Embracing Artificial Intelligence as a Catalyst for Change in Reshaping Malaysian Higher Education in the Digital Era: A Literature Review

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Abstract: The rapid evolution of generative artificial intelligence (AI) is transforming the landscape of higher education globally, and Malaysia is poised to be at the forefront of this revolution. Generative AI, a subset of AI capable of understanding and producing human-like text, images, and code, offers unprecedented potential to reshape teaching, learning, and research in higher education institutions (HEIs). This paper explores the transformative power of generative AI within the Malaysian HEI context, focusing on its practical applications and implications for personalized learning, digital inclusion, and the evolving roles of educators. Specifically, it investigates how generative AI tools can be leveraged to enhance personalized learning experiences, foster digital inclusion, and empower educators. Through a systematic literature review, the practical applications of generative AI tools, such as ChatGPT, Copilot, Gemini, and Claude, in fostering personalized learning and inclusive educational experiences were examined, along with their impact on the roles of educators. The impact of these tools on the roles of educators is also investigated. Our findings highlight both the potential benefits and challenges of AI integration in higher education, including ethical considerations and the risk of perpetuating existing biases. Through a systematic literature review, this paper identifies both the promises and challenges of integrating generative AI in higher education. Generative AI tools hold immense potential to transform Malaysian higher education by personalizing learning experiences, fostering inclusivity, enhancing teaching effectiveness by providing tailored feedback and support, promoting creativity through collaborative projects and content creation, and expanding access to education for diverse learners. However, challenges like ethical concerns, bias, plagiarism, and over-reliance on technology necessitate proactive measures. By addressing these challenges, Malaysia can harness generative AI to equip students for the future and enhance higher education quality.

Keywords: Artificial Intelligence, Higher Education, Malaysia, Personalised Learning, Accessibility, Innovation

1. Introduction

The rapid evolution of artificial intelligence (AI) presents a transformative opportunity for institutions of higher education worldwide. The surge in AI research focused on higher education

highlights its potential to reshape the educational landscape (Crompton & Burke, 2023). Within the dynamic digital era, AI's capacity to personalise learning experiences, adapt instructional strategies, and drive innovation is undeniable. Malaysia, as a technologically-progressive nation, is uniquely positioned to leverage AI, but its successful integration requires careful consideration of both opportunities and complexities (Delgado et al., 2020; Kavitha, 2023).

The synthesis of AI in education can have positive and negative consequences. While the potential benefits of AI are widely acknowledged, there's a need for nuanced discussions surrounding its implementation within higher education settings. Current literature emphasises the transformative impact of AI on teaching and learning relationships, as well as the importance of addressing ethical concerns, commercial interests, and shifts in agency within the educational sphere. The role of educators in this AI-driven transformation is crucial, and strategic initiatives must support their understanding and readiness to effectively integrate AI technologies. Malaysia can establish itself as a leader in AI-driven education by proactively addressing these complexities. Clear policies guiding AI integration, dedicated funding for the development of AI within universities, and significant investment in faculty training are essential (Crompton & Burke, 2023). To ensure a smooth transition, professional development, pilot programs, and AI-specific courses are needed (Shi & Xuwei, 2023). Furthermore, promoting open dialogue amongst educators, showcasing best practices, and fostering a collaborative environment centred around AI will build a positive, forward-thinking culture within institutions.

This paper explores the multifaceted potential of AI to reshape Malaysian higher education in the digital era. It examines strategies for personalised learning, the impact on educators, and the ethical considerations surrounding AI use. Additionally, the paper proposes recommendations for policy initiatives and capacity-building programs to ensure Malaysia realises the full benefits of AI integration within its higher education institutions, while addressing concerns raised in recent scholarship (Chan, 2023).

2.   Literature Review

The field of AI in education (AIED) ranges from weak to medium strong narrow AI. AIED has not gone beyond narrow AI at the moment as the next level, general AI, deals with solving problems at a human-level or beyond (Humble & Mozelius, 2019). This section reviews literature to provide a trend of AIED as general and in Malaysian context.

