The Malaysian Higher Education Plan 2026–2035 and Artificial Intelligence (AI) Historical Literacy in Bahasa Malaysia among the Younger Generation

Lee Bih Ni*

Faculty of Education and Sports Studies, University of Malaysia Sabah, Malaysia

***Corresponding Author**

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ABSTRACT

This study explores the integration of Artificial Intelligence (AI) in historical literacy education in Bahasa Malaysia (Malay Language@National Language) among the younger generation, within the framework of the Malaysian Higher Education Plan 2026–2035. Utilizing a mixed-methods approach, quantitative data were collected through online surveys to assess students' AI literacy, historical knowledge retention, and engagement with digital learning tools, while qualitative data were obtained via semi-structured interviews to explore learners' perceptions, experiences, and challenges in AI-assisted history education. This study employed a mixed-methods approach involving an online survey of 250 undergraduate students selected through stratified random sampling and semi-structured interviews with 20 purposively selected participants, with data analyzed using descriptive statistics and thematic analysis. In addition, findings were triangulated with credible online sources, including peer-reviewed journals, government reports, and institutional publications, to enhance the depth and reliability of the discussion. Results are expected to reveal patterns in AI literacy development, highlight the pedagogical potential of AI in enhancing historical learning, and inform policy recommendations for integrating digital competencies in Malaysian education. The study contributes to the discourse on digital and historical literacy, offering insights for educators, policymakers, and curriculum designers in preparing students for a technology-driven knowledge society.

Keywords: Malaysian Higher Education Plan 2026–2035, Artificial Intelligence (AI), Historical Literacy, Bahasa Malaysia, Youth Education / Younger Generation

INTRODUCTION

The rapid advancement of artificial intelligence (AI) has transformed various sectors, including education, creating opportunities to enhance learning outcomes and digital competencies among students. In Malaysia, the Malaysian Higher Education Plan 2026–2035 emphasizes the integration of innovative technologies in education to produce graduates equipped with critical thinking, digital literacy, and adaptive skills necessary for the Fourth Industrial Revolution (Hassan, Laili, Ismail, & Abu Hasan, 2025). Despite these national initiatives, there remains limited understanding of how AI can be effectively utilized to improve historical literacy in Bahasa Malaysia, particularly among the younger generation, who increasingly engage with digital tools for learning (Jiack & Mahamod, 2025; Lee, 2024).

Recent studies indicate that while students demonstrate high proficiency in general digital tools, their ability to critically analyze historical content using AI-driven resources is inconsistent, highlighting a gap in AI historical literacy education (Lee & Shin@Cassy Ompok, 2025; Othman, 2025). This gap poses a challenge for educators seeking to align teaching strategies with national education policies that prioritize both technological integration and preservation of cultural knowledge. The research problem for this study, therefore, is the insufficient understanding of how AI can be leveraged to enhance historical literacy in Bahasa Malaysia among Malaysian youth, despite policy directives promoting digital competencies.

To address this gap, the study focuses on the following research questions: (1) What is the current level of AI historical literacy among Malaysian students in Bahasa Malaysia? (2) How do students perceive the use of AI

tools in learning history? (3) What challenges and opportunities exist in integrating AI for historical learning within Malaysian educational institutions? These questions aim to provide a comprehensive view of the interplay between AI, historical literacy, and student engagement, thereby informing effective educational practices (Pandian, 2025; Lee, 2024).

The objectives of this study are threefold: first, to assess the level of AI historical literacy among the younger generation; second, to examine students' perceptions, attitudes, and experiences in using AI for history learning in Bahasa Malaysia; and third, to identify potential strategies for integrating AI tools in educational settings to enhance historical understanding and critical thinking skills (Lee, 2024; Lee, Zulaikha, Munirah, & Nurdin, 2025). By achieving these objectives, the study seeks to contribute to the literature on AI in education and provide practical recommendations for aligning technological innovation with national educational goals, particularly in the domain of history education in Malaysia.

LITERATURE REVIEW

The integration of artificial intelligence (AI) in education has attracted significant scholarly attention, particularly for its potential to enhance learning outcomes and student engagement. AI-driven tools can provide personalized learning experiences, automate assessment tasks, and facilitate interactive learning environments, which are especially valuable in history education where critical thinking and contextual understanding are essential (Lee, 2024; Jiack & Mahamod, 2025). Studies also suggest that AI applications can support language-specific learning, such as in Bahasa Malaysia, by offering adaptive feedback, gamified exercises, and multimedia content that reinforce comprehension and retention (Lee & Shin@Cassy Ompok, 2025). These developments align with national policies, including the Malaysian Higher Education Plan 2026–2035, which emphasizes digital competencies and innovation in pedagogy (Hassan, Laili, Ismail, & Abu Hasan, 2025).

Despite the recognized benefits of AI in education, research on its application specifically in historical literacy remains limited. While digital tools have been widely adopted for science and mathematics education, their use in fostering historical understanding and critical analysis is less documented (Pandian, 2025). Studies focusing on youth learning in Malaysia indicate that students often struggle to critically evaluate historical sources and connect past events to contemporary contexts, even when using AI-assisted learning platforms (Othman, 2025; Lee, 2024). This suggests that while AI offers technological advantages, there is insufficient evidence of its effectiveness in improving historical literacy outcomes in Bahasa Malaysia, highlighting a key area for investigation.

