

AI Acceptance for Learning in Higher Education: A Review of Human Capability, Trust, Governance, and Self-Efficacy Factors

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Abstract

Artificial Intelligence (AI) is changing higher education in many ways, through intelligent mentoring systems, enabling adaptive learning platforms, acquiring knowledge on analytics by learning, automated assessment, and generative AI tools. As this AI started tremendously incorporated into educational settings so it is important to know which factors effect AI Acceptance for Learning. The current study reviews and combines the literature on Artificial intelligence acceptance for educating in university education (AI Literacy, AI Experience, Responsible AI Governance, Trust in AI, and AI Self-Efficacy). We followed a Systematic Literature Review (SLR) process to recognize, filter and analyze similar studies. In this paper the findings shows that AI Literacy and AI Experience raise the learners' preparedness and confidence in intriguing with AI technologies at the same time Responsible AI Governance promotes transparency, accountability, fairness, and ethical implementation by establishing trust. The important predictor in AI Acceptance for leaning is trust and AI Self-Efficacy is positively impacting the behavioral intention and engagement. The review also points to the need for integrated frameworks that take account of capability, governance, trust and behavioural factors at the same time. From the observations it provides valuable understandings for researchers and Graduate education institutions interested in promoting responsible and effective adoption of Artificial intelligence in teaching and learning.

Keywords: Artificial Intelligence, AI Acceptance for Learning, AI Literacy, AI Experience, Responsible AI Governance, Trust in AI, AI Self-Efficacy, Higher Education.

1. Introduction

Machine Intelligence (AI) is significantly changing the university education through various operations such as tuitions collaborated with digital systems, adopting the digital learning pathway, automation in the assessment, learning analytics, and generative AI tools. Because of these technologies there is a significant increase in personalized learning experiences, improve in educational outcomes, and tremendous support in instructional decision-making (Holmes et al., 2019; UNESCO, 2023). As educational environments are integrating with AI due to this integration it has become a crucial topic in research to understand the factors influencing students' acceptance of digital intelligence-enabled learning systems. The current literature review shows that the AI Literacy, AI Experience, Responsible AI Governance, Trust in AI, and AI Self-Efficacy are the influential factors of AI adoption and acceptance (Long & Magerko, 2020; Ng et al., 2021; Dignum, 2021; Glikson & Woolley, 2020). The factors of Human capability impact the readiness of learners to engage with AI technologies where as governance mechanisms and trust form perceptions of reliability, fairness, and transparency at the same time behavioural factors such as self-efficacy influence willingness of the learners to adopt AI-supported tools for learning. All these factors are examined in isolation which explains the Acceptance of AI for Learning for the growing academic attention. Over all this review combines the existing literature to identify major themes, research gaps and future directions for AI Acceptance for Learning in College education.

2. Literature Review

2.1 Human Capability Factors

The factors of Human capability mainly include AI Literacy, AI Experience, digital readiness, and competence. AI literacy means its an individual's ability to understand the concepts, applications, opportunities, limitations, and ethical implications of Digital Intelligence. (Long & Magerko, 2020; Ng et al., 2021). Students with high literacy in AI shows with high confidence levels, readiness, and willingness to use the AI-enabled educational technologies (Chiu, 2023; Kong et al., 2024). The current studies shed some light on literatures reviews shows the significance of how digital literacy is becoming an important competency in higher education, making the learners to critically evaluate Artificial intelligence outputs and responsible using of use AI tools (Laupichler et al., 2022; Kohnke et al., 2023). Along with the usage of cognitive computing experience increases the awareness while using the AI systems before exposing to AI technologies it improves learners' confidence and encourages effective utilization of AI-supported learning tools (Kasneci et al., 2023; Tlili et al., 2023).

The further research emphasizes on digital readiness and technological competence always support successful AI adoption by emphasizing the adaptability and technology readiness (Scherer et al., 2021; Bond et al., 2024). Overall, these capability-related factors influence a dominant role in making the students to prepare for intelligent systems -enhanced learning environments.

2.2 Responsible AI Governance and Trust in Artificial intelligence

For the design and implementation of AI system Responsible AI Governance highlights transparency, accountability, fairness, privacy, and ethical oversight (Floridi et al., 2018; Dignum, 2021; UNESCO, 2023). bias, misuse of data, and lack of accountability can be reduced with accurate and proper Governance mechanisms by strengthening institutional credibility.

To Promote and highlight responsible AI adoption many scholars have highlighted the importance of ethical frameworks and governance guidelines (Jobin et al., 2019; OECD, 2020; Ryan & Stahl, 2021). The factors Transparency and explain ability are mainly important because users are most likely to trust systems whose decisions are understood and justified (Siau & Wang, 2018; Meske et al., 2022). The main important determinant in technology acceptance is Trust in AI. This factor Trust reduces uncertainty and increases users' willingness to depend on AI systems for learning activities (Mayer et al., 1995; Glikson & Woolley, 2020). Majority of the Studies shows that explainability, reliability, and transparency significantly affect trust formation and simultaneously impact AI adoption behaviour (Shin, 2022; Choung et al., 2023). Apart from the importance, trust is basically examined as a single-dimensional construct by creating opportunities for further investigation into its multidimensional nature.