AI has its early adoption and exploration stage in 1990s, beginning as the Intelligent Tutor System. AI primarily focused on personalised instruction and feedback to students, deploying the tutor in class. AI tutor was developed with cognitive model to construct instruction to the students in problem-solving interface and provide immediate feedback (Anderson et al., 1995). In 2000s, AI was integrated into educational management systems such as Learning Management Systems and educational data mining. The shift in technology has enabled the creation of adaptive learning environments and automated grading systems in higher education institutions. This has reduced the workload on educators, assisted educators in tailoring educational experiences to individual student needs and providing quicker feedback to students. The rise of educational data mining allowed for the analysis of student data to improve learning outcomes and predict student academic performance. Research has shown that these advancements contribute to more effective teaching and learning by providing insights that were previously unattainable (Kuka et al., 2022). In 2010-2020s, AI has reached maturation and diversification stage. The integration of AI in higher education can be seen in Massive Open Online Courses (MOOCs), AI-powered educational robotics and virtual labs, more sophisticated AI-driven personalised learning platforms, offering immersive and interactive learning experiences in higher education. Learning analytics has become a significant trend, and AI is being used to analyse educational data to enhance teaching and learning experiences. AI also started to automate administrative tasks, including student enrolment, advising, and resource allocation, improving operational efficiency in higher education institutions (Zawacki-Richter et al., 2019).

Malaysia is on the cusp of the Fourth Industrial Revolution (4IR), characterised by the fusion of advanced technologies like AI, IoT, Big Data Analytics, Augmented Reality, Cybersecurity, Simulation, Cloud Computing, Additive Manufacturing, System Integration, and Advanced Materials (*National Policy on Industry 4.0.*, 2018). This technological transformation is fundamentally altering various aspects of life, work, and communication. The Malaysian Education Blueprint Plan (PPPM) 2013-2025, particularly under Shift 7, aims to leverage ICT to enhance the quality of learning across Malaysia by promoting self-directed learning and expanding access to high-quality teaching. The ICT Transformation Plan (2019-2023) supports these goals by fostering an innovative, dynamic, and high-performing workforce. This plan aligns with Malaysia's digital capabilities to advance the educational agenda.

3.   Methodology

Literature review has been widely accepted in social and management research as a typical methodology for advancing knowledge on specific topics (Snyder, 2019). This study was carried out based on a systematic review of relevant previous studies that focus on research arguments about the issues and benefits associated with AI in education. The methodological framework was established based on three research questions: (a) What are the roles of AIED? (b) What are the impacts of AIED (e.g. roles of educators, ethical challenges, assessments) (c) What are the AI strategies for higher educational enhancement?

In order to map the state-of-art of the AIED, the systematic review was conducted on previous studies from 2020 to 2024, spanning recent four years. Relevant papers published in academic (peer-reviewed) journals and review papers in the education field were included in the literature search. Three important phases, namely, Phase 1: Identification, Phase 2: Screening and Phase 3: Eligibility were conducted for the literature search. In the first phase, Scopus was selected as the main publication database to locate the empirical studies. Other publication databases were also utilized to ensure a comprehensive search, including Web of Science, IEEE Xplore, ERIC, and Google Scholar. These additional databases were primarily used to locate full-text articles and supplement the search conducted in Scopus. Important keywords and phrases related to research questions were employed to filter the empirical studies from the field of education. The typical search string entered in the Scopus database was AUTHKEY ((("AI") OR ("AIED") OR ("artificial intelligence")) AND (("higher education") OR ("university"))). The inclusion criteria for literature search were defined: (i) the studies were published from 2020 to June 2024; (ii) the studies are related to AI applications in the field of higher education; (iii) the studies are published in peer-reviewed journals or review papers, (iv) the studies are empirical research; and (v) the studies are published in English.

In phase 2, inclusion criteria to have terms such as "roles", "impacts", "ethics", or "strategies" in publication titles was added in the first screening, significantly reducing the numbers of literature. The identified articles were then organised and stored for easy access and analysis, using EndNote. Further screening was conducted by assessing the relevant title and abstract of the articles, with one (1) article being excluded. In phase 3, the title, abstract and full text of the articles were assessed for eligibility based on the fulfilment of the inclusion criteria, which aligned with the research questions. There are limitations in the literature review methodology due to some biases that might exist in the searching and screening process, publication bias, language restrictions (e.g., only English-language articles), or limited access to full articles. Figure 1 shows the methodology flow for this study.

