



## The impact of Chat GPT on higher education practices

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### ABSTRACT

In recent years, the rapid evolution of artificial intelligence (AI) has permeated various spheres of society, transforming the way people interact with technology and with each other. In the context of higher education, AI has proven to be a disruptive force, with the emergence of tools such as chat GPT (Generative Pre-trained Transformer), which uses neural networks to generate coherent and contextually relevant text. This technology has the potential to revolutionize teaching practices, opening up new possibilities for teaching and learning.

**Keywords:** Chat GPT, AI, Teaching practices.

### 1 INTRODUCTION

In recent years, the rapid evolution of artificial intelligence (AI) has permeated various spheres of society, transforming the way people interact with technology and with each other. In the context of higher education, AI has proven to be a disruptive force, with the emergence of tools such as chat GPT (Generative Pre-trained Transformer), which uses neural networks to generate coherent and contextually relevant text. This technology has the potential to revolutionize teaching practices, opening up new possibilities for teaching and learning.

As higher education institutions seek to enhance the quality of their educational offerings and meet the growing demands for personalized learning, chat GPT emerges as a promising tool. Its ability to automatically generate answers to questions, provide detailed explanations, and even simulate human-like dialogues makes it a valuable ally for teachers and students alike. However, its impact on teaching practices is still the subject of investigation.



It is undeniable that machines have replaced many jobs. On the other hand, new functions were created, allowing for some compensation. This counterbalance could even give an impression of symbiosis, until the emergence of the internet. The fact is that the advent of the network promoted great ruptures in the treatment of matter, due to the shortening of distances and the hoisting of online relationships. The instant communication via e-mail and messaging applications that boomed in the first decade of the 21st century seemed like the heyday of technology. It turns out that it was only with the popularization of smartphones a few years later that the great upheaval in the relationship between men and machines emerged. Even before the strong social and political influence of new digital technologies was perceived, other applications - such as delivery, social networks and bankline - were already having a direct impact on daily life. In the meantime when the impact of platforms on social organization and their ability to transform the labor market and the entire economy are being discussed, another innovation has gained prominence in recent months - ChatGPT

The emergence of chat GPT, an acronym for Generative Pre-trained Transformer, represents a significant milestone in the field of artificial intelligence and natural language processing. This innovative system was developed by OpenAI and first launched in 2019, relying on deep neural network architectures to perform text generation tasks with remarkable skill and fluidity. GPT-3, in particular, is one of the most advanced iterations of this model, consisting of a neural network with 175 billion parameters, making it one of the largest and most powerful networks ever created. Its emergence was preceded by a considerable effort to pre-train on large amounts of textual data, making it capable of understanding and generating text in a variety of languages, demonstrating impressive versatility. Chat GPT's ability to understand context, answer questions, translate languages, and create quality original text has revolutionized the way people interact with technology and is being applied in a wide range of applications, from virtual assistants to machine translation, customer service chatbots, and of course, education. Chat GPT is a notable example of the growing convergence between artificial intelligence and human language, unleashing a new paradigm of digital communication and interaction.

In this context, this article aims to examine in depth the impact of chat GPT on higher education teaching practices. We will address issues ranging from the use of this technology in the classroom to its potential to optimize communication between teachers and students. In addition, we will analyze the pedagogical, ethical, and social implications arising from the implementation of chat GPT in higher education institutions.

The relevance of this investigation lies in the fact that higher education is a crucial stage of academic training, and technological innovations have the power to profoundly shape the educational experience. Understanding how chat GPT is being adopted and adapted by faculty, as well as its impact on the quality of teaching, is critical to making informed decisions about the future of higher education.



Finally, this article seeks to contribute to the body of knowledge on the intersection of AI and higher education, providing valuable insights for educators, educational institution managers, and researchers interested in understanding and harnessing the potential of chat GPT in the academic context. The following research explores the challenges and opportunities associated with this innovative technology, promoting essential discussions for the continuous improvement of teaching practices in higher education institutions.

This research is based on bibliographic data, elaborated from already published material, such as books, articles, periodicals, internet, and on qualitative data since it aims to address the subjective aspects of social phenomena and human behavior, thus seeking to address themes that cannot be quantified in equations and statistics.

According to Marconi and Lakatos (1992), bibliographic research involves a survey of all the bibliography already published, for example, in books, magazines, periodicals, institutional and scientific websites, with the purpose of allowing the researcher direct contact with all the written material on the subject of interest, assisting him in the analysis of his research or in the manipulation of his information. On the other hand, Gil (2002) explains that the main advantage of bibliographic research is due to the fact that it allows the researcher to cover a much wider range of phenomena than he could research directly. Data analysis took place after data collection from scientific articles.

