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**Uncovering the Negative Impact of Artificial Intelligence on Higher Education: A Review Paper**

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**Abstract**

Amid ongoing worldwide spread of Artificial Intelligence and its profound impact on higher education environments, a significant amount of effort has been directed towards effectively adopting the tool within institutions of higher education institutions. This paper intends to provide an overview of potential benefits and current challenges associated with the ever-accelerating process. Yet, despite the high significance of the positive influence of the technology on various aspects of the learning environment, such for example as enhancing personalized learning, provision of formative feedback, student engagement, dropout rates, academic performance, and reduction of social and academic tension, the paper is aimed mainly at providing emphasis on a range of problems, difficulties and pitfalls pertaining to the integration of the tool in higher education settings. Among the challenges mentioned in the article are ethical concerns including, inter alia, bias, lack of transparency, privacy, data security, and academic integrity. The researchers presume that concerns surrounding the latter, particularly the potential for AI-facilitated plagiarism, remain the most pressing issue. Given the ever-accelerating use of AI technologies in the sphere of higher education, it is essential for universities to carefully manage the integration of the technologies in a manner that upholds the core values of academia.

**Keywords:** Artificial Intelligence, AI challenges and benefits.

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## **Introduction**

The integration of Artificial Intelligence (AI) in education has rapidly evolved from a theoretical idea to a practical reality exerting significant influence on stakeholders, i.e., lecturers and students, policy makers and decision-making bodies. AI-based tools have the potential to improve the efficacy and efficiency of educational processes, offering a more effective transfer of knowledge. The incorporation of the tools serves as a breeding ground for providing more dynamic and adaptable learning environments that can meet the changing needs of those involved in the process. Additionally, by ensuring that all students have access to the technologies that are necessary for their high academic achievements, AI can contribute to the creation of a more inclusive learning environment.

Against the backdrop of a rapidly growing trend towards embracing AI - augmented teaching and learning, diverse viewpoints have been expressed concerning its impact on a wide range of areas associated with various education settings. Among the areas are the provision of personalized assistance, i.e., personalized learning, to students helping them achieve a better understanding of educational material through the individualized approach (Kamalov et al. 2023), assistance in the grading process (Kamalov et al. 2023), enhancement of student engagement (Harry and Sayudin 2023), academic writing assistance for students leading to a better writing performance (Nguyen et al. 2023) and giving formative feedback (Nazaretsky et al. 2024). Another noteworthy aspect of the earlier noted personalized assistance can be linked to "personalization of educational platforms" (Ryzheva et al. 2024, 289). Personalization enables learners to complete tasks of different complexities at their own speed and the greater the amount of personal data an internet user shares, the more personalized the training program's material will become. By the same token, resorting to AI-powered systems can decrease social and academic stress. The reduction of stress results from creating a supportive environment for the students where they experience no pressure and where they see themselves as equal co-creators of the educational landscape alongside their colleagues and compare themselves with them (Ryzheva et al. 2024).

Along similar lines, due attention is also devoted to the role of AI in predicting the retention or dropout rates of students (Shoaib et al. 2024). The latter two aspects are linked to academic performance that can also be forecasted by AI algorithms and thus help identify "at-risk" learners (Latif et al. 2021). To this can be added that AI-based systems can track students' progress and alert instructors about potential problems learners may face (Ryzheva et al. 2024). Furthermore, students' academic achievements can play a valuable role in identifying flaws and gaps in educational curricula (Ryzheva et al. 2024).

## **Literature Review**

### **Limitations and Pitfalls of AI in Higher Education**

It is worth mentioning, however, that the above-mentioned benefits are accompanied by various disadvantages and challenges. One major concern is the ethical issues associated with the growing use of AI. This intrigued the present paper and therefore its main thrust is to portray a general snapshot of the potential negative impact of resorting to AI-enabled technologies within the higher education landscape and beyond. The authors of the article have geared major efforts toward shedding more light upon a range of disadvantages and pitfalls that have to be taken into consideration when using AI-powered tools in the realm of higher education. In that respect, it is of importance to note several core ethical constraints of AI touched upon in Bossmann (2016). The constraints include, inter alia, issues related to artificial stupidity, inequality, humanity, security, robot rights and singularity. Ethical concerns have also been raised in a study piloting ChatGPT in writing an academic paper (Zhai 2022). The concerns comprised bias, privacy, substitution of human labor and lack of transparency. The first one revolves around the data used for training of AI systems. Being present in the data, the bias can be perpetuated, which can result in unequal and unjust outcomes for students, especially if the bias pertains to factors like race, gender, or socio-economic status (Zhai 2022, "ChatGPT User Experience: Implications for Education"). As to the concerns having to do with privacy, they stem from the frequent necessity of gathering and analyzing vast volumes of student data by the systems. The necessity may bring to the fore issues related to learners' privacy and the data's security. Another noteworthy factor focuses upon possible difficulties teachers, lecturers and educators may encounter as a result of the use of AI systems in the educational landscape. The difficulties can manifest themselves in potential job losses on the part of the professionals and economic instability. As regards the lack of transparency, the concern is expressed over how decisions are reached by some AI-driven systems because understanding and interpreting the systems can be challenging for students and educators.

