

## **Considerations of Artificial Intelligence for Higher Education and Implications of ChatGPT for Teaching and Learning**


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Technology development has always been a contentious topic, especially among intellectuals. Some individuals view technology positively as the advancement of numerous technologies is advantageous and ideal for increasing their work efficiency. Yet, it is viewed somehow negatively by others, who claim it has multiple adverse effects on the environment. Recent technological breakthroughs have also been viewed as a threat to human resources because there is a possibility that many vocations would be lost to modern technology. The world is currently fascinated by artificial intelligence.

Artificial intelligence (AI), a cross-disciplinary field in computer science and engineering, aims to create intelligent computers that can mimic human cognitive abilities like learning, reasoning, perception, and problem-solving. The creation of algorithms and systems for artificial intelligence enables them to carry out operations that would otherwise require human intelligence, such as speech and picture recognition, natural language processing, and predictive analytics. There are primarily two types of artificial intelligence: specific or weak AI and general or strong AI. Narrow AI is used to describe systems that are designed for specific tasks like playing chess or identifying faces, whereas general AI indicates systems that can perform any intellectual task that a person can (Russell & Norvig, 2021). The discourse of AI in the present context, particularly in higher education, has heightened after ChatGPT was

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released on November 30, 2022, by AI research and deployment company, OpenAI as their latest series of AI. GPT is an acronym for "Generative Pre-Trained Transformer". ChatGPT became the first very notable public AI chatbot as it reached a million users within five days of its release, while it took two years for Twitter and ten months for Facebook (Erlichman, 2022). ChatGPT created a storm by reaching 100 million users in just two months after being launched (Milmo, 2023). ChatGPT is not a synonym of AI, but it is just a form of AI. It has been a century since the term was used for the first time in Karel Capek's play, "Rossum's Universal Robots in London" in 1961 and when John McCarthy coined the term 'artificial intelligence' for the first time in 1956 (Upreti & Dhugana, 2023). AI has been used in our daily lives when we do biometric attendance in offices, unlocking phones through face recognition, receiving video suggestions on YouTube based on our search history, using google maps, use of different apps in e-commerce and so on. But ChatGPT drew attention especially in the higher education sector among academics.

ChatGPT is a powerful, cutting-edge language model developed by OpenAI that uses artificial intelligence to create new content by learning patterns from existing data that are similar to human writing (Atlas, 2023). Generative AI is being integrated into various fields and industries (Sisinna, 2023), including gaming, entertainment, and product design, since it can create highly realistic and sophisticated content that resembles human ingenuity. Chatbots for customer service, personal assistants like Siri and Alexa, fraud detection in the financial sector, recommendation systems in e-commerce, and picture and speech recognition are just a few examples of AI technologies that are widely employed in a variety of industries (Russell & Norvig, 2021). Since AI has garnered so much attention, people from all walks of life debate its advantages and disadvantages. But many people have enhanced their knowledge and boosted their work efficiency. For instance, the AI tool ChatGPT has shown to be a very beneficial and effective tool for content authors. At the same time, ChatGPT has additionally been perceived as a danger to human resources. People have also speculated that there is a significant risk of a fall in creativity if individuals rely on AI and let the tools do all of their work, especially in the academic sector. This is because people tend to be lazy, and AI not only makes their work simpler but also accomplishes it in a better way as long as the work does not demand human creativity, emotional intelligence, and context sensitivity.

Higher education is rapidly utilizing AI to improve teaching and learning procedures. AI has the potential to customize instructional experiences, automate administrative duties, and enhance student results by improving their learning capacity. AI also holds enormous potential for the future of higher education. AI also makes it possible to personalized learning experiences. However, AI also presents difficulties and sparks questions about equity, privacy, and ethics. Another benefit of AI is that it can make education more accessible to those who have a strong desire to learn new things and develop their abilities, especially in the case of higher education, which is so expensive globally.

ChatGPT generates grammatically sound responses to natural-language queries, and the process by which it develops its output raises doubts about its reliability (Haggart, 2023). The answers could be incorrect and exhibit biased behavior, so it may not be entirely reliable for the students; it could be helpful for those who try to pass off the generated text as the human written text (Clark, 2023). So, the final output is ultimately up to human writers or students to produce. Academics are worried that they may be unable to catch students cheating on their assignments (Haggart, 2023). But the tools to identify AI-generated text have been developed by ChatGPT's inventors, other businesses, and even private individuals. These tools indicate if a text is very unlikely, unlikely, unclear if it is, possibly or likely AI generated texts (Clark, 2023). However, there are some word restrictions. These tools are also in progress. Some are originality.ai, GPTZero, Sapling AI detector, Writer.com, Copyleaks, Classifier, CrossPlag, Content at Scale, AIESO, etc. Now that different schools have reacted to ChatGPT by either outlawing it or adopting it, detecting AI-written material has become a crucial topic of discussion among educators (Clark, 2023). Rapidly developing advanced AI tools, such as Google's AI-powered chatbot "Brad" and new iterations of ChatGPT, are incomparably faster than AI detection software (Farrokhnia et al., 2023). Academics should be aware of and practice such AI-generated text detectors to correct cheating if students are mostly inclined to it.

