

**Luiss**

Undergraduate School and Graduate School

# The Use of Generative AI Tools in Higher Education

February 2024

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## Premises

*Generative artificial intelligence (AI) entered the public consciousness in 2022. Tools such as ChatGPT, that can automatically produce text interacting with users in a conversational way, as well as other AI-based software applications for generating images, videos, and presentations, are now widely available, and are likely to become even more widespread and important in the short and long-term future in different contexts.*

*It should be highlighted that many of the software-produced artifacts are rather difficult to distinguish from those written by humans. However, these systems can be prone to what are technically defined “hallucinations” confidently outputting incoherent or untrue responses, making it hard to rely on them without a critical analysis of their output.*

*Despite Luiss encouraging students and professors to experiment with AI tools in didactics, in order to promote a critical approach to generative AI tools in the context of assessment and final dissertation, a set of guidelines are offered. Moreover, some examples of activities and tips to follow in teaching and learning, some limitations to the use of the tools, and some suggestions to mitigate the risk of cheating or non-learning are illustrated.*

## 1. Guidelines for assessment and final dissertations

The increased use of AI-assisted authoring tools such as ChatGPT to generate essays, surveys, and reports has the potential to undermine academic integrity. Nonetheless, the use of artificial intelligence systems does not automatically constitute academic dishonesty: it depends on how the tools are used. As an example, ChatGPT and similar applications could help reluctant writers generate a rough draft that they can then revise and update. Used in this way, the technology can help students learn. The text could also be used to help students acquire the skills of fact-checking and critical thinking since the output from ChatGPT often contains factual errors.

Given this, in Luiss, the employment of AI tools needs to be clearly referenced by the students in the submitted text (assignments, final written exams, and final thesis), even if the machine-generated content has been modified by the student. An example of such references is:

“The following definition relies on ChatGPT’s response to the question “What is authority?” and has been generated on 5/4/2023.”

In all cases, using AI for presentation, source material, prompts and coding activities should be clearly identified, so that similar output could be replicated. Such details may be placed in footnotes, citations, or supplements as appropriate.

Students always remain responsible for factual errors and false references in their assignments, even if these have been provided by AI tools that were properly referenced. The instructor might decide to downgrade the assignment or thesis accordingly in such instances.

Failure to include proper citations will be treated as equivalent to plagiarizing content from other sources. Nevertheless, if the instructor intends to prevent students from using such tools, they should consider evaluating students using alternative modes of assessment (e.g., oral assessments, pen-and-paper tests).

## **2. Activities and tips for teaching and learning in higher education**

### **2.1 Learning and writing assistance**

Faculty members can use ChatGPT (or similar tools) to give students personalized written feedback by providing a prompt as a writing assignment and having the model analyze it. ChatGPT can make suggestions for revisions, including grammatical and style corrections, resulting in a personalized experience.

### **2.2 Example generation and concept explanation**

Students can use ChatGPT to get an easier explanation of a general concept, to have a transcript of an explanation reworded for better comprehension, and more. By including a specific concept and relevant text, ChatGPT can help Faculty generate an explanation, or an example tailored to the class and their level of understanding.

### **2.3 Discussion and debate facilitation**

Faculty members can use ChatGPT to produce questions and suggestions pertaining to the conversation topic, and have students enter their answers using the model. ChatGPT can then analyze the responses and offer recommendations for further comments and questions, promoting the progression of the discussion.

### **2.4 Assignment personalization**

Faculty members can use ChatGPT to design small assignments or rubrics that can be edited to meet the course requirements. Moreover, it can assist the Faculty in generating personalized exams or quizzes tailored to each student's specific needs and abilities. For instance, the model can be useful for creating different text versions on the same topic, to encourage peer comparison and evaluation.

### **2.5 Brainstorming and content creation**

ChatGPT can be used to quickly brainstorm ideas and generate concepts for lectures or assessments. By using the model to produce outlines of a lecture series or to identify potential methods of assessing knowledge about a topic, Faculty can use these starting points to craft a syllabus or lesson plan for

upcoming courses. Students can also use ChatGPT to brainstorm topics for a research paper or to review/edit the model's response to a prompt, either individually or in groups.

