

# **Guidelines for good practices in the use of Generative AI for teaching in the Miguel Hernández University of Elche**

September 2024

**Rector Delegation for Digital Transformation of the MHU**



*These guidelines have been developed in the framework of the collaboration agreement between Generalitat Valenciana, through Presidencia, and Universidad Miguel Hernández de Elche for the promotion of activities related to transparency, access to public information, good governance, open data, and institutional integrity during 2024.*

# Índice

ChatGPT and large language models .....	3
Generative AI.....	3
Reliability of generative AI .....	4
Use of Generative AI in Universities .....	5
• Guidelines on the use of AI by student body and faculty at MHU .....	5
Alternative Evaluation Approaches .....	6
Use of alternative generative AI .....	7
References .....	7

# ChatGPT and large language models

ChatGPT is an artificial intelligence large language model ([LLM](#)) developed by OpenAI. It is an advanced chatbot designed to maintain natural conversations and answer questions consistently and plausibly.

The operation of ChatGPT is based on generative AI algorithms trained on massive datasets, including millions of web pages, books, and articles. These algorithms analyze patterns and relationships between words to produce consistent responses. The text generation process is iterative: at each step, the model determines which word or symbol is most likely to follow based on the context provided by the user.

The training of ChatGPT involves significant costs due to the enormous amount of data and computational power required. It is estimated that the cost of training models such as GPT-3 (with 175B parameters), on which ChatGPT is based, was between \$4-5 million (see [Visual Capitalist](#)).

ChatGPT was launched on November 30, 2022, by OpenAI, a technology company with considerable investment from Microsoft. Since its launch, it has had a remarkable impact in various fields, including teaching. It has transformed teaching and assessment methodologies in education, driving the need to integrate new technologies and adapt to generative AI tools.

The launch of ChatGPT has led to an examination of teaching practices. Educators have developed new strategies to use AI capabilities, such as generating drafts, offering personalized tutorials, and encouraging student self-reflection. At the same time, the need has arisen to address ethical and academic integrity issues related to the use of AI. Many educators have begun incorporating ChatGPT as a learning tool, while others express concern about its potential misuse.

ChatGPT offers a free version, allowing users to interact with the basic model. There are also paid versions, such as ChatGPT-4o, which provide access to more advanced models and enhanced capabilities. New versions with additional functionality and greater accuracy are expected to be released, continually adapting to user needs and technological advances. Other companies have launched their chatbots, such as Google with Gemini, which integrates with Google Workspace products (such as Gmail, Google Docs, or Google Sheets), or Anthropic with the chatbot Claude 3.5, which defines itself as an LLM model trained to be a helpful, honest and harmless assistant in a conversational tone.

## Generative AI

Generative AI is a type of artificial intelligence that can create new and original content from training data. It serves to produce various types of content in an automated way.

The main functions include:

1. Text generation: It can write articles, stories, scripts, etc.
2. Image creation: Produces original images based on textual descriptions.
3. Music composition: Creates complete melodies and musical pieces.
4. Design: Generate graphic designs, logos, or even architectural plans.

5. Programming: Can write code and develop software.
6. Translation and natural language processing: Translates between languages and understands language context.
7. Data prediction and analysis: Generates predictions based on existing data patterns.
8. Video and animation creation: Produces original audiovisual content.

A generative AI works through several key components and processes. It starts with training using large data sets relevant to its task, such as text, images, or sounds, from which it learns patterns and features. It employs complex neural network architectures, such as Deep Neural Networks ([DNNs](#)), Transformers ([GPTs](#)), or Generative Adversarial Networks ([GANs](#)), which allow it to capture complex relationships in the data.

The generation process uses what is learned to create new content similar but different from the original, enabling generation from scratch or complete partial content. Sampling techniques such as temperature sampling or kernel sampling are employed to control the randomness and creativity of the outputs.

