Students' Perceptions of ChatGPT in Academia: Challenges and Recommendations-A Review Paper

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Abstract

The integration of Artificial Intelligence (AI) in the realm of higher education is transforming the educational landscape all over the world. More and more higher education institutions (HEIs) are actively plunging into adopting AI-based technologies to align with the rapidly growing global trend. AI-driven conversational models like ChatGPT are at the forefront of the shift, bringing many benefits to the process stakeholders. It is worth noting, however, that, while there are several benefits to employing the technologies, there are also a number of challenges that are associated with their use. This paper provides a general overview of students' attitudes toward ChatGPT and its disadvantages. Additionally, the paper presents recommendations on the part of the learners that can help address these challenges. Taking into consideration the recommendations can assist in better integrating AI-powered systems in higher education.

Keywords: ChatGPT, Challenges and Recommendations, Perceptions, disadvantages

Introduction

There has been a steadily increasing worldwide transition toward integrating Artificial Intelligence (AI) in higher education over recent years. More and more policymakers, decision-making bodies, lecturers, and students align with this ever-increasing worldwide trend, which revolves around effectively adopting AI-powered tools into existing educational environments. In this regard, it is worth mentioning ChatGPT. This rapidly developing AI-driven conversational model has become a global phenomenon across a wide range of fields owing to a host of actual and potential benefits deriving from its use that can never be overemphasized. Yet, despite the significance of the technology, demonstrated

through its effectiveness, efficiency, and convenience, due attention should be accorded to various challenges associated with its use. The purpose of this article is to provide a general overview of the integration of ChatGPT into higher education from the perspective of students, stressing both its possible benefits and challenges. With this purpose in mind, the following literature review will present valuable insights into a wide range of aspects connected to the significant influence of the AI assistant on learning and teaching processes in higher education settings.

Literature Review

In light of the foregoing, it is worth noting a study conducted at the University of Limerick that focused on exploring the general perceptions of the university's students towards using AI-driven tools in the realm of education, with a particular focus on their views regarding ChatGPT (Irfan et al. 2023). The research study was carried out among more than 90 learners, encompassing a range of departments and faculties. The participants responded to survey questionnaires consisting of nine questions "meticulously structured to procure insights into the students' opinions with AI utilities like Chat GPT" (Irfan et al., 2023, 48). Drawing on the results obtained from the question regarding the extent to which students "have used any AI tool or tools for [their] educational needs" (Irfan et al. 2023, 54), there is an evident and predictable trend towards heightened usage of AI-powered technology in deeply technical areas associated with Electronic & Computer Engineering, Computer Science & Information Systems, and the School of Engineering. The data shows a pattern of higher usage of the technologies by these departments. Additionally, the pattern is likely associated with the nature of their educational focus and content.

Conversely, art departments and humanities mostly view it unfavorably. This might be explained by insufficient exposure and comprehension or a belief that technology has limited significance in their studies. Similarly, the survey shows a difference between students from technologically and scientifically oriented fields and learners from the humanities, arts, and social sciences. The difference was identified in their responses to the question of how much they believe AI technologies, like ChatGPT, increase the efficiency of their studies. The responders related to the areas of science and technology expressed a strong belief in the tools' effectiveness. The responses indicate that students in these fields tend to have more frequent interactions with AI, which in turn helps the learners be more comfortable using them and have a better understanding of the technologies' potential. The findings run counter, however, to the ones that emerged from the data based on the answers of the participants from schools focused on sectors unrelated to technology and science. According to the results, the students from the schools were assigned a low weight to the efficiency of the tools, probably because the responders were less exposed to them.

Another noteworthy aspect of the above-mentioned potential advantages of using AI-powered technology, such instance as ChatGPT, that can never be overemphasized is its connection to the accuracy of the information provided by the tool. In this regard, it is worth noting that the study was conducted among 107 students "enrolled in a foundation program either from Foundation in Sciences or Foundation in Art" (Sila et al. 2023, 4049) at a private university in Malaysia. Drawing on the results obtained from the online survey, the students are uncertain about the credibility and accuracy of the information provided by ChatGPT. Among the reasons for the participants' doubts is the lack of visibility and insight into ChatGPT's response-generating process mechanism.

