AI Influencing Factors among Students

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Article Info.	Abstract
Dr. Shila Mishra ◆ Member, Province Policy Planning Commission, Madhesh Province Government, Janakpur, Nepal *Email* mishrashila526@gmail.com 	This perspective examines the perceptions and interactions of college students with the emerging field of Artificial Intelligence (AI) in their academic environment. The study aimed to explore the interplay between exposure to AI, trust in AI technology, awareness and knowledge of AI, behavioral intentions, and personal experiences, and how these factors collectively influence students' attitudes and preparedness to integrate AI into their academic pursuits. A considerable portion held post-graduate qualifications, indicating a higher educational background that likely tthat students exhibited a commendable level of proficiency in AI-related concepts and expressed moderate trust in AI technology, crucial for their readiness to adopt AI in educational contexts. Moreover, students demonstrated solid awareness and knowledge of AI, recognizing its potential applications and benefits in various industries, including education. They expressed a proactive willingness to engage in AI-related workshops and activities, indicating strong motivation to incorporate AI into their learning experiences. In conclusion, this study provides valuable insights into the attitudes and preparedness of college students toward embracing AI. The findings have significant implications for educational institutions and policymakers seeking to integrate AI technologies into curricula. *Keywords*: AI, students, academy, review, research scope

Introduction

Artificial intelligence (AI) has emerged as a transformative technology with the potential to reshape various aspects of education. Its integration into educational settings is gaining traction, driven by the need to enhance learning experiences and improve educational outcomes (Mishra, 2023a; Mishra, 2024a). AI technologies, particularly sophisticated language models like ChatGPT, offer innovative solutions that can facilitate personalized learning, provide real-time assistance, and foster interactive engagement between students and educators. The evolution of AI from simple rule-based systems to advanced data-driven and context-aware systems has made it increasingly accessible, even through low-cost smart devices. This accessibility allows for the implementation of AI in diverse educational contexts, particularly in developing countries where achieving universal education is a sustainable development goal. For instance, AI can assist in modifying pedagogical approaches and enhancing educational content delivery (Panigrahi & Joshi, 2020; Alam, 2023). Despite the promising applications of AI in education, there remains a significant gap in understanding students' attitudes and perceptions regarding its adoption. Research indicates that students' acceptance of technology is crucial for its successful integration into educational practices (Davis, 1989; Venkatesh et al., 2003). Factors such

as perceived usefulness, ease of use, and enjoyment play essential roles in shaping students' willingness to engage with AI technologies. However, limited empirical studies have specifically examined these factors within the context of AI adoption in higher education. This review aims to explore the current landscape of AI integration in education, focusing on the perceptions and acceptance behaviors of students towards AI technologies. By investigating these dimensions, this paper seeks to provide insights that can inform educators and policymakers about the effective implementation of AI tools like ChatGPT in academic settings.

Rationale

The rationale for this review stems from the urgent need to bridge the existing gap in literature regarding students' acceptance and adoption behaviors towards AI technologies in higher education and question on Nepalese education through bran drain (Mishra, 2023b). As AI continues to permeate educational environments, understanding how students perceive and interact with these tools becomes critical for their effective integration. Research has shown that exposure to AI significantly influences individuals' attitudes towards its adoption. Greater familiarity with AI technologies—whether through personal use or educational experiences—tends to foster more positive perceptions (Smith et al., 2012). This exposure can occur through various avenues, including interactions with virtual assistants or participation in training programs focused on AI applications. Moreover, the integration of AI is not merely a technological shift but also a pedagogical transformation that requires careful consideration of ethical implications and potential challenges. Concerns regarding loss of control over AI systems, ethical use, and impacts on employment must be addressed to ensure responsible implementation (Fast & Horvitz, 2017; Chounta et al., 2022).This review will employ established adoption theories and models—such as the Unified Theory of Acceptance and Use of Technology (UTAUT)—to frame the investigation into students' attitudes towards AI. By synthesizing existing research and identifying key determinants influencing acceptance behaviors, this review will contribute valuable insights for educators aiming to harness the benefits of AI technologies while addressing potential challenges. Ultimately, this comprehensive exploration will equip stakeholders with the knowledge needed to make informed decisions about integrating AI into higher education curricula. By understanding students' perceptions and readiness to adopt these technologies, educators can design effective interventions that enhance learning outcomes and promote a more personalized educational experience.

