NAVIGATING THE INFLUENCE OF AI TOOLS ON STUDENTS' LEARNING EXPERIENCES IN HIGHER EDUCATION: A QUALITATIVE STUDY

Tlalane Mosae
Research Scholar, School of Liberal Arts,
GD Goenka University, Gurgaon, India
Dr. Rekha Kaushal
Assistant Professor, School of Liberal Arts,
G.D. Goenka University, India

ABSTRACT

This qualitative study investigates the influence of artificial intelligence (AI) tools on students' learning experiences in higher education. Focusing on widely used platforms such as ChatGPT and Grammarly the research captures the perspectives of undergraduate students across various disciplines through semi-structured interviews. The aim is to explore how AI technologies shape academic practices, improve learning efficiency, and influence engagement. Findings reveal that students value AI tools for their ability to simplify complex content, improve writing and grammar, and support personalized learning. These tools were also found to enhance research speed and comprehension. However, challenges emerged, including concerns about misinformation, limited access due to subscription costs, and the risk of diminishing students' capacity for independent thought and deep analysis. Participants also expressed mixed feelings about their growing dependence on AI in academic tasks. The results suggest that while AI tools offer substantial support for diverse learners and promote efficiency, they must be integrated thoughtfully to avoid undermining essential academic skills. This study emphasizes the importance of a balanced, blended learning approach that combines AI with traditional teaching methods. It also calls for institutional policies that ensure equitable access, uphold ethical standards, and foster critical engagement with AI tools. These insights contribute to ongoing conversations about the future of AI in higher education and its role in shaping inclusive, effective learning environments.

Keywords: Artificial Intelligence, higher education, student learning

INTRODUCTION

The introduction of artificial intelligence (AI) tools into higher education is markedly reshaping students' learning experiences. AI-enabled applications, including ChatGPT, and adaptive learning systems provide individualized academic support, aid in writing and ideation, and augment research and analytical skills. Chan and Hu (2023) Students recognize that AI can help improve their learning. It can provide personalized support, assist with writing and brainstorming, and aid in research and analysis. Similarly, Zhou et al. (2024) observed that AI-assisted instruments offered students immediate feedback, allowing them to refine their work and cultivate improved study methods. These observations highlight the increasing acceptance of AI within educational frameworks and its potential to enrich conventional learning approaches.

In addition to content creation, AI instruments are important in adaptive learning frameworks. Platforms powered by AI can assess students' learning behaviors and customize content to fit individual requirements, thus providing tailored pathways for knowledge acquisition. Lin & Chen (2024) investigated how AI-embedded educational applications affect students' creativity and academic emotions, indicating that AI can enhance problem-solving abilities and encourage deeper engagement with educational content. Furthermore, AI-operated chatbots and virtual tutors are

progressively utilized in higher education to offer immediate academic support, alleviating the responsibilities of instructors and permitting students to seek assistance outside traditional office hours (Tierney et al., 2024). Such technological advancements signify that AI can transform how students engage with academic materials and obtain support in their studies.

Notwithstanding these advantages, the implementation of AI in education encounters various challenges. Issues surrounding the accuracy of AI-generated content, equity, and academic integrity have been subjects of significant discourse. Tierney et al. (2024) emphasized that students maintain a level of skepticism regarding the dependability of information produced by AI, as these tools may yield misinformation or erroneous outputs. Moreover, the escalating reliance on AI applications raises concerns about academic integrity, with several educators apprehensive that students might misapply AI-generated content in ways that compromise critical thinking and independent problem-solving capabilities (Krause et al.,2024). Additionally, Lin & Chen (2024) warned that excessive dependence on AI might impair students' capacity to engage in profound learning and intellectual dialogue, potentially resulting in shallow knowledge acquisition.

This qualitative investigation intends to explore the complex ways in which AI tools influence, enhance, or potentially hinder the educational pathways of university students. By examining students' viewpoints with AI in higher education, this research aspires to offer deeper insights into the evolving function of AI in learning environments. Through a semi-structured interview, the study will analyse how students engage with AI tools and the challenges they encounter. As AI continues to develop, comprehending its influence on student learning experiences will be important in shaping the future of higher education.

1.2. AI IN EDUCATION

One significant application of AI within education is the establishment of intelligent tutoring systems that offer personalized instruction customized to meet the unique needs of individual students. These systems enhance student learning, that is, improving the quality of students' learning experience (Tierney et.al., 2024). In addition, AI-driven platforms enable automated assessment and feedback, allowing educators to effectively assess student assignments and provide timely support. This automation not only simplifies the grading process but also facilitates more uniform and objective assessments (Holstein et al., 2019). Furthermore, AI can aid in collaborative learning by organizing student groups based on complementary skills and learning styles, which enhances the educational experience and engagement (Stanley, 2021).