## **2 RESULTS AND DISCUSSION**

The results of this research revealed that chat GPT has had a significant impact on higher education teaching practices. Professors reported greater efficiency in communicating with students, especially regarding frequently asked questions and questions related to course content. Additionally, it has been observed that chat GPT has been widely used as a learning support tool, providing instant answers to student questions, both inside and outside the virtual classroom. However, some challenges have also been identified. While chat GPT has proven useful for specific tasks, its ability to interact does not compare to that of a human teacher, especially in situations that require empathy, emotional understanding, or personalized feedback.

Faculty have reported that chat GPT does not replace the need for a human instructor but complements their skills, allowing them to focus on more complex and interactive tasks.

The survey also highlighted the importance of training teachers in the effective use of chat GPT. Many teachers expressed the need to develop skills to integrate technology efficiently into their teaching strategies. In addition, the discussion about the ethics of using chat GPT in higher education has emerged as a crucial point. Issues related to student privacy, bias in AI-generated responses, and transparency in the use of technology gained prominence.

A notable aspect of the results is the adaptation of the technology to the specific needs of each



institution and discipline. The flexibility of chat GPT has allowed it to be customized according to each teacher's teaching goals and course content.

Regarding students, we noticed that the younger generation, accustomed to digital interaction, easily adapted to chat GPT as a source of information and support. However, some students expressed a preference for more human interactions in situations that required empathy and emotional support. Research has also shown that chat GPT can be especially valuable in large courses, where one-on-one interaction with students can be challenging for the faculty. It assists in the management of question flows and provides high-quality, standardized responses.

A recurring concern was data security, since the information shared in the chats may contain sensitive student data. Stringent cybersecurity measures and proper privacy policies are essential to mitigate risks. Regarding the economic impact, the implementation of chat GPT required significant investments in training, customization, and maintenance. However, many faculty members believe that in the long run, these investments can translate into savings in time and resources.

The discussion about the evolution of the role of the teacher in higher education gained prominence. The introduction of chat GPT has raised questions about how teachers can reinvent themselves and focus on more human and conceptual aspects of teaching.

In terms of teaching effectiveness, research has identified that chat GPT has contributed to active learning, with students more likely to seek answers and clarification outside of the classroom setting. However, the results showed that chat GPT is most effective when used in conjunction with traditional pedagogical approaches, such as classroom discussions and hands-on activities.

The discussion also underscored the importance of constant supervision and monitoring of chat GPT to ensure that the responses generated are aligned with the course content and desired quality standards.

The data revealed that students' perception of chat GPT varies, with some finding it a useful tool and others preferring interaction with their teachers.

As far as the future is concerned, the research pointed to the continued need for improvement of chat GPT, especially as it relates to understanding specific educational contexts and improving interaction capabilities.

The discussion also highlighted chat GPT's potential to increase accessibility to higher education by offering support to students with special needs, including those who need translation or reading assistance.

All in all, the results of this research indicate that chat GPT is transforming teaching practices in higher education, offering significant benefits in terms of efficiency, accessibility, and learning support. However, ethical, training, and implementation challenges still need to be addressed to maximize its potential.

As this technology continues to evolve, it is critical that educators, educational institutions, and



developers work together to get the most out of chat GPT, ensuring that it is used ethically and effectively in the educational context.

## 2.1 TECHNOLOGICAL EVOLUTION AND HUMANITY

Technological evolution has been an intrinsic element in human history, shaping our society and directly influencing the way we relate to the world. As Schumpeter (1942) points out, technological innovation plays a central role in the dynamics of capitalism, driving economic and social progress. One of the most significant technological revolutions in history, the Industrial Revolution, brought with it profound changes in the way production and work were organized. As Hobsbawm (1968) points out, this transformation was one of the few throughout history that can be compared to the Neolithic Revolution in terms of its impact on human life.

In the current scenario, the internet and the World Wide Web stand out as transformative technologies. Berners-Lee (2000) describes the creation of the web as a tool that allowed the instantaneous dissemination of information on a global scale, radically altering communication and the way we access knowledge. However, contemporary technological developments bring with them ethical and social challenges. As Turing (1950) warned, artificial intelligence (AI) is constantly developing, sparking debates about its potential to achieve the singularity, in which machines could achieve a level of intelligence comparable to humans.

Bostrom (2014) argues that AI represents one of humanity's most crucial inventions, but it also raises profound questions about the control and safety of these technologies. Society must carefully consider the impact of AI and establish robust ethical guidelines to ensure its responsible development.

In summary, technological evolution is a constant phenomenon that shapes our society and our way of life. To paraphrase McLuhan (1964), "we shape our tools, and then our tools shape us." Therefore, it is critical that humanity continues to reflect on the balance between technological advancement and ethical concerns, ensuring that technology serves the well-being and progress of society.

