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A Qualitative Study on AI Tool Adoption in Higher Education: A Cross-National Perspective

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Abstract

Artificial Intelligence (AI) is currently integrated into most sectors, including education. AI tools within Higher Education (HE) have been shown to enhance students' academic performance, learning outcomes, and research productivity. The study addresses the adoption and application of AI tools in HE based on comparison of experiences of two nations. It is centered on exploring perceptions and challenges of teachers and students in integrating AI into pedagogical practices. Researcher adopting a qualitative research approach. Data were collected through interviews and focus groups such that there could be a deep understanding of the users' experience. Results show the cross-national difference in issues like awareness, accessibility, etc. for integrating AI. Research states that AI tools imply huge promise, and their successful use depends on digital literacy, policy contexts, and institutional readiness. On the basis of the result, the outcomes that contributed towards the policy makers are the Generative AI in the Academic syllabus at the tertiary level. In the future, a quantitative method will be added to this research to ensure high accuracy in this research.

Keywords

AI tool adoption, Cross-National Study, Higher Education, Stakeholders, Learning Outcome.

Introduction

Artificial Intelligence (AI) has increasingly transformed education practices globally, changing the way knowledge is developed, exchanged, and used practically. In HE, AI applications like ChatGPT, Grammarly, and adaptive learning systems are reinforcing the teaching effectiveness, students' engagement, and research productivity (Zawacki-Richter et al., 2019). In spite of this hasty integration, the extent of adoption differs across countries owing to variations in technological infrastructure, digital literacy, and institutional policies (Holmes et al., 2022). Considering these differences is vital for framing strategies that encourage equitable and effective

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AI implementation in academia. This study discovers the cross-national adoption of AI tools by using a qualitative approach, concentrating on the experiences of professors and students. The objective is to discover the commonly used AI tools amongst stakeholders and observe their perceptions and experiences regarding the amalgamation of AI tools in higher education, and to find the major challenges faced by HE stakeholders in using AI tools across nations. And the interrogation for the research is which tools the stakeholders frequently use, and how the stakeholders perceive and experience the incorporation of AI tools in higher education? And what are the difficulties the stakeholders face while using the AI tools across the nation?

Methodology

This study employed the qualitative study design to reveal adoption of AI tools in HE in India and Malaysia. Data were gathered using open-ended questions on Google form and phone call interviews, allowing participants to express freely their perceptions, experience, and challenges about AI practice. The researcher, students, and professors utilized the researcher go with convenience sampling technique because of the respondents' willingness and availability to participate in this research. The study had the goal of gathering varying perspectives from both countries to be able to understand the similarities and differences of adopting AI. Responses were formalized, ready to be analyzed via word cloud visualization. Word clouds are effective in summarizing qualitative data by highlighting and extrapolating participants' narratives' ideas (McNaught and Lam 2010). Attested to by (Zawacki-Richter et al., 2019) and (Holmes et al., 2022), this visualization presents a priceless window in interpreting qualitative data and gaining emerging patterns in AI adoption in educational environments.

Results and Discussion

Result:

Figure 1. AI Tools and User Perceptions

The word cloud was produced by MAXQDA, and it gives a visual overview of the practice of AI tools and the perception of users in embracing AI tools in countries. As evidenced in Figure 1 and the frequency of the word illustrated in Table 1. Both Table 1 and Figure 1 showed that ChatGPT (48) was the most recurrently mentioned tool, suggesting its central role in academic and research activities. Other usually cited terms, such as Perceived (26), “Use”, and “Usefulness”, apex

stakeholders' attention on the practical value and perceived benefits of AI integration. Tools like Semantic Scholar, Scispace, Grammarly and Microsoft Copilot were also frequently referenced, reflecting their widespread adoption for teaching, learning, and research support. The prominence of words like "Comfort" and "User" indicated positive experiences and adaptability toward AI usage. Overall, the analysis suggests that stakeholders in India and Malaysia view AI tools as highly useful, user-friendly, and essential for enhancing learning and research engagement.

Table 1. AI Tools and User Perceptions

Word	Frequency	Rank
ChatGPT	48	1
Perceived	26	2
AI	16	3
use	14	4
SemanticScholar	11	5
Comfort	10	6
Scispace	10	6
Grammarly	9	8
User	9	8
usefulness	8	10

Figure 2 and Table 2 show the challenges faced by the stakeholders while using the AI tools in their academics.

Figure 2. Challenges of Using AI Tools

The recurring themes represent the major challenges that stakeholders face in adopting AI tools across nations. The most frequent term, like Limited (15), Lack (11), and Learning (10), highlights major constraints in resources, institutional readiness, and pedagogical adaptation for AI adoption across the nation. Other recurring words, such as Issues, Concerns, and Insufficient, indicate persistent challenges in data governance, ethical compliance, and assessment frameworks. The presence of AI, Data, and Design further reflects the struggle to align technological innovation with educational needs. On the whole, analysis indicates that stakeholders are confronted with cross-national differences in infrastructure, talent, and support systems and the necessity for enhanced cooperation, harmonized policies, and capacity development to guarantee successful AI integration in universities.

Table 2. Challenges of Using AI Tools

Word	Frequency	Rank
Limited	15	1
Lack	11	2
Learning	10	3
Issues	8	4
AI	7	5
Learning	7	5
Concerns	6	7
Data	6	7
Design	6	7
Assessment	5	10
Data	5	10
Education	5	10
Educational	5	10
Insufficient	5	10
Research	5	10

Discussion:

The results reveal that ChatGPT, Semantic Scholar, and Grammarly are the most widely used AI tools and emphasize their increased relevance in educational and research practice in India and Malaysia. The terms like perceived usefulness and comfort reflect their importance in correspondence with the Technology Acceptance Model (TAM), as ease of use and perceived usefulness significantly impact adoption. Yet, recurring challenges like restricted access, institutional disaffection, and learning deficits point to disparities in AI readiness, aligning with the Unified Theory of Acceptance and Use of Technology (UTAUT). These results underscore the importance for policymakers and universities to promote digital literacy, define AI integration policies, and commit to Capacity-Building initiatives to support equal and responsible AI adoption in higher education. Engagement in ethical and pedagogical systems will also help sustain sustainable and inclusive digital transformation in various academic settings

Conclusion

Cross-national comparison reveals that although AI tools have become central to academic innovation, their usage is patchy because of infrastructural and policy constraints. Institutional support and digital literacy can enhance user confidence and fairness in using AI. Eventually, fostering a stable ecosystem that syndicates technological advancement with ethical and pedagogical guidance will certify that the transformative potential of AI in HE is fully grasped.

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