Building on these, these platforms employ advanced methods to collect learner's information and modify the difficulty of tasks and learning trajectories according to individual progress (Cui et al., 2019; Kulik & Fletcher, 2016). For instance, when students demonstrate proficiency in a specific topic, the system introduces more challenging exercises to maintain engagement and motivation (Zhai, 2022). Conversely, if a learner finds certain concepts challenging, the platform provides additional resources and practice to reinforce comprehension (Zhai, 2022). This methodology aims to enhance learning efficiency and effectiveness by providing individualized experiences customized to the unique needs and capabilities of each student (Zhai, 2022).

Nevertheless, the incorporation of AI EdTech within educational contexts presents challenges. These challenges primarily stem from apprehensions related to loss of critical thinking, AI misinformation, performance anxiety and technical frustrations (Tierney et.al., 2024; Lin & Chen, 2024). AI systems fundamentally depend on substantial data for efficient functioning, often utilizing sensitive information from students to derive insights and generate predictions. AI programming methods can inadvertently magnify biases present in the data, leading to potential discrimination (Zaman, 2023). Additionally, the digital divide results in limited access to technology for students, exacerbating disparities in AI-facilitated education (Zaman, 2023). Educational organizations should ensure that machine learning prioritizes transparency, fairness, and security, protecting

student data and preventing bias in AI algorithms. Addressing these issues is important for maintaining trust and fostering an inclusive learning environment

PREVIOUS STUDIES

Shaik et al. (2023) investigated the role of natural language processing (NLP) as a fundamental artificial intelligence (AI) approach in higher learning, highlighting its capacity to analyze extensive data for predictive insights and customized learning experiences. They observed that AI systems, particularly those utilizing NLP, can evaluate student feedback in multiple languages with minimal human oversight, thereby creating a more adaptive educational environment. This capability enhances student engagement and enables teachers to modify their methods according to individual learning requirements, ultimately promoting a culture of adaptive instruction. Mallik and Gangopadhyay (2023) further articulated the advantages of AI tools, emphasizing their role in boosting productivity and efficiency while providing immediate feedback to learners. They highlighted how AI supports diverse learners, including those with disabilities or language barriers, by offering personalized pathways that cater to varied educational needs. This underscores the critical role AI plays in creating inclusive learning environments that accommodate all students.

Building on these findings, Tian et al. (2024) identified further areas where AI and machine learning (ML) can significantly improve instructional quality, including teacher development and content creation. Their research indicates that AI/ML not only simplifies academic responsibilities but also provides actionable feedback for teachers, enhancing their understanding of learning environments. This dual advantage of assisting educators while improving student learning experiences demonstrates the widespread impact of AI tools in higher learning.

In their research, Ocaña-Fernández, Valenzuela-Fernández, and Garro-Aburto (2019) investigated the impact of emerging technologies linked to artificial intelligence (AI) in education. The researchers reviewed the literature to assess the influence of AI on educational practices, the associated challenges and ethical considerations in its implementation, and the essential digital competencies that universities should cultivate to foster students' growth for a technologically advanced future. The article synthesizes Various sources, such as academic papers, books, and reports, are utilized to present an overview of the current state of AI in learning and discuss its future outlook to revolutionize educational experiences through personalized learning and intelligent tutoring systems. It also addresses the wider impact of AI on society, highlighting the necessity for effective policies and the importance of digital literacy.

The latest study by Annamalai et al. (2023) aimed to investigate students' enthusiasm to study English using chatbots through the lens of self-determination theory (SDT). A case study design was utilized to collect qualitative data, involving interviews with 25 undergraduate students in Malaysia to explore how chatbots facilitate competence, autonomy, and relatedness in language acquisition. The findings indicated that chatbots enhance language skills by providing repetition, assessment, multimedia resources, and feedback, while also enabling flexible learning regarding time and location. However, the study noted that chatbots lack an emotional context and may deliver inaccurate information. Students recommended the integration of chatbots for assessment purposes alongside traditional classroom instruction. Trisoni et al., (2023) investigated the impact of artificial intelligence (AI) on improving student performance at the senior high school level. The research employed a quantitative survey model approach, utilizing online Google forms and in-depth interviews with teachers and students to collect data on how AI can assist educators in designing lessons that effectively support student learning. The results indicated that AI can enhance educators competency in pedagogy and help students achieve academic success during the learning process.