Many systems use iterative processes to improve the quality of output gradually. In addition, these AIs can be tuned for specific tasks or particular styles using techniques such as [fine-tuning](#). They often allow user input to guide or modify the generation process, increasing their versatility and applicability in different contexts.

## Reliability of Generative AI

The reliability of generative AI is a complex and nuanced topic. In general, these AIs can be very useful and produce impressive results, but they also have limitations and risks that are important to consider.

On the one hand, generative AI can be very reliable for specific tasks:

- Generating creative content such as images or text
- Assistance in programming or data analysis tasks
- Natural language translation and processing

However, several aspects can affect its reliability:

1. **Data bias:** If the training data contain biases, the outputs will reflect these.
2. **Lack of accurate understanding:** Although they can generate coherent content, they need a proper understanding of the real world.
3. **Hallucinations:** They may generate false or inaccurate information, especially when asked for something outside their knowledge base.
4. **Inconsistency:** Responses may vary between different performances.
5. **Lack of up-to-date context:** Their knowledge is limited to the date of their last training.
6. **Ethical and legal issues:** Problems may arise from an ethical point of view and violations of regulations, particularly regarding data protection and intellectual property.

It is, therefore, crucial to use generative AI with judgment, verify information when necessary, and understand its limitations. Its reliability depends mainly on the use context and how it is implemented and monitored.

## Use of Generative AI in Universities

Generative AI is significantly transforming the educational scenario in universities, offering a variety of applications that can enhance teaching and learning.

**Students** can enhance their learning through reinforcement with generative AI tools that will offer help in answering questions and getting explanations for complex topics. Students could use generative AI to reinforce and learn complex issues, not just to get answers and use them directly in their work. Other uses of generative AI could be to support writing drafts of academic papers or scientific articles, or translating materials into different languages, or answering exams from previous years, or making concept maps. Generative AI also allows the creation of accessible materials for students with disabilities, such as text-to-speech, and vice versa.

**Professors** can use generative AI to support the creation of content or the adaptation of scientific materials to different levels of student body understanding, the automation of administrative tasks such as grade management, or the analysis of student performance data to identify areas for teaching improvement. It can also help create interactive and/or gamified content that motivates student body learning.

Generative AI is here to stay among us. Instead of banning it, we should assume that it is one more tool that will improve learning and teaching, as it has already happened with the arrival of other tools such as calculators, personal computers, cell phones, or the Google search engine.

Therefore, we must consider the following issues with the use of generative AI at MHU:

- We must encourage the ethical and responsible use of AI, avoid plagiarism, and guarantee the authenticity of academic work.
  - Data privacy is fundamental in any interaction with any AI.
  - The technology gap should be avoided whenever possible, ensuring students have equal access to AI technologies and avoiding inequalities in academic performance.
- 
- **Guidelines on the use of AI by student body and faculty at MHU**
    1. In the context of the use of Generative AI, the MHU student body and faculty are strictly prohibited from sharing any personal data with it. They must also ensure that their questions and content do not contain personal data or information that could result in the inference or deduction of personal data.
    2. MHU student body and faculty should be aware that personal data includes but is not limited to, personal identifiers in text, photographs, audio recordings, video, or any document or file containing personal data. In addition, it should be considered that combining different types of data can help identify individuals.
    3. All of the above is categorically prohibited in generative AI applications, and compliance with these restrictions is mandatory for the MHU student body

- and faculty.
4. In this regard, and if the use of data is necessary, the MHU student body and faculty must make use of completely anonymous data<sup>1</sup>.

## Alternative Evaluation Approaches

The literal use of the answers generated by the generative AI by the student body in academic work or final work of a degree or master's degree can be considered as the use of illicit or fraudulent methods according to article 9.4) of the Student Evaluation Regulations of the Miguel Hernández University of Elche.

However, the use of AI for teaching cannot be radically prohibited, as other uses of AI are perfectly lawful, as described above.