2.3 AI Self-Efficacy and Acceptance

AI Self-Efficacy means it's an individual's confidence in using AI technologies efficiently. Depending on Social Cognitive Theory, self-efficacy which influences behavioural intention, engagement, and technology adoption (Bandura, 1986). Students who perform high experiment with AI applications have high AI self-efficacy which helps them to overcome learning challenges, and sustain engagement in digital intelligent -supported environments (Teo et al., 2018).

Research on Technology acceptance shows that behavioural intention is affected by expected benefits, ease to use, and confidence in technology utilization (Davis, 1989; Venkatesh et al., 2003), learning engagement and AI – enables educational system are influenced by Self-efficacy which contributes toward AI-enabled educational systems (Ifenthaler & Schumacher, 2016). At the same time AI proficiency serves as an important behavioural factor influencing AI Acceptance for Learning.

3. Research Methodology

The current study is based on Systematic Literature Review (SLR) approach to combines the existing knowledge on AI Acceptance for Learning in higher education. The current related studies were identified through major academic databases and carefully examined based on relevance, quality, and alignment with the study purpose. The current literature reviews mainly focused on AI Literacy, AI Experience, Responsible AI Governance, Trust in AI, and AI Self-Efficacy. AI Acceptance for learning was associated with various research gaps, common themes and theoretical contributions by analysing various selected studies.

4. Results and Discussion

From the various studies the literature review revealed three important thematic categories which influence AI Acceptance for Learning in higher education.

Table 1. Key Themes Identified from the Literature

Theme	Key Variables	Major Findings
Human Capability Factors	AI Literacy, AI Experience	Improve readiness, confidence, and willingness to use AI technologies
Responsible Governance	Transparency, Accountability, Fairness, Privacy	Enhances trust and institutional confidence
Behavioural Factors	Trust in AI, AI Self-Efficacy	Influence engagement, behavioural intention, and acceptance

Source: Author

All these themes collectively explains that AI acceptance is influenced by the interaction of learner capabilities, institutional governance mechanisms, and behavioural factors.

The study shows that AI Acceptance for Learning is impacted by the combination of individual, institutional, and behavioural factors. AI Literacy and AI Experience is rapidly increasing the learners' readiness for AI-supported education and at the same time Responsible AI Governance is promoting the confidence through ethical and transparent implementation practices.

Here, Trust consistently is emerging as a Primary mechanism connecting governance practices and learner acceptance. Likewise, AI Self-Efficacy impacts students' confidence in utilizing AI technologies and facilitates to stronger behavioural intentions toward AI adoption.

Table 2. Research Gaps Identified from the Literature

Research Gap	Suggested Future Direction
Lack of integrated frameworks	Develop comprehensive AI Acceptance models incorporating capability, governance, trust, and behavioural factors
Trust treated as a single construct	Validate Trust in AI as a multidimensional construct comprising reliability, transparency, explainability, and fairness
Limited mediation studies	Examine the mediating role which is the Trust in Artificial intelligence between governance mechanisms and AI acceptance
Limited moderation studies	Investigate the moderating effect of Digital intelligence Self-Efficacy on AI acceptance relationships

Research Gap	Suggested Future Direction
Limited higher education-specific evidence	Conduct empirical studies across diverse higher education contexts and disciplines

Source: Author

5. Implications

The entire review literature shows that the higher education institutions should invest in AI literacy development, experiential learning opportunities, and responsible AI governance frameworks. Developing students' competency in AI can increase confidence and willingness to adopt and engage in AI-enabled learning systems. All the Institutions should concentrate on introducing and establishing transparent policies about data privacy, fairness, accountability, and usage of ethical AI to increase trust and encouraging the students for responsible adoption of AI.

Educators can design more learning environments with the support of AI which encourages hands – on – interaction with AI tools by making the students to increase their AI self-efficacy and readiness for learning by using AI. The findings of the current study is also showing the light on the importance of integrating governance mechanisms with learner capability development to encourage sustainable and responsible AI adoption in college education.

6. Conclusion

The current literature is focussing on AI Acceptance for Learning in higher education by exploring the roles of AI competency, Digital Intelligence Experience, Responsible smart technologies Governance, Trust in AI, and AI Self-Efficacy. The findings of the study also shows that the human capability factors increasing the learners' readiness and confidence to engage with AI technologies at the same time responsible governance mechanisms promote transparency, fairness, and accountability by strengthening confidence in Automated Intelligent systems.

Trust in smart intelligence is emerging as a crucial factor in influencing the Artificial Intelligence acceptance and also AI Self-Efficacy supporting to engage the students toward AI-enabled learning and supporting the behavioural intention also for AI learning. The current review identifies crucial research gaps which includes the necessity for integrated theoretical frameworks, multidimensional assessment of trust, and greater exploration of mediation and moderation relationships. Identifying and addressing the gaps through future empirical studies which contributes to a rich understanding of AI Acceptance for Learning and supporting the effective implementation of AI technologies in higher education.

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