Chukwuere (2024) highlights the importance of cultivating significant dialogue among stakeholders possessing varied expertise to facilitate the successful implementation of generative AI chatbots

within higher education institutions (HEIs). The study stresses the necessity for collaboration and the development of practical guidelines to address the ethical and instructional dilemmas linked to the utilization of AI chatbots. It points out notable challenges, including issues pertaining to academic integrity and resource distribution, while also suggesting strategic solutions aimed at maximizing the advantages of these technologies. This research underscores the potential of generative AI chatbots to reshape the educational environment, albeit with a careful consideration of their ethical implications. Subsequently, the Aljuaid (2024) performed a systematic review investigating the impact of AI tools on the instruction of academic writing. The results reveal a growing trend toward the integration of AI technologies such as Grammarly and Google Translate in academic writing programs, which aids in improving students' writing abilities and self-assurance. Although these tools provide significant feedback and assistance, there are apprehensions regarding their effect on students' critical thinking and creativity. The review calls for the establishment of explicit standards and ethical principles to ensure the responsible use of AI in academic writing, especially in light of the challenges related to plagiarism detection and intellectual property rights.

2.   METHODOLOGY
2.1.   RESEARCH DESIGN

The current research employs a qualitative research design to investigate students' experiences with the influence of AI tools on their learning. The qualitative approach facilitates a thorough understanding of participants' perceptions and offers rich, detailed insights into how AI tools influence their academic practices and learning processes. Semi-structured interviews will be utilized to collect data, ensuring flexibility in exploring key themes.

2.1.1.   PARTICIPANTS

The study involved undergraduate students from diverse academic disciplines within a single higher education institution. Participants were selected using purposeful sampling. These individuals were deliberately chosen based on their academic backgrounds and their use of AI tools in their educational activities. The selection criteria included familiarity with AI tools, active participation in academic programs, and a willingness to share their experiences. This method ensures the selection of participants who provide valuable and abundant data for the research.

2.1.2.   Data Collection Methods

Data were gathered through semi-structured interviews carried out in person. The interview took roughly 10-15 minutes and adhered to a flexible interview guide to enable participants to expand upon their answers. Seven participants were convened to promote dynamic discussions and knowledge sharing. A thematic approach will be adopted to code and identify recurring patterns and themes within the data. Themes such as advantages and disadvantages will be analyzed to offer an in-depth comprehension of the topic at hand. The inquiries directed at the participants included: What is the influence of AI tools such as ChatGPT on your learning?

a). Prompt: What are the benefits and challenges of AI tools in your learning?

2.1.3.   Research Biases

To reduce research biases, various strategies were utilized. Peer debriefing sessions took place with scholarly colleagues to assess the coding procedure and interpretations. Member checking was additionally employed, permitting participants to examine and confirm the precision of their transcribed responses. These actions strengthened the credibility and reliability of the findings.

3.   FINDINGS

Students participating have encountered situations where their dependence on AI tools has affected their learning experiences. Since many of their responses were quite similar, only a few will be highlighted here to minimize redundancy. The influence of AI tools like ChatGPT and Grammarly on students' learning experiences raises key questions about their effectiveness and their overall influence on educational outcomes.

Participant 1 (student): AI is reliable and efficient. It makes work easy for us, and it provides a summary for every topic that you are requesting to do. But it sometimes provides wrong answers.

Participant 2 (student): It teaches, informs, and gives references; however, there are limited benefits to it, so they ask for payment.

Participant 3 (student): I think AI tools like ChatGPT give a good base to carry out research with adequate examples. However, there are some inaccuracies in the information. Also, some features are accessible only through a subscription.

Participant 4 (student): AI tools like Grammarly help with grammar, and some help in breaking down complex academic texts into simpler terms

Participant 5 (student): Students lack critical thinking when using these tools.

3.1.   Themes

All the findings can be summarised by saying that almost all participants had similar experiences, and their answers had many similarities. However, the following are the themes that came out in the findings of this study;

1. Reliability and Efficiency: AI tools are perceived as reliable and efficient, making students' work easier by providing summaries and facilitating research, although concerns about occasional inaccuracies exist.
2. Accessibility and Cost: While AI tools offer valuable information and references, some participants noted limitations related to payment and subscription models, making these tools less accessible to all students.
3. Enhancement of Learning: AI tools like ChatGPT and Grammarly aid in learning by offering examples, breaking down complex texts, and supporting extensive research. They provide a strong foundation for academic work and help students understand complex concepts.
4. Influence on Critical Thinking: There is apprehension that excessive dependence on AI technologies may hinder the cultivation of critical thinking abilities, making students more dependent on these technologies and less capable of independent analysis.
5. Support for Diverse Learning Needs: AI tools assist in breaking down complex academic texts and are beneficial for students with varying learning needs, including those who struggle with language barriers or need additional support.