Introduction to Artificial Intelligence Technologies

Artificial intelligence (AI) has emerged as a transformative technology with the potential to significantly alter educational practices. This review explores the integration of AI in education, focusing on its applications, benefits, and the challenges associated with its adoption. AI technologies, particularly advanced language models like ChatGPT, are being tested across various educational contexts, providing innovative solutions that enhance teaching and learning experiences. For instance, in developing countries such as India, AI plays a crucial role in achieving sustainable development goals by making education more accessible and personalized (Panigrahi & Joshi, 2020). AI has evolved from simple rule-based systems to sophisticated data-driven and context-aware systems capable of personalizing learning experiences. These advancements enable the creation of adjustable learning environments that cater to individual student needs. The accessibility of AI through low-cost smart devices further democratizes its use, allowing broader populations to benefit from its capabilities (Alam, 2023).

The Role of AI in Education

AI can enhance education in two primary ways:

1. **Educational Process:** AI assists educators by modifying pedagogical approaches and streamlining administrative tasks.
2. **Educational Content:** AI helps determine the types of education needed to meet diverse learner needs.

As higher education faces challenges due to increased enrollment and massification, the integration of AI becomes essential for improving efficiency and effectiveness in educational settings (Chatterjee & Bhattacharjee, 2020).

Benefits and Challenges of AI Adoption

The potential benefits of AI in education include improved learning outcomes, increased student engagement, and enhanced administrative efficiency. However, successful integration requires addressing ethical considerations and practical challenges. Studies emphasize the importance of trust in AI technologies; factors such as perceived reliability, transparency, and ethical design significantly influence user acceptance (Mhlanga, 2023) Despite the optimistic outlook regarding AI's impact on education, concerns about loss of control over AI systems and ethical implications persist. For instance, educators express worries about how AI might affect their roles and responsibilities within the classroom (Fast & Horvitz, 2017). Addressing these concerns through informed discussions and ethical frameworks is vital for fostering a positive environment for AI adoption.

Factors Influencing Acceptance of AI Technologies

Research indicates that exposure to AI significantly shapes individuals' attitudes towards its adoption. Greater familiarity with AI technologies—through personal use or educational experiences—tends to foster positive perceptions (Smith et al., 2012). Educational initiatives that provide insights into the principles and applications of AI are crucial for enhancing public understanding and acceptance. Key determinants influencing students' acceptance of AI include:

Perceived Usefulness. The extent to which students believe that AI will enhance their learning experiences.

Ease of Use. The perceived simplicity associated with integrating AI into their academic routines.

Enjoyment. The intrinsic satisfaction derived from using AI tools.

Perceived Risks. Concerns regarding privacy and ethical implications associated with AI use.

Understanding these factors is essential for designing effective interventions that promote the successful integration of AI technologies in educational settings (Venkatesh et al., 2003).

Ethical Considerations and Future Directions

As AI continues to evolve within educational contexts, ethical considerations must be prioritized. Ensuring fairness, accountability, and transparency in the deployment of AI technologies is critical for building trust among users (Smith et al., 2012). Furthermore, there is a need for continuous adaptation to technological advancements while maintaining a focus on ethical values. This review highlights the necessity for ongoing research into the implications of AI in education. Future studies should explore innovative assessment methods that leverage AI capabilities while addressing potential challenges related to creativity and originality in student work (Shidiq, 2023).

First-hand Experiences with AI

Existing algorithms and systems often struggle to fully comprehend the complexities of human processes, leading to negative outcomes. This necessitates research into human perceptions of algorithm-driven procedures. This article proposes a theoretical model of technology adoption that explains students' use of AI-based assessment tools, building upon the Technology Acceptance Model (TAM) and incorporating constructs such as perceived usefulness, ease of use, attitude, trust, resistance to change, and subjective norms (Linardatos et al., 2021).

Factors influencing the use of AI chatbots can be categorized into three groups: those related to the chatbot, the user, and the situational context. Chatbot-specific factors include functional, system, and anthropomorphic features. Performance-related functional features significantly affect customer satisfaction; effective chatbots that understand requests and provide relevant responses enhance customer experience, mitigating negative perceptions like intrusiveness (Nicolescu & Tudorache, 2022).

