

Managing Artificial Intelligence tools in Education and Assessment at FPN

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1. INTRODUCTION

At the beginning of 2023, a new tool based on Artificial Intelligence (AI), called ChatGPT was released for use by the broad public. Although it might be a valuable tool to be used in education and assessment in the long term, it poses some short-term threats to the intellectual ownership of answers provided by students during non-proctored examinations. Nevertheless, we believe that most students are eager to learn, understand academic integrity and ethical responsibilities, and are committed to upholding them. As a result, we assume that most students have no intention of *illegally* using AI-generated work in exams. However, the rapid advancements in AI, including tools like ChatGPT that we will focus on in this note, call for vigilance in the design of education and exams.

Drawing on various sources, including an FSE document by Vliegthart and Bevers, a FASoS document by the Board of Examiners, and an SBE document by Straetmans, Tempelaar, and Vluggen, we present some key considerations and guidelines for our faculty as well as discussion points.

2. WHAT IS CHATGPT?

GPT, short for Generative Pre-trained Transformer, is free software that generates answers to questions based on a vast knowledge database, with high accuracy and readability that often resembles human-written texts. A user can enter prompts in text form as in a chat, hence ChatGPT. It can create summaries, answers to essay questions, papers, programming code, and more. Additionally, it can adjust or reformulate existing text and provide suggestions for improving one's phrasing.

Based on the transformer architecture, ChatGPT is a type of deep neural network specifically designed to process sequential data, such as text. It uses advanced mechanisms to analyze the relationships between words in a sentence and generate a context-aware representation for each word. These representations are then used to generate the final text output. Training on a large corpus of text data, ChatGPT can learn general knowledge and patterns in language, improving as it receives more data.

The new version based on GPT 4 has been released a short while ago, being much more precise in its answers and even more difficult to detect as AI-written content.

3. OUR CURRENT CHALLENGE

While ChatGPT cannot reason or produce original knowledge, it can combine information from multiple sources confidently and convincingly, often appearing to understand and reason like a human. This brings both challenges and opportunities for education and assessment. Our current challenge is ensuring that students still acquire the necessary knowledge and skills, regardless of whether they are allowed to use ChatGPT.

UM's Vision on Assessment may provide guidance on how to achieve this goal by focusing on individual and collective learning, which assessments can foster. At the same time, AI-generated text can offer interesting teaching opportunities and innovative assessments, enabling educators to expand and enhance the learning experience.

ChatGPT and similar AI tools may be treated the same way as calculators in schools. It could be allowed for some assignments and prohibited for others, assuming that students will be tempted to use it unless explicitly supervised by invigilators.

4. CHATGPT FOR ANSWERING EXAM QUESTIONS OR FOR WRITING (PARTS OF) ASSIGNMENTS

As stated above, students may be tempted to use ChatGPT to write their papers, answer online exam questions, generate programming code, and even go so far as to submit the AI-generated work as their own. However, when the rules state that AI tools are not allowed for a given assignment or exam, using them anyway amounts to academic fraud, as it does not reflect the students' actual knowledge or skills. Students cannot legitimately earn ECTS credits for work that is not their own. In that case, the BoE may impose one of the disciplinary measures set down in the Rules & Regulations if it establishes that a student has committed fraud in any exam or exam component.

Students must understand the importance of acquiring knowledge and skills through their own efforts and be held accountable for their work. While AI tools like ChatGPT can be valuable aids for

learning, they should never replace the hard work and critical thinking essential for academic success.

5. SOME SHORT-TERM GUIDELINES (ACADEMIC YEAR 2022-2023)

As ChatGPT and other AI tools continue to evolve, it is important to note that solutions or fixes that are effective today may not be sufficient in the future. Also, we acknowledge that new insights will emerge, and our recommendations and guidelines will be reviewed and updated regularly to remain relevant and effective. Therefore, this document is intended as a living resource.

We encourage all teachers to experiment with ChatGPT to understand AI's capabilities and limitations. Please try it yourself using OpenAI's playground ([Playground - OpenAI API](#)) or the chat version ([New chat - OpenAI](#)).

If you need support in adapting your assessment to the new AI reality (e.g., adapting exam questions) or have feedback on the guidelines (we would really value this), don't hesitate to at toetscommissie-fpn@maastrichtuniversity.nl.

5.1. How could you adapt your assessments to ChatGPT to ensure the quality of education and assessment?

5.1.1. Important information about the assessment methods of your course

Please be aware that altering the assessment details provided in the nominal plans is not permitted without permission from the program director and the BoE. For example, suppose you have indicated in the nominal plans to administer a take-home exam. In that case, you are not allowed to replace it with a written exam at the MECC without *timely* consulting with the program director and the Board of Examiners and having received their official approval.

5.1.2. Scenario 1: Students are encouraged to use AI tools as part of the course design or assessment

- Be as precise as possible about the extent and context in which students are expected to use (or not use) AI tools;
- Ensure that the required ILOs are still evaluated through the work requested from students rather than by AI. For example, by asking students to criticize AI-generated responses or compare them with their own answers or specific sources;
- Request students to label AI-generated text in their assignments or exams explicitly (please see also the last bullet point of section 6.1.).
- Run each exam question (ideally several times) through ChatGPT during the exam design process. This will provide a baseline for what an AI-generated answer could look like.

