
EDUCATIONAL INSTITUTIONS AND CHAT GPT', UNDERSTANDING FACULTY INSIGHTS

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ABSTRACT

This study looks at how academicians in educational institutions perceive ChatGPT, an Artificial Intelligence-powered language model, and how it affects both students and institutions. ChatGPT is chatbot that is capable of understanding context and providing natural, fluid dialogue responses to prompts and queries. Using a thematic content analytic technique, the responses of Twenty academicians are examined across various themes that are utilized in terms of their teaching-learning experiences. The study examines themes around teaching associated with AI powered chatbot and also gives us a glimpse of advantages of use of AI in delivery of education as well as awaken us to understand the criticism associated with the use of ChatGPT. By understanding the existing literature, barriers and challenges are explored and suggestions on future research are made. Privacy related concerns, ethical dilemmas and preparation of educational institutions for integration of the Artificial intelligence-oriented technologies with imparting of knowledge and its subsequent evaluation is explored.

Keywords: Artificial Intelligence, ChatGPT, Teaching, Institutions

1. INTRODUCTION

Recent progress in artificial intelligence (AI) has sparked a heightened interest in exploring its potential applications and ramifications across diverse domains. OpenAI's creation, ChatGPT, was introduced to the public in November 2022 and rapidly gained widespread use, attracting one million users within just five days. The extensive range of applications for ChatGPT and its capacity to enhance user productivity across various industries are generating new discussions about the possibilities of this cutting-edge AI application. Education is a particularly prominent topic in these discussions. Some anticipate that ChatGPT's pioneering application will lead to a significant shift in multiple fields, including education (Bozkurt, 2023; Sallam, 2023), while others highlight potential ethical challenges and view it as a disruptive technology (Haque et al., 2023; Sardana et al., 2023). García-Peñalvo (2023) contends that criticisms of ChatGPT are rooted in resistance to change rather than the inherently disruptive nature of the technology. Since its public debut, educators have had mixed reactions to ChatGPT's ability to perform complex tasks in the field of education (Baidoo-Anu & Owusu Ansah, 2023).

The GPT-3 Natural Language Processing (NLP) model was equipped with a staggering 175 billion parameters, which is approximately ten times more than its predecessors. This auto-regressive language model, GPT-3, demonstrated robust performance across various NLP datasets, excelling in tasks such as answering questions and filling in missing words during the training process (Brown et al., 2020). As ChatGPT's remarkable success resonated, its successor, GPT-4, emerged with a host of new features. GPT-4 is characterized by increased reliability, enhanced creativity, and a superior ability to comprehend nuanced instructions compared to GPT-3.5 (OpenAI, 2023). The primary distinctions between GPT-3.5 and GPT-4 lie in the parameter size (with GPT-3.5 having 175 billion parameters and GPT-4 featuring significantly more), the context length, the capability to process images as input alongside text, and the integration of Rule-Based Reward Models in its training (Koubaa, 2023; OpenAI, 2023).

AI technologies, exemplified by ChatGPT powered by GPT-4, have shown considerable promise in reshaping the learning experience and information interaction for students. With the growing sophistication and accessibility of these AI-driven tools, it becomes imperative to delve into their influence on students and educational institutions, specifically within the university context. The objective of this study is to examine the perspectives of faculties concerning the ramifications of ChatGPT for students and universities.

In a critical examination of the utilization of ChatGPT in education, Thorp (2023) underscored that while this application may offer entertainment, it carries substantial consequences within the realms of science and academia. Specifically, he highlighted considerable apprehensions about the transformative impact it might have on education. Thorp argued that despite ChatGPT's ability to generate articles on diverse subjects, its proficiency in academic writing is still evolving (Thorp, 2023). This evolution necessitates academics to reconsider their teaching approaches, adopting innovative methods, and designing assessments that pose challenges beyond the straightforward capabilities of AI.

2. LITERATURE REVIEW

The impact of ChatGPT has sparked a significant volume of research articles. The constant influx of scholarly works makes it challenging to provide a continuously updated summary of the papers on ChatGPT without risking rapid obsolescence. Notable examples include Zhai (2023), whose research asserted that ChatGPT possesses the capability to address complex challenges in science education through automated processes such as assessment generation, grading, guidance, and material recommendations. Susnjak's (2022) discoveries indicate that ChatGPT is capable of effectively duplicating human-written text, thereby casting doubt on the security of online assessments in higher education. Similarly, Biswas (2023) proposes that ChatGPT can contribute to enhancing the precision of climate projections by leveraging its capacity to produce and analyze diverse climate scenarios. This involves handling various data inputs, including model parameterization, data analysis and interpretation, scenario generation, and model evaluation.