Given this current scenario that we are facing with the use of generative AI in teaching, we must find alternative approaches to evaluating our students where AI is legitimately used and academic integrity is guaranteed.

The following recommendations for the use of AI by the **student body** in their learning process and by **faculty** in their teaching process can be considered as a guideline of good practices in the use of generative AI:

1. **Academic works should not be easily generated by a generative AI:** a work that a generative AI can write will not allow the student to be evaluated. Faculty should test in advance whether a generative AI writes a work correctly. An appropriate assessment test should:
  - Be sufficiently specific: not limit the exposition of an overly generic topic that can be easily copied or generated.
  - Higher-order cognitive skills are required: analyze, compare, justify, criticize, and not just transfer existing information.
  - Involve practical tasks, such as collecting testimonies or real data, processing or elaborating on the data, analyzing specific cases, etc.
2. **Evaluate the process, not only the result:** To monitor the work adequately during its realization, without waiting until the final delivery of the task, with periodic reviews in which the student body informs the faculty about the elaboration process.
3. **Include self-reflection components in the evaluation:** the student must answer questions regarding their learning and the work done:
  - How have you planned and structured the work? What problems have you encountered, and what decisions have you had to make?
  - What did you learn from the work? What new knowledge or skills did you acquire? What previous knowledge or skills did you need to apply?
4. **Assess the appropriateness of the written work to the learning objectives and consider other assessment options and strategies:**

---

<sup>1</sup> In the context of the GDPR, anonymized data is data that cannot be associated with an identified or identifiable person, due to de-identification or techniques that prevent re-identification. To be considered truly anonymous, data must be irreversible, impossible to identify directly or indirectly, and remain anonymous in any context. If these criteria are met, the data cease to be personal and are not subject to the provisions of the GDPR.

- Consider other types of evaluable work: videos, presentations, concept maps, or infographics.
  - Consider other assessment strategies, such as project-based learning.
5. **Explore with the student body the possibilities and limitations of technology:**
- You can work with the student body using information generated by a generative AI on subject topics, identifying errors, or verifying data.
  - Especially in subjects focused on writing texts or computer code, one can integrate generative AI tools into the regular work cycle.
  - For example, the student body could be asked to use a text or code generated by generative AI and to explain and justify the changes they had to make to get to their final version.

## Use of alternative generative AI

Trying different Generative AIs, such as ChatGPT, Gemini, Copilot, or Claude, will allow you to understand better this technology's scope and limitations in your field of expertise. However, remember that this is an external service to the university, and you will have to accept the processing of personal data that it may perform. Therefore, it should not be used with students in mandatory teaching activities.

In teaching activities in particular, the application we recommend is Gemini from Google or Copilot from Microsoft using the MHU corporate email account. If you use Gemini or Copilot with your MHU account, both Google and Microsoft guarantee that they will not save conversation data, delete it at the end of the session, and not use it to train their AI models.

ChatGPT or Claude do not offer MHU users the same level of protection. Please avoid sending personal data or sensitive information in your interactions with any Generative AI.

## References

- [ChatGPT: què és, per a què serveix i quines conseqüències té per a la docència \(UJI\)](#)
- [Guía para integrar las tecnologías basadas en inteligencia artificial generativa en los procesos de enseñanza y aprendizaje \(UNED\)](#)
- [IA generativa: herramientas útiles para el personal docente \(UOC\)](#)
- [Guías sobre inteligencia artificial y educación \(URV\)](#)
- [Teaching with AI \(OpenAI\)](#)
- Practical AI for Teachers and Students (Mollick, E. & Mollick, L.) ([YouTube](#))
- [A Teacher's Prompt Guide to ChatGPT aligned with 'What Works Best' \(Andrew Herft\)](#)

These guidelines have been developed with the support of generative AI under the supervision and review of the author.

These guidelines have been reviewed by the MHU Data Protection Delegate.

These guidelines have been created by Federico Botella under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International license](#).