IDENTIFICATION	SCREENING		ELIGIBILITY	
Articles searched through database N = 515	Potential articles identified without duplicate N = 53	Title and abstract screening N = 52	Full text assessed for eligibility (fulfil inclusion criteria) N = 31	Articles included N = 31
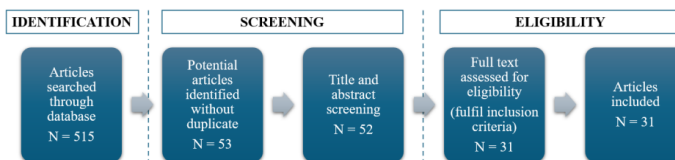
Figure 1: Three phases in the methodology

4.   Results and Discussion

Figures 2 and 3 visualises the network of keyword occurrence, co-authorship per country and the trends of empirical studies by year between 2020 to 2024 concerning AI and higher education. Based on the first phase of the literature search from the Scopus database (N=515),the number of publications generally increased along the years with a drastic upward trend after the year 2022. The initial search across all databases yielded a total of 515 documents. Specifically, 120 papers were retrieved from Scopus, 85 from Web of Science, 50 from IEEE Xplore, 30 from ERIC, and the remaining from other sources including SAGE Journal, SpringerLink, and Google Scholar. Common associated keywords with identified literature are machine learning, chatbot, large language model, algorithm and complexity, assessement, big data, academic integrity, ethics etc. Many countries have published documents related to AIED particularly China, United State, India, Saudi Arabia, United Kingdom, Spain etc. After Phase 2 and Phase 3, 31 relevant articles were reviewed.

Figure 2: Network Visualisation of keywords occurrence (left) and co-authorship per country concerning AI and higher education (right)

Figure 3: Documents published by year (bottom) (N=515) (Source: VosViewer)

4.1 RQ1: Roles of AI in Higher Education

Tables 1 to Tables 3 show the identified findings based on the three research questions. Table 1 shows the identified roles of AI in higher education, which are mainly categorised into the enhancement of learning experiences and attributes, intelligent teaching system, intelligent assessment system, automation in administrative processes and decision-maker.

Table 1: The roles of AI in higher education

Role	Sub-role	Articles
1. Enhancement of learning experiences and attributes	1.1 Personalising learning experiences	(Chaplot et al., 2016; Gallent-Torres et al., 2023; Gibson et al., 2023; Grájeda et al., 2023; Gupta, 2021; Jian, 2023; Niu et al., 2024; Ojeda et al., 2023; Slimi & Carballido, 2023b)
	1.2 Improved learning attributes (e.g. comprehension, creativity, research and productivity)	(Grájeda et al., 2023; Kranz & Abele, 2024; Ojeda et al., 2023)
2.Intelligent teaching system	2.1 Independent tutoring and supervision	(Essel et al., 2022; Grájeda et al., 2023; Kranz & Abele, 2024; Ma et al., 2023; Mulder et al., 2022; Niu et al., 2024; Ojeda et al., 2023)
	2.2 Innovative teaching and learning approaches and contents (e.g. curriculum, learning management system, teaching materials)	(Gallent-Torres et al., 2023; Grájeda et al., 2023; Jokhan et al., 2022; Kranz & Abele, 2024; Slimi & Carballido, 2023b)
3.Intelligent Assessment system	3.1 Automated design and grading of assessments	(Beggrow et al., 2022; Gallent-Torres et al., 2023; Ifenthaler, 2021; Ma et al., 2023; Niu et al., 2024; Rientes &

		Rivers, 2020; Slimi & Carballido, 2023b)
	3.2 Immediate interaction and feedback	(Beggrow et al., 2022; Gallent-Torres et al., 2023; Grájeda et al., 2023; Kolade et al., 2024; Slimi & Carballido, 2023b; Zawacki-Richter et al., 2019)
	3.3 Detection academic integrity	(Coghlan et al., 2021; Pan & Yang, 2021)
4. Automated administrative processes and decision-maker	4.1 Prediction of student behaviour and needs (e.g. performance, entry and retention rate)	(Gallent-Torres et al., 2023; Jokhan et al., 2022; Kranz & Abele, 2024)
	4.2 Automated administrative tasks	(Gallent-Torres et al., 2023; Grájeda et al., 2023; Slimi & Carballido, 2023b)

4.1.1 Personalised Learning Powered by AI

The integration of AI in education is revolutionising personalised learning, with AI-driven virtual tutors and adaptive learning systems being key components (Chaplot et al., 2016; Jian, 2023; Niu et al., 2024). These systems use AI to tailor content and interactions to individual learners' needs, preferences, and pace, enhancing the e-learning experience (Gupta, 2021; Jian, 2023) further emphasises the potential of AI in creating an application for individualised learning, which could be particularly beneficial for students in less advanced countries. However, the implementation of AI in education, particularly in Malaysia, requires further research and development (Hashim et al., 2022).