## 3. ChatGPT limitations

### 3.1 Lack of recent knowledge

The information available on ChatGPT is limited to data available on Internet up until 2021 (for the free version ChatGPT3.5. ChatGPT Plus and ChatGPT Enterprise users can access the internet). ChatGPT3.5 version does not have knowledge of recent events and of experiences or discussions that occurred outside of the digital realm, i.e., including those that take place in a classroom setting.

### 3.2 Lack of references

ChatGPT may struggle to address specific works or to provide relevant sources to support its answers. Furthermore, it might also generate fictional references when asked to validate its responses.

### 3.3 Potentially inaccurate

ChatGPT can provide credible answers on a range of topics, however, it may sometimes produce plausible but incorrect or meaningless responses. This is due to the model's training, which is based on a vast amount of text, that can contain biases and inaccuracies that are reflected in the model's responses because of the prevalence of those patterns.

### 3.4 Overconfident

ChatGPT shows high confidence in delivering answers to questions. However, it may overlook alternative solutions that might be more accurate. Moreover, there is no indication of the probability that the answer provided by the model is the best one for a specific question. For example, ChatGPT may provide baseless justifications for incorrect statements without recognizing their falsehood. Additionally, when faced with a vague query, the model often guesses what the user meant to provide an answer, thus increasing the possibility that it is not correct, rather than asking for some clarifications.



## 4. Suggestions to mitigate risk of cheating/non-learning

### 4.1 Discuss academic integrity with students

Outline what constitutes and the importance of ethics and academic rigor: describe what it is meant for original work and plagiarism in your syllabus;

If students might be allowed to use AI in some assigned tasks, explain the learning value you aim to obtain from students by performing tasks with AI help and you may ask them to explicitly refer to the model when used in their assignments.

### 4.2 Consider flipped classes

Ask students to read, view, and study material at home, and then display, demonstrate, and perform in class;

Include short assessments such as in-class quizzes, cold-calling activities, and tests, making them brief, frequent, and, if possible, unplanned. The purpose is to evaluate students' level of understanding, reward their attendance, and provide them useful instant feedback on their learning progress.

### 4.3 Ask for specifics and references

Encourage students to analyze specific topics, instead of asking them to write about general arguments. ChatGPT is much more effective in composing general statements rather than in addressing perspectives with supporting references.

Ask students to refer to course materials and class discussion. You can also provide offline materials and sources that students can use, such as field specific journal articles that require authentication, data collection and analysis when relevant, which would be impossible for ChatGPT to access.

### 4.4 Use current events

Challenge students to relate to recent events. As ChatGPT3.5 information is limited to Internet data until 2021, evaluations regarding facts or articles published after that date may not be accurately written by the AI.

#### **4.5 Request drafts and production reports**

Break down larger assignments into several sequential steps with due dates for the final deliverables: outlines, notes on research papers, drafts. Scaffolding their workload offers instructors the opportunity to give feedback and check progress and changes discouraging one shot queries to generative AI tools to produce content. Moreover, by balancing tasks into smaller parts, students are not only less likely to cheat, but more likely to create stronger final products.

Ask students to detail the process followed to write a report or survey, whether they have used AI generative tools, what queries have been entered, and their post-processing activities, pointing out the differences between the submitted assignment and the automatically generated text. For example, students could be required to include a short cover letter with their writing, giving them an opportunity to reflect on what they have accomplished, and through which means.

#### **4.6 Use review processes**

Ask students to compare essays, papers and other documents generated by ChatGPT against other reliable sources of information.

Produce texts with ChatGPT and ask students to capture common sense, mistakes, inaccuracies, shallowness, or the lack of depth and insight therefore encouraging them to act as “critical readers”.

Ask students to work on editing and commenting peers’ outputs as part of the assessment/writing process, so that they must reflect on other students’ writing. Iterative development, when combined with a brief reflection on revision feedback, helps students strengthen their understanding and enable to develop their thoughts on the topic more fully.