The study indicates that technologies such as ChatGPT can improve academic writing and research efficiency, though concerns regarding authenticity and credibility arise. It underscores the necessity of ethical considerations and the role of human intelligence in academic contexts (Dergaa et al., 2023).

In organizational settings, trust in AI, particularly in chatbot functionality and data protection, is essential for adoption. Research highlights that employee trust fosters greater utilization of chatbot technology, emphasizing the need for organizations to cultivate trust to optimize work practices (Wang et al., 2022).

Educators are encouraged to explore how generative AI can enhance learning experiences and outcomes, prompting discussions on necessary skills and the future of teaching practices in higher education (Gimpel et al., 2023).

The rise of generative AI also prompts social workers to consider ethical implications and potential benefits in their field, highlighting the profession's need to harness technology for social good (Marquart & Goldkind, 2023).

While there is concern about the rapid adoption of generative AI, it can be viewed as a transformative educational resource. Collaborative efforts are essential to address emerging issues and fully leverage AI's potential for personalized learning experiences (Yu & Guo, 2023).

Personal experiences with AI significantly shape perceptions of its utility. Positive interactions can foster favorable attitudes, while negative experiences may erode trust (Smith, 2012). Personalization in AI interactions enhances user experience and affinity towards the technology

The ongoing evolution of information technology necessitates technology-based learning to keep pace with societal changes. The field of AIEd is poised to address critical issues surrounding the integration of technology in education and its broader implications across various disciplines (McCalla, 2000).

As AI and autonomous systems become increasingly prevalent, their revolutionary potential is accompanied by ethical risks that must be carefully managed to preserve a human-centric society (Gill, 2020).

Factors Influencing Attitudes Towards AI Adaptation in Education

Artificial Intelligence (AI) has emerged as a transformative technology with the potential to revolutionize various facets of society, particularly in education. This empirical review synthesizes findings from several studies to elucidate the factors influencing individuals' attitudes toward the adaptation of AI in educational settings. The review focuses on the dependent variable of attitudes towards AI adaptation, with key independent variables including exposure to AI, trust in AI technology, awareness and knowledge, behavioral intentions, and personal experiences with AI.

Exposure to AI

Studies by Alam (2023) and Panigrahi and Joshi (2020) highlight the significant impact of exposure to AI on attitudes and adaptation within educational contexts. The presence of low-cost smart devices and the integration of AI into teaching practices contribute to fostering positive attitudes toward AI in education.

Trust in AI Technology

Research conducted by (Wang et al., 2022; Fast & Horvitz, 2017; Strzelecki, 2023) underscores the critical role of trust in AI technology in shaping attitudes towards its application in education. Trust is established through considerations of functionality, reliability, data protection, and ethical use, significantly influencing individuals' willingness to adopt AI-driven educational tools.

Awareness and Knowledge

Chatterjee and Bhattacharjee (2020) emphasize that stakeholders' awareness and knowledge of AI are pivotal for its adoption in higher education. Educated stakeholders are more likely to recognize the potential benefits and applications of AI, thereby fostering positive attitudes towards its integration in educational settings.

Behavioral Intentions

Strzelecki (2023) establishes that behavioral intentions significantly impact the adoption of AI

tools in teaching and learning. Individuals who express a clear intention to use AI technologies are more likely to exhibit positive attitudes and adapt to their incorporation in educational practices.

Personal Experiences with AI

Studies by Shidiq (2023), Kuleto et al. (2021), and Mhlanga (2023) suggest that personal experiences with AI—particularly through its application in work practices or creative writing tasks—influence attitudes toward AI in education. Positive experiences contribute to a favorable perception of AI's potential in educational contexts.

Key Findings

Observational analyses indicated that all independent variables significantly impacted students' attitudes and willingness to adapt to AI. Notably, exposure to AI, awareness and knowledge, behavioral intentions, and personal experiences were identified as strong predictors of positive attitudes and adaptation towards AI. This aligns with findings from Kaya et al. (2022), which suggest that positive attitudes toward AI are bolstered by subjective knowledge and computer usage, while negative influences stem from AI learning anxiety.

Regression analyses further identified perceived usefulness and perceived ease of use as critical factors shaping students' attitudes towards AI. These results corroborate prior research, underscoring the importance of these constructs in technology adoption, including AI applications.