3.2.   ANALYSIS AND THEORETICAL CONTEXT

The finding from the current study is that students appreciate the convenience, efficiency, and support offered by AI tools while simultaneously expressing concerns over cost, inaccuracies, and reduced critical thinking, which are closely mirrored in the reviewed literature. For instance, Shaik et al. (2023) emphasize that AI systems leveraging Natural Language Processing (NLP) can personalize learning and adapt to diverse linguistic needs, enabling broader student engagement. This complements the observed theme in the study around AI supporting diverse learning needs, particularly in breaking down complex academic content. Similarly, Mallik and Gangopadhyay (2023) highlight how AI tools boost student productivity and inclusivity, especially for learners facing language or accessibility barriers, which is an aspect confirmed by participants in the study who found tools like Grammarly useful in improving academic writing and comprehension.

Theoretically, the literature supports the role of AI in both constructivist and adaptive learning

paradigms. Tian et al. (2024) show that AI not only aids student learning but also helps educators enhance instructional quality through feedback, thereby creating a dynamic, reciprocal learning environment. This aligns with the participants' acknowledgment of AI as a foundational aid for research and understanding complex topics. However, the study's concerns about AI hindering independent thinking are echoed in Annamalai et al. (2023), who found that while AI chatbots foster autonomy and competence in language learning, they lack emotional intelligence and sometimes produce inaccurate information. This tension supports self-determination theory, which highlights that competence and autonomy must be balanced with meaningful interaction to be truly effective for learning, which is something AI currently lacks

Furthermore, ethical and structural concerns raised in the study findings like subscription barriers and overdependence on AI, are reinforced by Chukwuere (2024), who argues for institutional dialogue and ethical guidelines around AI use in education. Similarly, Aljuaid (2024) call attention to the erosion of critical thinking and originality in academic writing due to AI reliance, an issue directly mentioned by one the participants. These concerns underscore the need for blended learning models that combine AI-enhanced tools with traditional pedagogical strategies, encouraging responsible use of AI while safeguarding students' cognitive development. Therefore, your study not only confirms key trends found in the literature but also adds a student-centered dimension to the broader discourse on ethical, accessible, and pedagogically sound AI integration in higher education.

4.   Conclusions and recommendations

This research delivers a wide-ranging investigation of the influence of artificial intelligence (AI) tools, including ChatGPT and Grammarly, on students' educational experiences within the domain of higher learning. The results highlight AI's capacity to improve efficiency, tailor learning experiences, and cater to a variety of academic requirements, especially for learners with linguistic challenges or those attempting to simplify intricate texts. Nonetheless, the study also identifies difficulties such as restricted accessibility owing to subscription fees, apprehensions regarding data confidentiality, and the potential decline in critical thinking abilities. Although AI instruments offer various prospects for enhancing educational results, they concurrently introduce risks that necessitate careful consideration to guarantee their ethical and fair application.

The qualitative methodology indicates that learners distinguish AI tools as dependable and beneficial for activities such as research, grammar correction, and conceptual comprehension. Concurrently, participants articulated legitimate concerns about excessive dependence on AI technologies, which may hinder their capability to engage critically and creatively with academic materials. This duality highlights the necessity of maintaining a balanced viewpoint when incorporating AI tools into higher educational framework, guaranteeing that they act as facilitators rather than replacements for human competencies.

To maximize the advantages of AI tools while addressing their drawbacks, this research advocates for a blended learning model that merges AI-based techniques with conventional teaching methodologies. Educators ought to integrate critical thinking tasks and promote independent problem-solving to diminish the risk of over-dependence on AI technologies. Furthermore, institutions should allocate resources towards training programs designed to train learners and faculty with the aids to utilize AI tools effectively while cultivating an awareness of ethical issues, such as data confidentiality and algorithmic bias.

Policymakers and designers must prioritize the development of accessible and inclusive AI tools to ensure equitable opportunities for all learners, independent of their socioeconomic background. Furthermore, transparent and secure data management protocols are essential for fostering trust and mitigating privacy concerns. Lastly, future studies should explore the long-term effects of AI incorporation on educational results and the cultivation of essential skills, examining diverse

educational contexts and student populations to provide a comprehensive insight into the role of AI in education.

5.   LIMITATIONS

The findings of this study are influenced by limitations, which may influence their broader applicability and relevance. For instance, focusing on just one institution limits the scope of the study and may overlook different perspectives from various regions.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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