AI-driven personalisation in education leverages diverse technical approaches to address the unique needs of learners. Researchers have explored how AI-powered systems can cater to individual learning styles, offering auditory, visual, and hands-on approaches to enhance engagement (Kinnebrew et al., 2013). By dynamically assessing a student's existing knowledge, AI algorithms continuously tailor instruction and content, building upon prior understanding for deeper learning (Kranz & Abele, 2024). Crucially, inclusive personalisation means designing AI systems that support students with diverse needs and styles (Grájeda et al., 2023). The choice of algorithms underpinning personalised learning systems (Knowles, 2015) and the ethical considerations surrounding data collection and analysis have far-reaching implications for the success and fairness of AI implementation. Gibson et al. (2023) has developed a three-level model, ie. micro (individual learning), meso (collaborative learning) and macro (community cultural shift) levels, that integrates several learning theories. At each level, several roles of the learners and educators are explained.

4.1.2 Evolving Role of Educators in the AI Era

The integration of AI into education is fundamentally changing the role of educators. It's essential to dispel the misconception that AI aims to replace educators. Instead, researchers emphasise that AI is designed to augment and enhance the work of educators (Chen & Hwang, 2021; Shi & Xuwei, 2023). AI-powered tools can handle routine tasks like grading simple assignments or providing basic feedback, freeing educators to focus on higher-order skills, personalised support, and the development of essential competencies like critical thinking and collaboration (Gallent-Torres et al., 2023; Slimi & Carballido, 2023b; Yousif et al., 2011).

Educators must adapt to function effectively in this AI-driven landscape. Developing AI literacy, which includes understanding its potential, limitations, and ethical use in the classroom, is crucial (Luckin & Holmes, 2016; Pan & Yang, 2021). AI is poised to change pedagogical approaches. With AI handling aspects of content delivery and assessment, educators can shift towards roles as facilitators, mentors, and designers of engaging, personalised learning experiences (Essel et al., 2022; Mulder et al., 2022; Zawacki-Richter et al., 2019). However, some educators may harbour anxieties about technological displacement (Gallent-Torres et al., 2023; Slimi & Carballido, 2023b) and ethical concerns about the use of AI (Farazouli et al., 2024; Ojeda et al., 2023).

To ensure educators thrive in this evolving landscape, there's a critical need for comprehensive professional development (Zhou et al., 2022). Training must focus on developing AI literacy, providing hands-on experience with AI tools, and fostering pedagogical strategies that leverage AI effectively. Ongoing support structures are also vital, allowing educators to collaborate, share best practices, and address challenges as they arise. Addressing any anxieties educators may feel is crucial in ensuring smooth integration of AI into the Malaysian educational landscape.

4.1.3 Transforming Assessment with AI

AI has the potential to revolutionise assessment in higher education, moving beyond traditional exams and towards continuous, authentic, and personalised evaluation. Peer assessments and self-assessments are getting more attention as well as feedforward compared to feedback (Kolade et al., 2024). AI-powered tools facilitate the automated grading of multiple-choice and simple open-ended questions, freeing educators to focus on providing feedback on more complex, higher-order tasks (Beggrow et al., 2022). Furthermore, AI enables the assessment of skills and competencies that are difficult to quantify with traditional methods (Ifenthaler, 2021; Ma et al., 2023). AI also enables adaptive assessments that adjust in real-time based on student performance, ensuring learners are challenged at an appropriate level(Mulder et al., 2022).

AI can analyse complex student work, providing insights that go beyond simple right/wrong grading. For example, AI-driven analysis can evaluate argumentation structures in essays, collaboration dynamics in group projects, or problem-solving approaches in coding exercises (Ma et al., 2023; Rientes & Rivers, 2020). These nuanced insights help educators provide targeted feedback and facilitate skill development. In fact, some of the AI-enabled systems are able to give more effective feedback than human instructors (Kolade et al., 2024). AI-powered feedback systems can provide tailored, timely, and actionable guidance, supporting self-regulated learning and addressing misconceptions quickly (Beggrow et al., 2022; Zawacki-Richter et al., 2019). These systems can be especially beneficial in large classes or online learning environments where individual attention from instructors might be limited.