Pavlik (2023) illustrates the potential and boundaries of ChatGPT by co-creating a paper with it and provides musings on the effects of generative AI on journalism and media education. The incorporation of AI-based chatbots in educational endeavors emerges as a noteworthy area for bolstering student engagement and learning procedures. Previous research has illustrated that chatbot technologies can elevate student interaction and learning processes (D'Mello et al., 2014), enhance learning experiences by influencing student success in higher education (Winkler & Söllner, 2018), and potentially elevate student motivation, engagement, and learning outcomes (Deng & Yu, 2023). However, there is currently no unanimous consensus on these assertions, and further research is needed to establish a definitive position.

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Recent research endeavors have delved into the possibilities and obstacles associated with the integration of large language models like ChatGPT in educational settings. Kasneci et al. (2023) scrutinized the potential advantages and drawbacks of ChatGPT in the realm of education. Similarly, Willems (2023) examined the broader ethical considerations tied to the deployment of such models within universities. Malinka et al. (2023) investigated the educational implications of ChatGPT, probing into the readiness of artificial intelligence to attain a university degree.

In a critical examination of the application of ChatGPT in education, Thorp (2023) underscored that while this tool may offer amusement, it carries significant consequences within the realms of science and academia. He particularly highlighted concerns about the transformative impact it might have on education, arguing that although ChatGPT can generate articles on various topics, its proficiency in academic writing is still evolving (Thorp, 2023). Consequently, academics are compelled to reconsider their instructional approaches, adopting innovative methods and crafting assessments that pose challenges beyond the capabilities of AI.

On the other hand, Baidoo-Anu and Owusu Ansah (2023) explored the potential advantages of ChatGPT in teaching and learning. They identified benefits such as personalized learning, the promotion of interactive learning, and the potential for formative assessment that aids teaching and learning processes, providing continuous feedback. However, they also noted challenges associated with ChatGPT, including issues of misinformation generation, biases in data training, and privacy concerns.

The existing literature covers studies on the implementation of AI, notably the GPT-4 model, in educational settings. However, as of early April 2023, there is a scarcity of research focusing on the viewpoints of scholars and students concerning the widespread adoption of ChatGPT. This research, undertaken at a time when discussions about ChatGPT's use in universities are actively dominating the higher education agenda, is poised to provide a substantial contribution to the current body of literature.

3. METHOD

The primary objective of this study was to investigate the viewpoints of educators concerning the implications of integrating ChatGPT and AI within college/university contexts. To accomplish this, a survey question was initially distributed to faculty members through a Google Form for data collection. The study received responses from 20 faculties, contributing to the insights gathered in this research.

In this study, faculty participants were drawn from various colleges and universities across India, representing diverse academic disciplines such as Management, Media, Literature, Science, Social Sciences, Commerce, Information

Technology, Politics, Architecture, Fine Arts, and more. The data collection for this study involved the use of an open-ended question, specifically designed to gather opinions and insights on the potential impact of ChatGPT on students and universities. Participants were encouraged to articulate their thoughts on the subject, leading to a collection of varied responses. All personally identifiable information was carefully removed to ensure the anonymity of the participants.

The resulting dataset included 24 comments from 20 participants. Thematic content analysis was employed to analyze the data, enabling the identification of emerging themes and patterns in the participants' opinions.

By employing the thematic content analysis method, the study successfully extracted valuable insights and opinions from the gathered responses. This approach facilitated a more profound comprehension of the potential implications of integrating ChatGPT and AI within the context of educational institutions.

Moral Contemplation

The primary moral contemplations in this research revolved around ensuring voluntary participation and safeguarding the privacy and well-being of the participants. Participants were explicitly informed about the voluntary nature of their involvement, emphasizing their freedom to withdraw from the study at any point. The information provided by participants was kept confidential, with no sharing among participants. Furthermore, the anonymity of participants was preserved, as their names were not used in the article's text. The use of online platforms for data collection allowed participants to express themselves without divulging their identities.

4. FINDINGS

The examination of comments addressing the question "What impact does ChatGPT have on educational institutions?" resulted in the identification of eight themes. The primary themes, extracted through thematic content analysis, along with the frequency of each theme, are outlined in Table 1. The frequencies denote the number of instances each theme was referenced or discussed within the overall number of comments that underwent analysis.