#### **4.7 Consider other formats**

Consider converting some parts of the written assignments into alternative multimedia formats, such as a recorded video, podcast, speech, visuals, or other creative formats. This variety will make it more challenging for ChatGPT to complete the assignment effectively.

Design exams tasks where students can showcase their knowledge and learning. For example students should be asked to take a formalized position on a specific topic defending their idea, perspective, and point of view.

#### **4.8 Move from product to process**

Promote class assessment activities, moving from the “output” to the “process” and enhance the importance of active participation in class through class activities, group work in class etc. as a significant element of the evaluation process and a relevant component of the final grade.

#### **4.9 Collect students' impressions**

Challenge students to submit a reflection or personal impressions about their learning experience from completing the assignment. They can identify the most difficult and most fulfilling parts of the project and give useful advice on what they would have done differently. By focusing on the effort involved and stimulating reflection on the importance of learning itself, students will have less incentive to act academically dishonest.

## 5. Activity examples provided by ChatGPT

“How can ChatGPT be used for think-pair-share activities?”

ChatGPT can be used for think-pair-share activities in several ways:

**Question generation:** ChatGPT can be used to generate thought-provoking questions, which can then be used as the basis for think-pair-share activities.

**Group discussions:** ChatGPT can be integrated into virtual group discussions, allowing students to share ideas and receive real-time feedback from the model.

**Writing prompts:** ChatGPT can be used to generate writing prompts, which can then be used to support think-pair-share activities. Students can write their responses, share them with a partner, and receive feedback from both the model and their partner.

**Virtual case studies:** ChatGPT can be integrated into virtual case studies, providing students with additional information and support as they work through real-world scenarios.

**Presentation support:** ChatGPT can be used to support student presentations, providing real-time feedback and suggestions as students present their ideas.

**Note:** These activities should be used in conjunction with human teachers to ensure that students receive comprehensive and accurate information, and to promote critical thinking and independent learning.

“Can you better explain the virtual case studies?”

Virtual case studies are educational activities that simulate real-world scenarios, allowing students to apply their knowledge and skills in a practical context. By integrating ChatGPT into virtual case studies, students can receive additional information and support from the model as they work through the case.

For example, a virtual case study in a business class might involve analyzing a company's financial statements, marketing strategies, and competitive environment. ChatGPT can provide additional information on industry trends, best practices, and relevant data to help students make informed decisions and analyze the case.

The use of ChatGPT in virtual case studies can provide several benefits, including:

**Real-world learning:** Virtual case studies provide students with hands-on experience and allow them to apply what they have learned in a practical setting.

Increased engagement: By receiving real-time feedback and suggestions from ChatGPT, students are more likely to be engaged and motivated to work through the case.

Personalized learning: ChatGPT can provide individualized support, tailoring its responses to each student's needs and abilities.

Time-saving: ChatGPT can answer questions and provide information quickly, allowing students to move through the case at their own pace.

## Further readings on the subject in Higher Education

Alarmed by A.I. Chatbots, Universities Start Revamping How They Teach (2023, January). The New York Times. <https://www.nytimes.com/2023/01/16/technology/chatgpt-artificial-intelligence-universities.html>

AI transformers like ChatGPT are here, so what next? (2023, February). THE Campus Learn, Share, Connect. [https://www.timeshighereducation.com/campus/collections/ai-transformers-chatgpt-are-here-so-what-next?utm\\_source=newsletter](https://www.timeshighereducation.com/campus/collections/ai-transformers-chatgpt-are-here-so-what-next?utm_source=newsletter)

AI chatbots will be a game-changer for educational assessment. (2023, January). Newsroom. <https://www.newsroom.co.nz/ai-chatbots-will-be-a-game-changer-for-educational-assessment>

AI Unleashed | Artificial intelligence and the future of higher education. (2022, December). Inside Higher Ed. <https://www.insidehighered.com/blogs/higher-ed-gamma/ai-unleashed>

## Useful Links

Read about it on Open AI: [ChatGPT: Optimizing Language Models for Dialogue](#)

See how it works on YouTube: [What is ChatGPT? OpenAI's Chat GPT Explained](#)

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