Comparison with Other Studies

The findings resonate with Sit et al. (2020), who explored similar themes among medical students in the UK. Both studies emphasize the role of exposure, awareness, and knowledge in influencing attitudes toward AI. Students with extensive exposure and understanding are more likely to develop favorable perceptions and adapt positively to AI technologies. Furthermore, Sit et al. (2020) noted that formal education on AI significantly influences students' career aspirations in fields involving AI, highlighting the value of educational initiatives in shaping positive attitudes.

Additionally, trust in AI emerged as a nuanced factor in both studies. While trust is essential, it alone does not fully determine attitudes towards AI, a conclusion supported by the Kathmandu Valley study's rejected hypothesis. Both sets of findings advocate for robust educational programs that provide hands-on experiences with AI, fostering constructive attitudes and effective adaptation among students. The project based learning as practiced in Kathmandu College of Management could be a better solution for creating Ocean of Knowledge in upcoming Artificial General Intelligence (AGI) for student involvement (Mishra, 2023c&d). Mental colonialism for technologically less advance country seems to be a burning challenge as it mislead the knowledge and information system through AGI (Mishra, 2023 e&f).

The research conducted by Moldt et al. (2023) also complements these findings, particularly in the context of medical education. It emphasizes the necessity of integrating AI education into medical curricula, equipping future healthcare professionals with the skills to engage effectively with AI. Moldt et al.'s study found that German medical students exhibited a positive initial attitude towards clinical AI, mirroring the favorable attitudes observed in Kathmandu Valley among students with higher exposure and awareness of AI.

Concerns and Reservations

However, both studies highlight student concerns regarding AI implementation. In Germany, students expressed anxieties about data protection and the potential for diminished personal patient interactions due to AI. This concern echoes the findings in Kathmandu Valley, where trust in AI did not emerge as a decisive factor in shaping attitudes. Such insights emphasize the need for comprehensive educational enhancements in medical curricula to prepare future physicians not only to implement AI but also to navigate its ethical implications in patient care.

Baigi et al. (2023) further contribute to this discourse by revealing a division in attitudes among healthcare students towards AI. While many

exhibited a positive outlook, a subset viewed AI as a potential threat to their fields. This duality reflects sentiments from the German study, where medical students expressed both optimism and apprehension regarding AI. These shared concerns highlight the necessity of addressing anxieties surrounding AI in both healthcare and academic contexts, including Kathmandu Valley.

Implications for Education

The universal need for structured AI education emerges from the findings across these studies. Students in Kathmandu Valley expressed a desire for comprehensive teaching on AI, aligning with Baigi et al.'s emphasis on the importance of educational resources. This calls for educational institutions to develop curriculum and training that equip students with the necessary knowledge and skills for successful AI integration, regardless of their discipline. Nepal being agriculture country, it need through assessment of agriculture policy and agricultural business opportunity under artificial intelligence and general artificial intelligence such as virtual agriculture (Mishra, 2024 b & c).

Conclusion

This empirical review synthesizes evidence from multiple studies, highlighting that attitudes toward the adaptation of artificial intelligence (AI) in education are significantly influenced by factors such as exposure to AI, trust in AI technology, awareness and knowledge, behavioral intentions, and personal experiences with AI. These elements interact to shape individuals' perceptions of AI's role in educational contexts. Recognizing the importance of these variables is essential for educational stakeholders aiming to implement AI-driven tools effectively, thereby enhancing learning outcomes and experiences for both students and educators.

Future research should aim to expand the sample size and diversity by including participants from various educational institutions, socio-economic backgrounds, and geographical regions within Nepal. Additionally, cross-cultural comparative studies could provide valuable insights into how attitudes toward AI differ across various contexts. As AI technology continues to evolve, investigating the impact of emerging technologies—such as virtual and augmented reality—on students' attitudes and adaptation will be a promising area for exploration.

Longitudinal studies could further enhance understanding by tracking how attitudes and perceptions of AI change over time among college students. Incorporating qualitative research methods, such as in-depth interviews or focus groups, could provide richer narratives and nuanced perspectives on students' experiences with AI.

Finally, exploring AI applications across different educational disciplines may yield tailored insights beneficial for educators and policymakers. By addressing concerns related to privacy and control, and by fostering trust, stakeholders can create a conducive environment for leveraging AI's full potential in education. Continued exploration of these themes will be crucial as educational institutions navigate the rapidly evolving technological landscape.

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