While the potential is great, it's important to acknowledge the challenges associated with AI-driven assessment. Ensuring the validity and fairness of AI-powered assessments is crucial, as is addressing potential issues like algorithmic bias (Baker & Hawn, 2022). Educators need to understand the limitations of AI-based assessment and how to interpret the results to avoid over-reliance on automated evaluations. Furthermore, concerns about academic integrity need to be addressed through careful design and the development of strategies to prevent AI-powered plagiarism (Grájeda et al., 2023). To tailor AI-based assessment to the higher education context, further research is needed (Farazouli et al., 2024). Examples include exploring AI's potential for multilingual assessment, considering Malaysia's linguistic diversity. Additionally, researching the potential of AI to address challenges like overcrowded classrooms, could reveal impactful applications specific to Malaysia.

4.2 RQ2: Impacts of AI in Higher Education

Table 2 shows the concerns or negative impacts of AI in higher education, which are mainly categorised into issues regarding ethics and biases, risks in data mining and usage as well as risks in overreliance AI tools.

Table 2: Concerns or impacts of AI in higher education

Concern/ Impact	Sub concern/ impact	Articles
1. Issues regarding ethics and biases	1.1 Risk of perpetuating existing biases, inequalities and digital divide	(Baker & Hawn, 2022; Coghlan et al., 2021; Gallent-Torres et al., 2023; Slimi & Carballido, 2023a, 2023b; Tundrea, 2020; Yeadon & Hardy, 2024)
	1.2 Academic integrity and authenticity	(Farazouli et al., 2024; Gallent-Torres et al., 2023; Grájeda et al., 2023; Ojeda et al., 2023; Yeadon & Hardy, 2024)
2. Risks in data mining and usage	2.1 Generation of false information	(Essel et al., 2022; Gallent-Torres et al., 2023; Grájeda et al., 2023; Kranz & Abele, 2024; Ojeda et al., 2023)
	2.2 Threats to data privacy, security, and confidentiality	(Coghlan et al., 2021; Delgado et al., 2020; Gallent-Torres et al., 2023; Grájeda et al., 2023; Kranz & Abele, 2024; Slimi & Carballido, 2023a, 2023b; Tundrea, 2020; Yeadon & Hardy, 2024)
3. Risks in overreliance AI tools	3.1 Disruption to educational intentions	(Gallent-Torres et al., 2023; Grájeda et al., 2023; Niu et al., 2024; Yeadon & Hardy, 2024)
	3.2 Undermining human autonomy	(Slimi & Carballido, 2023a, 2023b)
	3.3 Potential displacement of human educators and staff	(Gallent-Torres et al., 2023; Slimi & Carballido, 2023a, 2023b)

4.2.1 Ethical AI in Higher Education

The integration of AI into higher education raises a multitude of ethical considerations. Researchers emphasise the need for a proactive approach that prioritises fairness, transparency, and accountability throughout the design and implementation of AI systems (Holstein et al., 2018). It's crucial to ensure that AI-powered tools don't perpetuate or exacerbate existing inequalities, and that their use upholds the fundamental values of higher education (Yeadon & Hardy, 2024; Zawacki-Richter et al., 2019). This was echoed by (Tundrea, 2020) by listing five main challenges in the ethical framework with regards to AI capabilities in education: data bias, perception of equality, data privacy, moral agency and moral deskilling.

One core concern is the potential for algorithmic bias. If AI algorithms are trained on biased data, they can reflect and even amplify societal prejudices, leading to unfair assessment or discriminatory personalisation (Baker & Hawn, 2022). Mitigating these biases requires careful scrutiny of the datasets used to train AI models, alongside a commitment to algorithmic fairness and transparency. Educators need to be made aware of these potential biases so they can critically evaluate AI-driven decisions and identify potential harm.

AI systems used in higher education often collect extensive student data to deliver personalised learning experiences. Ensuring ethical data practices is paramount (Delgado et al., 2020). Students must have clear agency over their data, including informed consent mechanisms, transparent data usage policies, and the right to view and control data collected about them. Additionally, robust data security measures are needed to protect sensitive student information from breaches or misuse (Slimi & Carballido, 2023b; Yeadon & Hardy, 2024).

While numerous ethical challenges exist, there's a growing body of research on frameworks and guidelines for ethical AI development and use in education (Beaton et al., 2022). These frameworks aim to provide clear principles for developers and educators, emphasising fairness, privacy, transparency, and accountability (Zawacki-Richter et al., 2019). Adopting and adapting such frameworks can guide institutions towards establishing a strong ethical grounding for their integration of AI technologies. Malaysia, like other nations, must address the ethical implications of AI in higher education within its unique cultural and legal context. Researchers may explore how global ethical frameworks can be localised, considering Malaysia's specific legal regulations around data privacy and cultural norms. Additionally, examining the unique challenges faced by students with disabilities or from marginalised communities in Malaysia will help ensure that ethical AI initiatives promote inclusion rather than further marginalisation.