The latter speaks very much to the fact that researchers have yet to thoroughly look into the intricacies of AI technologies and thoroughly examine the domain. In this regard, it is worth noting a study that has sought, inter alia, to understand ChatGPT's viewpoint on the difficulties and challenges it poses for the higher education's landscape (Michel-Villarreal et al. 2023). Interestingly enough, ChatGPT identified a number of possible problems that it can pose for institutions of higher education. Among the potential obstacles are academic integrity, quality control, expertise and authority, communication and collaboration. The latter obstacle refers

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to the possibility that it may lack the same degree of human interaction and interpersonal competence as peers or an instructor owing to the fact that it is "an AI language model" (Michel-Villarreal et al. 2023, 5). As a result, its effectiveness in facilitating group work, discussions, and other collaborative assignments that are vital for a comprehensive educational experience may be restricted. Additionally, in contrast to educational staff, ChatGPT may be limited in subject-matter expertise. The presence of expertise is of high significance in the arena of higher education because specialists possessing such proficiency have a valuable impact on the process by offering in-depth knowledge, critical analysis, and assistance in particular fields. Consequently, depending exclusively on ChatGPT may not completely satisfy the expectations and demands of learners who are in search of guidance and input from well-qualified experts.

Another reason for being careful in fully relying on the data provided by the language model revolves around the fact that the obtained data contains a plethora of information that can be found on the internet. Being trained on the information, there is a likelihood that ChatGPT can produce inaccurate or misleading answers in spite of its effort to deliver precise and beneficial data. To ensure quality control is maintained, higher education institutions (HEI) need thoroughly evaluate the data and verify its accuracy.

Not less important is a potential challenge associated with academic integrity. The type of integrity concern raised by ChatGPT stems from its possible misuse by students in order to produce plagiarized material or "cheat on assignments and assessments" (Michel-Villarreal et al. 2023, 4). This misuse can make it difficult for HEI to uphold fair assessments and preserve academic standards.

Keeping those difficulties and challenges in view, it is worth noting ChatGPT's response to the question about the challenges that might prevent colleges from fully utilizing the advantages of ChatGPT. Among factors which amongst others can constitute an obstacle to fully using its benefits are tech-related barriers, reluctance to change, insufficient resources, insufficient awareness and comprehension (Michel-Villarreal et al. 2023). As for the first factor, integrating ChatGPT or other AI technologies may demand technical infrastructure and the lack of the latter in higher education settings may lead to problems in fully using the advantages of the technologies. Additionally, the integration of AI-based tools necessitates allocating resources for staff training, technical assistance and continuous maintenance. HEI with restricted budgets or limited human resources may find it challenging to take full advantage of the tools' potential owing to insufficient resources.

Due attention should also be accorded to the reluctance of "[f]aculty members, administrators, or staff" (Michel-Villarreal et al. 2023, 6) to implement new technological tools within their established practices or their preference for more

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traditional methods of teaching and learning. To overcome this resistance, it is necessary to communicate effectively, provide training and emphasize the potential benefits of ChatGPT. Another reason for the reluctance to experiment with the technology is if university personnel and students are unfamiliar with the technological tools and are unaware of its benefits. This insufficient awareness and comprehension regarding the capabilities and uses of ChatGPT can impede its adoption. The unwillingness to adopt AI-driven applications may also stem from a mistaken view revolving around bypassing the real issues and problems educators face on a daily basis. Drawing on this view, main efforts are geared towards introducing new approaches to teaching that go against prevailing traditional methods frequently without adequate evaluation to validate the supposed advantages (Pedro 2020).