Table 1: Themes, Descriptions and Frequencies

Themes	Description of the theme	Frequency
Evolution in Role of Faculties	Incorporating AI such as ChatGPT into education has the potential to transform the role of faculty members from being primarily content providers to serving as facilitators, mentors, and guides. Their emphasis would shift towards nurturing soft skills, critical thinking, and creativity in students.	14
Individualized Learning	ChatGPT and comparable AI tools have the potential to facilitate personalized learning encounters by adjusting to the unique needs and learning preferences of students. Simultaneously, these tools can help overcome obstacles like shyness and reluctance in posing questions.	9
Influence on assessment and evaluation	The extensive utilization of AI tools in education might necessitate a reconsideration of assessment approaches, as conventional exams and assignments could become outdated given the ease of acquiring AI-generated responses.	10
Moral and societal considerations	Utilizing AI in education gives rise to ethical and social issues, encompassing concerns about privacy, accessibility, and the potential for heightened dependence on technology, potentially resulting in diminished cognitive capacities.	12
Digital competence and considerations in the realm of AI	The integration of AI in education underscores the significance of digital proficiency, emphasizing the need for students to acquire skills in interacting effectively with and critically assessing content generated by AI.	8
Transformation of learning and educational systems	AI has the potential to bring about substantial transformations in educational systems, such as a heightened emphasis on open and distance learning, the adoption of alternative accreditation methods, and an increased focus on nurturing skills that are distinctly human.	17

The future landscape of employment and workforce readiness.	The integration of AI in education and the job market has the potential to result in the obsolescence of certain job categories while giving rise to new ones. This dynamic shift necessitates a re-evaluation of educational programs and curricula to align with the evolving demands of the workforce.	9
The significance of features unique to humans	As use of AI becomes increasingly widespread, higher education curricula should prioritize enhancing distinctly human attributes, including emotional intelligence, creativity, aesthetic comprehension, and philosophical perspectives.	4

As illustrated in Table 1, the most recurrent themes were " Transformation of learning and educational systems " with 17 occurrences, " Evolution in Role of Faculties " with 14 occurrences, and "moral and societal considerations" with 12 occurrences. These three themes indicate that scholars and students believe that AI technologies, particularly exemplified by the capabilities of ChatGPT, will bring about changes in our approaches to implementing and evaluating education however care must also be taken regarding ethical considerations of use of AI tools.

5. DISCUSSION AND CONCLUSIONS

The outcomes of the thematic content analysis align with existing literature, underscoring the potential advantages and hurdles associated with the integration of AI, including ChatGPT, in education. The evolving role of educators, as discussed by Bozkurt (2023), and Sengupta and Chakraborty (2020), reinforces the notion that AI tools have the capacity to enhance student engagement and satisfaction. This is achieved by relieving university staff of routine tasks, enabling them to concentrate on higher-order skills and mentorship. Similarly, Alotaibi et al. (2020) discovered that chatbots can enhance student performance and knowledge retention, supporting the theme of personalized learning identified in this study's analysis.

Although the thematic content analysis carried out in this study offered valuable insights into participants' perspectives, future research could gain from employing supplementary qualitative and quantitative methods to delve deeper into the impact of AI on the educational process.

In conclusion, the integration of AI in education presents numerous possibilities for improving learning experiences, customizing instruction, and reshaping the role of educators. Nevertheless, this transformation introduces challenges in the realms of assessment, digital literacy, and ethical considerations. To optimize the advantages of AI in education, it is imperative to tackle these challenges and formulate strategies that ensure responsible and equitable implementation.

6. RECOMMENDATIONS

Based on the findings of this study, several significant recommendations can be made for stakeholders involved in the integration of AI, particularly ChatGPT, in education. These stakeholders encompass educators, policymakers, researchers, technology experts, educational strategists, instructional designers, and administrators. The recommendations are as follows:

- 1. Develop Ethical Guidelines:** Establish policies, guidelines, and best practices for the ethical and effective use of AI technologies in education. This should be achieved through ongoing dialogue and collaboration among all stakeholders.
- 2. Emphasize Critical Skills:** Explicitly incorporate critical thinking, creativity, problem-solving, and digital literacy skills as essential learning outcomes and experiential competencies in course and curriculum designs. Prioritize curricula and pedagogical approaches that effectively address the capabilities of AI tools.
- 3. Promote AI-Supported Learning Environments:** Advocate for the adoption of AI-supported learning environments that are personalized, adaptive, and responsive to the individual needs of learners. Encourage self-directed learning through these environments.
- 4. Conduct Further Research:** Undertake additional research, including longitudinal and experimental studies, to gain a comprehensive understanding of the long-term effects of AI integration in education. This research should focus on its impact on stakeholders, particularly educators and students.
- 5. Explore Accreditation Systems:** Investigate the development of accreditation systems that recognize and validate knowledge and skills acquired through AI-supported learning.

By implementing these recommendations, stakeholders can collaboratively harness the potential of AI technologies, such as ChatGPT, to enhance learning experiences and outcomes in higher education while mitigating potential risks and unintended consequences.

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