The students' answers concerning the issue are consistent with those received in another study (Hammer et al. 2024) that assessed a number of essential aspects regarding the adoption and use of AI among students, with a specific focus on ChatGPT. The participants - computer science and design students - were asked to answer questionnaires to assess learners' interactions with the tool. The findings emerging from the students' answers indicate that the majority of the respondents mentioned the poor

quality of responses delivered by ChatGPT. In addition to the inadequate quality, almost half of the students indicated worries about the precision of the responses, pointing out that they were either wrong or misleading.

Along similar lines, the issue of the accuracy of the data provided by the tool is touched upon in another study conducted at three universities in Jordan (Almahasees et al. 2024). The study sought to gather insights into university students' opinions on the effectiveness of technology as a learning support system within higher education through an online questionnaire. The majority of the responders agreed with the statement that ChatGPT might provide responses that are either "incorrect or biased" (Almahasees et al. 2024, 3489).

Coming from this angle, the earlier noted issue of the accuracy of the information generated by the AI-enabled system can manifest itself in various other fields, and among them, according to the study carried out in Vietnam (Ngo 2023), is a lack of ability to evaluate trustworthiness and quality of sources along with citing them properly. The study was conducted to explore university students' attitudes towards using ChatGPT in their studies, looking into positive impacts of the AI-driven conversational model, obstacles, and possible solutions. The students who participated in the study had prior experience using the tool in their academic activities. The participants provided their answers via an online survey. In addition, thirty participants from the entire sample were subsequently chosen for a semi-structured interview. The results emerging from the students' answers indicate, inter alia, that a major obstacle to utilizing ChatGPT is the inability "to examine quality and reliability of sources" (Ngo 2023,13). Additionally, the responders pointed out that it can also generate incorrect, erroneous, and misleading references.

The worrisome aspect associated with the spread of wrong data and false beliefs has been identified by technical experts as hallucinations (Ahmad et al., 2023). In their study, the researchers have looked, among other things, into ChatGPT's capacity to distinguish between accurate and inaccurate associations in the questions it receives. The participants of the study were thirty-five undergraduate students from the Department of English at a private University in Bangladesh. Based on the data obtained from the research, all the participants have experienced hallucinations at some stage during their use, and many students are of the opinion that the tool is entirely untrustworthy when it comes to literature. Additionally, numerous participants highlighted the inaccuracies they identified in ChatGPT's answers. The researchers also pointed out that hallucination was among the top two reasons students stopped using ChatGPT, along with the issue of restricted replies.

There are yet a variety of other issues associated with the use of the language model, i.e., ChatGPT, apart from the ones indicated above, that need to be taken into consideration by the stakeholders. One such issue is the risk of potential over-reliance on the tool on the part of the learners, which may lead to adverse consequences. In that respect, it is worth mentioning the study carried out among one hundred learners from various courses at an academic institution in Tanzania that investigated, inter alia, students' views on reasons encouraging them to use the technology for academic purposes (Victor 2024). Drawing on the results obtained from the interviews, there exist different motives behind their choice to resort to ChatGPT. These include social influence, lazy thinking, simplicity of using the tool, desire to obtain high grades in academic tasks, interpretation and completion of questions, and inability to understand concepts discussed in class. Regarding social impact, the participants accorded high value to the role played by their peers, who use and gain advantages from the technology, in their decision to use the language model. Among the advantages may be the "shortcut provided by ChatGPT" (Victor 2024, 338) that can assist in bypassing the process of their own critical thinking and overcoming

problems. The easy route provided by the technology, along with the reliance on its convenience to complete tasks without devoting efforts to fully absorb and understand the subject matter, leads, according to the students, to the factor of lazy thinking.

Another strong incentive for the students to use ChatGPT is the desire to receive high assignment scores. The tool's ability to create responses that mimic human conversation and quickly make complex topics simpler can help learners increase their work quality, and the change in the quality can potentially lead to higher academic achievements. Viewed from this angle, the technology's ability to imitate human responses can be an important element of the students' learning experience. Drawing on the data that was collected via interviews, ChatGPT's accuracy in interpreting questions and its capacity to create appropriate answers is yet another significant factor that motivates students to use it academically. Along with that, according to the data derived from the semi-structured interviews, the lack of comprehension of concepts presented in class is a significant motivator behind students' decisions to employ ChatGPT in academic settings.