Farrokhnia et al. (2023) carried out a SWOT analysis of ChatGPT for educational practice and research. The study explored the benefits and opportunities of using a sophisticated natural language model while concluding that a lack of context or a thorough understanding endangers academic integrity, maintains discrimination in the classroom, and causes students' high-order cognitive skills to deteriorate. According to

Farrokhnia et al. (2023), the best course of action would be to think carefully about the matter, use ChatGPT's educational opportunities, and work to lessen its risks to education. In this situation, curricula must be adjusted to include learning objectives, learning activities, and assessment techniques. The transition to high-order learning outcomes necessitates a change in how learning activities are designed.

Indeed, the revolutionary advances in artificial intelligence today are a source of both worry and hope. We are optimistic about using AI for problem-solving functioning, but it has equally drawn the concern of debasing our ethics in knowledge gain through AI-generated text. Chomsky et al. (2023) claim that ChatGPT and other machine learning will struggle to balance creativity and moral reasoning, the quality of true intellect in humans. So humans, especially academicians in higher education, do not have to worry about ChatGPT posing a threat to creativity in learning. Only human intelligence can keep the balance, while artificial intelligence would either over-generate or under-generate, producing unclear and morally objectionable content (Chomsky et al., 2023). AI cannot empathize or reason like a human can (Upreti & Dhugana, 2023). However, more empirical studies and public discussion about the potential and limitations of ChatGPT are crucial.

AI technologies can assist if we use them properly and ethically in the teaching learning process. For instance, using a manual approach requires us to slowly, intentionally, and painstakingly rewire our minds, whereas using AI technologies like ChatGPT can improve learning without going through the rewiring stage or overcoming prejudices. However, if we cannot use AI technologies effectively or rely on them excessively, it will affect our capacities and inventiveness. Furthermore, the use of AI in higher education raises questions about the role of instructors, resulting in job loss and compromising the quality of instruction. In such a case where human resources workers' job security might be at risk, a human, on the other hand, can focus on developing traits like creativity, emotional intelligence, and a growth mindset in this situation, but AI might not be able to. However, it might be argued that technology will always be adaptable and manageable by humans and that we should utilize these tools responsibly to benefit people, the environment, and other living things.

It is crucial to remember that AI is still in its infancy, and, despite significant advancements, it still lags behind true human intellect. The fact that AI systems are

designed to perform tasks within predetermined constraints may prevent them from possessing broad intelligence or common sense. Addressing ethical concerns, transparency, and responsible deployment as AI advances is critical. It's critical to remember that ChatGPT is only one type of language model. Other AI model designs and modifications, such as question-answering models, machine translation models, and sentiment analysis models, were developed expressly for various tasks in natural language processing.

The usage of ChatGPT has raised questions about academic integrity in higher education. Still, there are advantages that ChatGPT can provide for improving student learning and teachers' ability to alter their teaching and assessment practices. (Sullivan et al., 2023). Teachers can use ChatGPT or Google Bard to conduct preliminary research for developing course plans, classroom activities, rubrics for assessment, provide several topics for assignments or project works, and give critical feedback. The students can utilize it to simplify the abstract and difficult topics for their understanding, create outlines and elaborate ideas through the samples from ChatGPT. Students can explore the literature or research work from the information given by ChatGPT by posing a few questions. However, Sullivan et al. (2023) emphasized the absence of student voices in the debate on implementing or outlawing AI tools, which could be critical for students from underprivileged backgrounds. Further, they highlighted that embracing AI tools can promote students learning and prepare them to face the challenges of an increasingly digital world. In this regard, it does not make sense to avoid AI tools.

To make AI systems function for the good of humanity, individuals, society, the environment, and the ecosystem to prevent harm, UNESCO (2022) has issued recommendations on the ethics of AI. The report has placed emphasis on the requirement for public awareness or AI literacy to comprehend its value for accessibility, make informed decisions about their AI systems, and be shielded from improper influence. The report also suggested its member nations adopt policies in education and research to support the development of the prerequisite skills for AI education. AI offers opportunities to assist teachers in their educational and pedagogical responsibilities (UNESCO, 2021). The human interaction and collaboration between students and teachers should be the center of education. Further, capacity-building programs to empower teachers should be developed, inclusive and

equitable use of AI in education should be ensured, leverage of AI to enhance learning, promotion of locally developed AI technologies for education, and necessary competencies in the framework of teacher policies should be developed to better prepare teachers for the effective implementation of AI-rich educational environments (UNESCO, 2021).

It is imperative that educational institutions make a closer inspection of ChatGPT's risks and potential for teaching and learning in higher education. Universities should now provide their instructors and students with the information and enhance their abilities necessary to thrive in an AI-driven society, just like other sectors of the economy. Instead of only seeing ChatGPT as a tool for students to cheat, it is important to consider the implications of AI and focus on how it might enhance the value of academic perspectives, institutional responses, and university education (Sullivan et al., 2023). AI can assist students in achieving next-generation skills that are (i) computational thinking skills, (ii) creativity, adaptability & interpersonal skills, (iii) problem-solving, inquiry-based & project-based learning skills, and (iv) data-driven skills such as statistics, probability, graph theory and logic (Upreti & Dhugana, 2023). It is high time universities embrace the benefits of AI and develop their policies on the principles and applications of AI, particularly guided by ChatGPT, so that the teachers and the students can adapt it and benefit from its services in the teaching and learning process. The digital competency among teachers and students can easily tackle the challenges that AI brings each time with its ever-changing and innovative technologies. They need to learn to train such AI tools for better learning of students and the professional growth of teachers. Developing and implementing AI-related policies and guidelines by each university can create a better society where AI can complement achieving quality education through its ethical use.

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