4.3 RQ3: National AI Strategy for Higher Education Landscape

Table 3 shows the potential AI strategy for higher education landscape, which are mainly categorised into training and education, implementation or integration of AI into educational systems, and funding, infrastructures and resources.

Table 3: AI strategies in higher education

Strategy	Sub strategy	Articles
Training and Education	Development of AI training guidelines for staff and students	(Essel et al., 2022; Grájeda et al., 2023; Kranz & Abele, 2024; Slimi & Carballido, 2023a; Wang et al., 2023; Yeadon & Hardy, 2024; Zhou et al., 2022)
	Development of AI ethics policies	(Beaton et al., 2022; Chan, 2023; Grájeda et al., 2023; Ojeda et al., 2023; Slimi & Carballido, 2023a; Yeadon & Hardy, 2024)
Implementation of AI	Implementation of AI in curriculum, teaching approaches and educational systems	(Gallent-Torres et al., 2023; Ojeda et al., 2023; Slimi & Carballido, 2023b; Wang et al., 2023)
	Design different types and levels of educator's autonomy	(Niu et al., 2024; Slimi & Carballido, 2023a)
Funding, infrastructures and resources	Support with AI compatible infrastructure and resources	(Gallent-Torres et al., 2023; Wang et al., 2023)
	Research and development on AIED	(Farazouli et al., 2024; Gallent-Torres et al., 2023; Kranz & Abele, 2024; Slimi & Carballido, 2023a, 2023b)

Given AI's transformative potential in higher education, nations worldwide are recognising the need for comprehensive national AI strategies specifically tailored to this sector. A well-articulated AI strategy provides a roadmap for investment, research, policy development, and capacity building, ensuring a coordinated and effective approach to AI integration (Crompton & Burke, 2023). It helps address challenges while maximising AI's benefits for student learning, research, and institutional efficiency.

Examining national AI strategies of countries leading AI adoption in education can offer valuable insights for Malaysia. Analysing their funding models, infrastructure initiatives, and focus areas will help identify best practices and potential pitfalls to avoid (Gallent-Torres et al., 2023). Case studies from nations like China, Singapore, or Finland, often noted for their technological advancement, would be particularly informative (Crompton & Burke, 2023).

A robust national AI strategy in higher education should include clear policies addressing ethical AI use, data governance, and intellectual property rights (Beaton et al., 2022; Chan, 2023). Frameworks for responsible use of AI in teaching, learning, and research are crucial to ensure fairness and accountability. Moreover, policies promoting cross-sector collaboration between universities, industry, and government will accelerate AI innovation and ensure its relevance to real-world needs.

A successful national AI strategy must prioritise developing a skilled AI workforce within higher education. This includes investing in upskilling existing educators, creating new AI-focused academic programs, and establishing research centers dedicated to educational AI applications (Crompton & Burke, 2023; Zhou et al., 2022). Partnerships with industry and international collaborations can further strengthen Malaysia's talent pool in this area.

While learning from global best practices, Malaysia would benefit from a strategy that explicitly addresses its unique challenges and opportunities. Potential areas of focus could include exploring AI to bridge educational disparities, utilising AI for language instruction in a multilingual setting, and examining challenges stemming from infrastructure limitations. Engaging with stakeholders across various higher education institutions is key to ensuring the strategy is inclusive and addresses national needs.

5.   Conclusions

The integration of AI in higher education has profoundly transformed academic practices in the digital era. This study identifies the pivotal roles of AI in Education (AIED), along with the primary concerns and challenges highlighted in contemporary empirical research. Additionally, it reviews potential AI strategies implemented nationwide, aiming to guide decision-makers in enhancing the current educational framework. The integration of AI in higher education represents not just a technological advancement but a methodological evolution. It is crucial to critically examine the gap between perceived and actual abilities in utilising these tools. As AI continues to shape the educational landscape, institutions, educators, and students must adopt, adapt, and effectively harness these technologies. This study provides a comprehensive overview of the current state and preparedness of AI integration in Malaysian higher education, offering insights for future improvements. The recommendations outlined in this paper, including policy initiatives, capacity-building programs, and ethical guidelines, are essential for ensuring that the benefits of AI are fully realized while addressing the associated challenges. By embracing AI thoughtfully and strategically, Malaysian higher education institutions can enhance learning experiences, improve operational efficiencies, and prepare students for a future dominated by intelligent technologies.

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