Data obtained from the interviews also indicates that there are negative implications of using the technology for academic-related tasks. The interviewees related the negative impacts to such aspects as excessive reliance on ChatGPT, plagiarism-related ethical issues, issues associated with reliability, limited knowledge, and a negative impact on graduates in their future workplaces. The latter and the first aspects are deemed as primary concerns about the usage of the tool in higher education institutions. With the emerging and mushrooming demand for ChatGPT and other AI-enabled technologies, it is of utmost priority that the above-mentioned and other disadvantages of using the technologies (Bossmann 2016; Zhai 2022) be addressed through joint efforts of decision-making bodies, policymakers, and educators.

Students' Recommendations for Using ChatGPT

Apart from this, it is worth attaching due attention to students' recommendations on how to overcome the negative outcomes of ChatGPT's inappropriate use. The first one is to urge students to utilize the model as a supporting aid "rather than a primary source of information" (Victor 2024, 343). To this can be added offering training workshops focused on strengthening students' critical reasoning skills and "problem-solving strategies" (Victor 2024, 343) with the view of decreasing the inordinate dependence on technology. An additional recommendation related to the heavy dependence revolves around the role of academic institutions in the process. Based on the suggestion, students should be taught to attach high importance to forming their original ideas as well as generating their personal solutions and avoid relying exclusively on AI-produced content.

Alongside the aforementioned overdependence on the tool, there are recommendations oriented towards mitigating another undesirable effect of using ChatGPT pertinent to plagiarism-related ethical concerns. One of the suggestions to address the concerns is to establish rigorous academic policies to clearly specify the ethical usage of ChatGPT and similar AI technologies. Higher education institutions should also instruct learners on how to properly cite sources and on the penalties associated with plagiarism. Additionally, plagiarism-related ethical concerns can be addressed by implementing sophisticated plagiarism detection technology capable of identifying content created by AI, particularly in student submissions for research and assignments. As to the issues having to do with reliability, it was recommended that institutions should motivate learners to critically assess the trustworthiness and precision of answers produced by ChatGPT.

In addition, students provide their recommendations to alleviate the negative repercussions of inappropriate use of ChatGPT within educational contexts in aspects related to limited knowledge and the impact on graduates' success in their future careers. The former implies incorporating traditional learning methods with the use of the tool to deepen learners' understanding. As regards the influence on students in their future workplaces, it was recommended to "[i] integrate practical application exercises into the academic curriculum" (Victor 2024, 344) to build non-AI-dependent practical skills. To this can be added a recommendation to place emphasis on fostering critical thought, problem-solving abilities, and communicative competence, which are vital in work environments.

Along a similar vein, it is worth touching upon learners' suggestions geared toward the effective use of ChatGPT. In this respect, it is worthy of note a study centering primarily on examining students' experiences and views regarding ChatGPT's role as a supportive tool for learning (Monib et al. 2024). The data was collected through social media channels. According to the results received from the study, students mentioned a range of strategies and techniques to maximize the effectiveness of the tool, among which were providing input with contextual relevance, continuously modifying prompts for improvement, using new separate tabs, browsing history management, utilizing features of pause and edit, refreshing when needed, double-checking and confirming data accuracy.

The latter recommendation, among others, was also pointed out in the above-mentioned study conducted at an academic institution in Vietnam that sought to explore university students' perspectives on utilizing ChatGPT in their learning (Ngo, 2023). The majority of students suggested confirming the accuracy of ChatGPT's answers by "verifying them from reliable sources, such as scientific articles" (Ngo 2023, 13). An additional suggestion was to utilize this AI-powered language model as a consultative aid or reference tool rather than simply replicating its responses. This strategy fosters critical thinking among students and mitigates their overdependence on ChatGPT, along with other AI-driven tools. Additionally, there was a recommendation to create and provide students with instructions for using ChatGPT responsibly with a view to delineating ethical and unethical uses. As for the latter, another suggestion revolved around the necessity to cultivate a culture of academic honesty to ensure the ethical application of ChatGPT within academic settings.

Conclusion

In view of the aforementioned and taking into consideration the rapidly growing trend towards integration of AI-powered tools in the higher sphere of university education owing to a wide range of benefits that the tools bring, it is vital to best exploit the potential of these technologies by integrating their capabilities with a broad spectrum of teaching and learning strategies used by stakeholders. Yet, it needs to be emphasized that without detracting from the significance of the numerous advantages of AI technologies, due attention needs to be attributed to a host of challenging issues associated with the technologies. In that respect, particular attention should be given to students' recommendations related to addressing the challenges and maximizing the benefits of AI-based technologies. Taking into consideration these recommendations, policymakers and decision-making bodies can effectively improve the integration of the technologies into different academic settings.

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