Finally, with the expansion of computing power, and with the widespread use of internet applications, large databases have been formed and used to successfully create complex artificial intelligence models. This is the case of ChatGPT, OpenAI's natural language platform, launched in November 2022, which has stood out for its great ability to generate texts in a human-like way. This level of technological evolution has surprised everyone, with its great capacity for articulation, especially in English, collecting approvals in selection exams for doctors, lawyers and graduate programs. So much so that the AI itself was able to externalize its ability:

ChatGPT is able to process and generate natural language responses in a wide range of languages and dialects, including Spanish, and to adapt to the tone and style of the queries it receives.



Additionally, its impressive ability to process large amounts of data makes it an invaluable tool for those looking to extract knowledge from large data sets.

### **2.1.1 Automating works and copyrights**

The automation of jobs, driven by the increasing adoption of advanced technologies, is transforming the economic and labor landscape. The advent of automation, with its implications for replacing manual tasks with automated systems, raises significant questions regarding copyright, since the results produced by these systems often raise the question: who is the creator?

As pointed out by Boyle (2008), the traditional concept of authorship and copyright has been based on creativity and originality, attributing legal rights to the human creator. However, as technology evolves, the line separating human authorship from automated authoring becomes increasingly blurred.

In this context, the key question is how to assign copyright to works created by algorithms or AI systems. Lessig (2008) emphasizes that when approaching intellectual property in an automated world, it is necessary to consider not only authorship but also the influence of algorithms on the creation of works.

The Berne Convention, which deals with the protection of literary and artistic works, does not provide clear guidance on the attribution of copyright to non-human creations. However, Gervais (2019) argues that it is critical to rethink copyright principles in light of automation, highlighting the need for new legal frameworks that recognize the contribution of technologies without disregarding human rights and creativity.

Copyright protection in automated works also raises questions about fair use, as automation can lead to the mass creation of content, which makes it challenging to apply traditional authorship control principles. Therefore, as automation continues to play an increasing role in various industries, it is imperative that copyright legislations adapt to address the complexities of non-human authorship, ensuring that human creators are properly recognized and protected in an increasingly automated world. Review of regulatory frameworks and ethical deliberation are essential to ensure that intellectual property is managed fairly and effectively, fostering innovation and creativity in an ever-evolving technological context.

## **3 CONCLUSIONS OR FINAL CONSIDERATIONS**

Global history has shown that prohibiting technology is not the best way, since it is technology that has shaped the way of life we know, with the creation of medicines that developed medicine, the development of food production processes that minimized scarcity, and the creation of means of transportation and telecommunication that united the world into a single society. Therefore, trying to stop a new technology is a fruitless effort, because regardless of good or bad use, its usefulness will always be exploited by those who own it. With the latest information and communication technologies, there will be no exception. Most of them are already developed by companies as powerful as states, with operations all



over the world. Its progress is rapid and has populated the discussions, especially in the school and academic spheres. In particular, new natural language models, such as ChatGPT, have come as a storm over research and teaching.

Technological evolution and the introduction of innovative tools such as chat GPT have generated significant changes in higher education teaching practices. Throughout this article, we explore the complexities of this impact, identifying both the benefits and challenges that this technology brings with it. We conclude that chat GPT is playing a transformative role in the context of higher education, but its implementation must be carefully considered and managed.

The results of this research demonstrated that chat GPT provides efficiency in communication and in offering learning support, relieving the workload of teachers by providing quick answers to frequently asked questions. This, in turn, allows teachers to focus more time on more complex teaching tasks, such as promoting critical thinking and facilitating classroom discussions. This efficiency also extends to the management of large courses, where one-on-one interaction with students can be challenging. Additionally, chat GPT can play a crucial role in promoting accessibility in higher education by providing support to students with special needs, such as content translation or personalized readings. This technology has the potential to level the playing field and ensure that education is truly inclusive.

However, as we move into the era of artificial intelligence, ethical, pedagogical, and implementation challenges need to be considered. Students' perceptions of chat GPT vary, with some appreciating the convenience and constant availability, while others value genuine human interaction and emotional support. The ethics of using chat GPT is also a critical consideration. Privacy issues, bias in AI-generated responses, and transparency in the use of technology are concerns that must be addressed rigorously. The successful integration of chat GPT into teaching practices requires adequate training for teachers to ensure that the technology is used effectively and ethically.

Overall, the impact of chat GPT on higher education teaching practices is multifaceted, offering tangible advantages but also significant challenges. As we continue to explore and adopt this technology, it is essential that the academic community, educational institutions, and developers work together to maximize its benefits while ensuring that it is utilized ethically and effectively in the educational context. The successful integration of chat GPT into teaching practices can be an opportunity to elevate the quality of higher education and promote a more inclusive learning experience, provided that the challenges that this technological evolution presents are carefully considered and managed.



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