5.1.3. Scenario 2: Students are prohibited from using AI-generated content in assignments or assessments.

5.1.3.1. General recommendations

- To avoid confusion, include a statement in the course syllabus and exam instructions prohibiting the use of ChatGPT or similar text/image-generating AI tools in assignments, presentations, or exams;
- The following statement would be sufficient: *“Unless explicitly authorized, any text generated by AI and used to answer exam questions or assignments is considered commissioned work, and as such, it constitutes plagiarism and/or fraud. Accordingly, such work will be subject to sanctions in accordance with the Rules and Regulations (for more information, please see www.askpsy.nl)”*;
- If you have reasonable doubt that a student handed in an exam that an AI wrote, don't hesitate to [contact the Board of Examiners bofex-fpn@maastrichtuniversity.nl](mailto:bofex-fpn@maastrichtuniversity.nl). They can classify AI-generated exam work as plagiarism (commissioned work) and/or fraud (an action that makes it impossible to evaluate the student's knowledge).

5.1.3.2. Recommendations regarding assessment design

- Avoid using take-home exams and instead organize onsite exams within a controlled (proctored) environment (however, please see 5.1.1.);
- Require students to integrate content from the module into their written assignments, with explicit references indicated in the assignment;
- Ask students to explain why they agree or disagree, using content from the module;
- Ask follow-up questions to gauge students' understanding. To confirm whether students genuinely grasp the topics and sources they used in their assignments, ask them to explain their answers or provide additional insights;
- Encourage students to peer review written assignments based on content from the module;
- Consider adding non-written components, such as presentations, posters, or debates, to written assignments produced at home (e.g., a paper).
- Run each exam question (ideally several times) through ChatGPT during the exam design process. This will provide a baseline for what an AI-generated answer could look like.

5.1.3.3. Recommendations regarding assessment grading

- Read the exam answers with extra attention. As of now, honestly said, you are probably not able to reliably detect AI-generated content. It might be possible to detect *unedited* AI output, but it is currently not possible to reliably detect *hybrid content*, meaning content that was produced by an AI and then partly edited and complemented by students;
- Verify (at least randomly) academic sources, as ChatGPT can create fake DOIs. As APA referencing is used across all our programs, we strongly recommend that graders check at least in part the authenticity of a reference list when evaluating student work;
- Watch out for unusual language and formatting. Some sections of texts produced by AI tools, such as ChatGPT, might differ in style, syntax, spelling, or punctuation from what students typically produce. They might also contain unusual or repeated phrases. So be extra vigilant when assessing the content and reasoning of such sections;
- You can try using plagiarism detection software to check for unattributed sources. For instance, ChatGPT-generated texts could potentially include excerpts from other sources without proper referencing, which plagiarism detection tools, such as Ouriginal, can help identify. However, as of now, chances are very slim that Ouriginal detects AI-generated

content (let alone hybrid content) as plagiarism because ChatGPT reformulates every output. We tried it several times, and Ouriginal did not detect AI-produced content one single time;

- There are various AI detection tools available on the internet. However, they do not identify hybrid content (which is expected to be the most common form of content used by those students who would submit AI-generated content as their own).

6. A LONGER-TERM OUTLOOK (AS OF THE ACADEMIC YEAR 2023-2024)

Below, we provide some recommendations for modifying your module and/or its assessments to accommodate ChatGPT. Please note that these suggestions are not mandatory and that some may simply reinforce the educational and assessment principles that should already exist within a PBL system based on CCCS and UM's assessment vision. As a possible future outlook, these suggestions might help think about a prospective strategy to tackle the *illegal* use of AI tools in education.

6.1. Adapting your module to AI tools to ensure the quality of education and assessment

- Develop teaching and learning activities promoting project-based work and fostering critical thinking, creativity, and collaboration;
- Encourage students to apply theoretical concepts to recent case studies and analyze them from a critical perspective;
- Teach students to integrate and analyze different sources critically rather than simply summarize them;
- Encourage students to select and explain key quotes from their readings and discuss how they capture the essence of the material;
- Foster reflection by asking students to consider how course materials relate to their personal experiences or relevant cases based on their age group, country, identity, or area of expertise;
- Have students submit their AI-generated output and the prompts they used and encourage them to reflect on both. Effective use of AI tools, such as ChatGPT, requires a good understanding of the subject matter, and this reflection will enhance their learning experience. However, be aware that ChatGPT also offers the possibility to generate tailored prompts.

6.2. Reducing the risks of using AI tools illegally in assessments

- Ensure diversity of assessments within each program. Starting from the academic year 2023-2024, we advise program coordinators that a large portion (preferably at least 30%) of a program's assignments must have full student identity proof. Such assessments include proctored exams (e.g., MECC Exams using Testvision) and presentations. Remember that you can adapt nominal plans once a year when you receive them. Please consider doing so.
- Monitor different stages in producing longer papers (e.g., a thesis) by implementing in-between presentations. The Board of Examiners highly recommends, e.g., a research proposal or thesis presentation, including the possibility for students to ask questions to ensure the integrity of the student's work.

7. RECOMMENDED LITERATURE

- <https://www.theguardian.com/technology/2022/dec/04/ai-bot-chatgpt-stuns-academics-with-essay-writing-skills-and-usability>
- <https://educationalist.substack.com/p/lets-get-off-the-fear-carousel>
- <https://activelearningps.com/2023/01/17/the-robots-are-coming-and-theyre-writing-essays/>
- <https://www.npr.org/2023/01/09/1147549845/gptzero-ai-chatgpt-edward-tian-plagiarism>
- good-enough-for-journals-just-as-some-ban-it-197762?utm_source=The+Abstract&utm_campaign=484d365d22-EMAIL_CAMPAIGN_SPRJ_Abstract_JAN23_COPY_01&utm_medium=email&utm_term=0_9e1c242ede-484d365d22-343149889
- <https://3starlearningexperiences.wordpress.com/2023/01/31/chatgpt-what-teachers-need-to-know/>

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