to distinguish AI-generated text from human-written text, could only correctly identify "26% of AI-written text (true positives) as likely AI-written, while incorrectly labelling human-written text as AI-written 9% of the time (false positives)." ([OpenAI,](#)

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2023)
- Originality software may not be able to detect academic essays generated by ChatGPT ([Khalil & Er 2023](#)).
- Research has shown that paraphrasing tools (e.g. QuillBot) could affect Turnitin's
  ability to detect AI-generated text ([Ventayen, 2023](#)).
- Generative AI has the potential to generate scientific content that is as accurate as human-written content ([Ma & Yi, 2023](#)).

To use generative AI responsibly, it is necessary to assess the accuracy of its detection, including the likelihood of it generating false positives. The University would also need to ensure the AI-detection tools are compliant with GDPR, data privacy and intellectual property rights. At present, third-party AI-detection tools are not considered legitimate means to test students' work.

Where to find guidance?

The [Academic and Learning Enhancement (ALE)](#) team offers a series of [developmental](#) [workshops for staff](#) related to generative AI in teaching, learning and assessment.

Generative AI workshops:

- [Assessment in the age of ChatGPT and generative AI (1): Where are we and what next?](#)
- [Assessment in the age of ChatGPT and generative AI (2): How to make my questions more "AI-resilient"?](#)
- [Assessment in the age of ChatGPT and generative AI (3): How to redesign my assessment?](#)

Workshop topics include:

- Developing an understanding of the strengths, weaknesses, opportunities and threats of generative AI
- Considering how other institutions have responded
- Examining guidelines for adapting to generative AI in assessment
- Reflecting on the current practice and concerns about generative AI
- Testing different prompts in ChatGPT
- Analysing text generated by ChatGPT
- Discussing how to make essay questions more "AI-resilient"
- Improving assessment with rubrics and marking criteria
- Recognising the importance of assessment design in the age of generative AI
- Understanding the process and documentation of assessment change
- Devising different assessment tasks and achieve a right balance between formative and summative assessment
- Applying learning technology tools to different assessmen types For more information, please email ils-ale@greenwich.ac.uk.

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Useful information

Please visit the [Academic and Learning Enhancement AI webpage](#) for the following articles which will provide information about adapting to generative AI in teaching, learning and assessment:

- ChatGPT and generative AI: Background and SWOT analysis
- Adapting to generative AI tools in teaching, learning and assessment

If you have any questions, please contact the [Academic and Learning Enhancement](#) team.