Apart from the above-mentioned obstacles and problems, it is worth attaching due value to its response to the question regarding universities where ChatGPT is banned (Michel-Villarreal et al. 2023). In reference to the reasons for restricting the use of the AI-powered tool, it mentioned plagiarism-related issues, absence of interpersonal interaction and "[e]ducational [v]alue" (Michel-Villarreal et al. 2023, 8). As regards the second reason, it revolves around the fact that such AI-driven technology is devoid of human attributes. Such human traits as compassion, understanding of context and practical reasoning fall outside the scope of ChatGPT. The paucity of human engagement in specific educational settings may be considered as a drawback having a negative impact on education quality and the development of interpersonal communication abilities and critical thinking (Michel-Villarreal et al. 2023). Along similar lines, the importance of interaction is also emphasized with reference to the third reason for limiting the use of the AI-based tool. Academic institutions may hold belief that engagement with educators, classmates and genuine educational experiences is crucial for a thorough and valuable education. Viewed from this angle, it is argued by some that relying exclusively on AI technologies may constrain the degree of comprehension and inquiry. Moreover, the integration of AI technologies in the field of higher education can change the role of academic staff shifting it from knowledgeable specialists and mentors to simply basic overseers of AI-curated material (Rudolph et al. 2024). The shift may thereby devalue the university teachers' expertise and importance in the sphere of university education.

In addition to the above-mentioned reasons, it seems necessary to add the one put forward by ChatGPT in relation to the likelihood that the tool could be misused for plagiarism "if not properly attributed or verified" (Michel-Villarreal et al. 2023, 8). The possibility of this scenario can become a matter of concern on the part of HEI. More specifically, the institutions' concern can be expressed over upholding academic honesty and ensuring that students create their own unique work.

Deeply rooted as they are, there are other noteworthy obstacles standing in

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the way of adopting AI tools in the higher sphere of university education. Among them are the ones associated with inaccuracies and potential hazards in the content generated by the tools if the training data includes such problematic elements (Harrer 2023). Without belittling the significance of the aforementioned obstacles and limitations pertaining to the use and implementation of AI-related technologies, due value needs also be given to the financial aspect of the process. The financial component can play a weighty role in both implementing and maintaining these technologies in view of their high cost (Harry and Sayudin 2023). Those educational institutions that experience budget problems can find it challenging to adopt and manage the maintenance of the tools.

### **The Most Pressing Challenge of AI Integration in Education**

Without detracting from the importance of the aforementioned challenges, difficulties, limitations and pitfalls of using AI-powered tools in higher education settings, it is worthy of note that the list of disadvantages and problems pointed out in the paper is not complete. There are more concerns that have emerged and continue to emerge due to the fact that the tools evolve and further permeate the existing higher educational environments. This rapidly evolving academic landscape is increasingly intertwined with and influenced by a range of AI-related problems. The authors of the article are of the view that one of the most significant challenges posed by the implementation of AI technologies is the potential danger to academic integrity. With emerging and mushrooming demand for the technologies on the part of students, there is growing concern pertaining to the possibility of making use of the tools in order to commit plagiarism or cheat on various tasks (Michel-Villarreal et al. 2023). Another major issue arising from academic dishonesty revolves around exerting a detrimental impact on HEI. The impact can manifest itself in negatively affecting the reputation of universities (Kassim et al. 2015).

In light of the aforementioned and taking into account the overwhelmingly increasing current trend oriented towards implementing technology-driven AI tools, it is of paramount importance to effectively address this issue. Tackling the latter requires a multifaceted approach including, among other things, placing a stronger emphasis on cultivating ethical behavior in students. Failure to uphold, preserve and prioritise academic integrity may result in obscuring the positive potential and benefits of the technology by its adverse effects.

### **Conclusion**

Needless to say, there is a host of additional drawbacks and hurdles emerging from the trend of this rapidly developing field of AI that are yet to be thoroughly

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examined by researchers. With the proliferation of AI-based technologies, considerable efforts need to be devoted to equipping lecturers, students, and decision-making bodies with the necessary tools and strategies to sidestep numerous pitfalls on the path to the smooth integration of the technologies into the arena of higher education. With this need in mind, it is pertinent to emphasize that the benefits of embracing AI-enabled systems, some of which have been touched upon in the paper, outweigh the challenges the process creates. Yet, a delay in effectively and rapidly confronting the challenges would be a largely myopic stance and can constitute an obstacle to the full realization and integration of the systems into existing and future higher educational environments. This suggests a need to pursue sustained and well-coordinated efforts in elaborating a complementary, proactive approach with the help of which AI-driven tools can be integrated and utilized in various HEI without undermining the institutions' core values.

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