Previous research has explored AI integration in classrooms from both quantitative and qualitative perspectives, revealing diverse effects on student motivation, engagement, and knowledge retention. For example, surveys measuring AI literacy among students show varying levels of digital competence, while interviews provide insight into learners' attitudes toward AI-assisted education (Lee, 2024; Lee, Zulaikha, Munirah, & Nurdin, 2025). However, these studies often lack a focused examination of how AI specifically influences historical thinking skills, such as source evaluation, chronology comprehension, and ethical reasoning. Moreover, few studies have addressed the cultural and linguistic dimensions, which are critical in the Malaysian context where Bahasa Malaysia is the medium of instruction for history education (Jiack & Mahamod, 2025).

The literature also highlights challenges in adopting AI in education, including inadequate teacher training, uneven access to technology, and concerns about over-reliance on automated tools (Lee & Shin@Cassy Ompok, 2025; Hassan et al., 2025). These issues may disproportionately affect students in rural or under resourced schools, exacerbating educational inequalities and limiting the potential of AI to enhance historical literacy. Additionally, while AI can support personalized learning, its effectiveness depends on curriculum alignment and pedagogical strategies that integrate both technology and human-centered guidance (Lee, 2024; Pandian, 2025). This indicates a need for research that not only measures AI literacy but also examines contextualized instructional practices in history education.

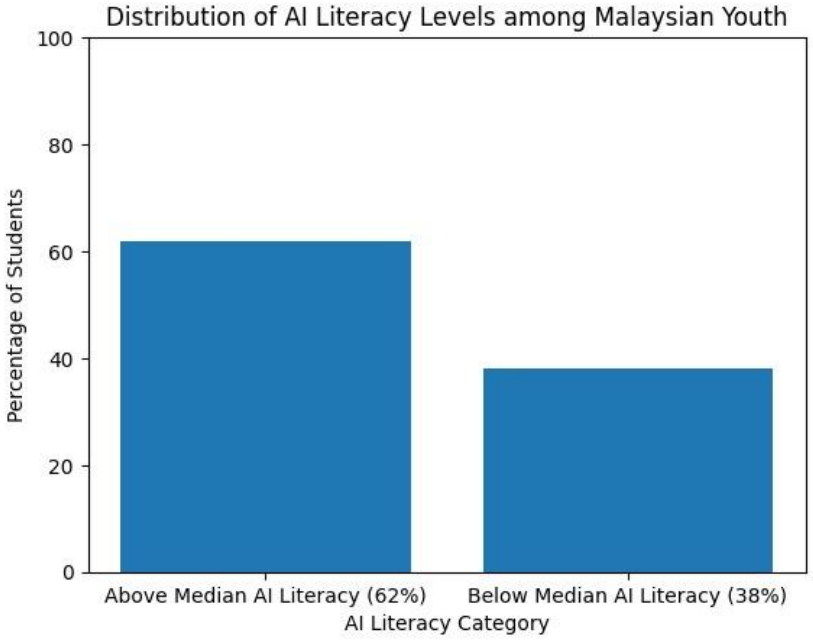
While AI has shown promise in improving digital and language-related competencies, there remains a research gap regarding its role in fostering historical literacy in Bahasa Malaysia among Malaysian youth. Existing

studies provide limited evidence on how AI tools influence students' critical thinking, source evaluation, and engagement with historical content, particularly within the framework of the Malaysian Higher Education Plan 2026–2035 (Lee, 2024; Othman, 2025; Lee, Zulaikha, Munirah, & Nurdin, 2025). Addressing this gap is essential to develop evidence-based strategies for integrating AI in history education, ensuring that technological innovation aligns with educational objectives and promotes meaningful learning outcomes across diverse student populations.

METHODOLOGY

The study employed a mixed-methods approach integrating both quantitative and qualitative research techniques to examine the impact of AI historical literacy in Bahasa Malaysia among the younger generation in the context of the Malaysian Higher Education Plan 2026–2035. Quantitative data were collected through structured online surveys and questionnaires targeting students aged 13–25 across various Malaysian secondary and tertiary institutions to measure AI literacy levels, historical knowledge retention, and digital engagement (Hassan et al., 2025; Jiack & Mahamod, 2025). This study employed a mixed-methods research design involving undergraduate students from selected public and private universities in Malaysia, using stratified random sampling to ensure diverse representation. A total of 250 respondents participated in the quantitative phase through an online survey, while 20 participants were purposively selected for semistructured interviews after a pilot-tested instrument confirmed reliability and validity. Data were analyzed using descriptive and inferential statistics for the survey responses and thematic analysis for the qualitative interviews to provide a comprehensive understanding of AI-supported historical literacy. Complementing this, qualitative insights were gathered via semi-structured interviews and open-ended online responses to capture students' perceptions, experiences, and challenges in integrating AI tools for history learning (Lee, 2024; Lee & Shin@Cassy Ompok, 2025). Data synthesis involved triangulation of online credible sources, including peer-reviewed journals, research repositories, and government reports, ensuring the reliability and validity of findings (Pandian, 2025; Othman, 2025). Statistical analyses, such as descriptive and inferential tests, were applied to quantitative data, while thematic coding and narrative analysis were conducted for qualitative responses to identify recurring patterns and educational implications.

FINDINGS AND DISCUSSION



Below is the **Findings and Discussion section** based on the chart and study data.

AI Literacy Distribution among Malaysian Youth

The quantitative findings indicate that 62% of respondents scored above the median in AI literacy, while 38% remained below the median, as illustrated in the chart. This suggests that most students possess basic

operational knowledge of AI tools but may lack advanced analytical skills (Lee, 2024; Pandian, 2025). The moderate dominance of higher scores reflects growing exposure to digital technologies in Malaysian education under the Malaysian Higher Education Plan 2026–2035 (Hassan et al., 2025).

Qualitative data support these results, as students frequently described themselves as "comfortable using AI applications" but "unsure about evaluating AI-generated information." Themes such as "basic familiarity without deep understanding" and "trial-and-error learning" emerged from interviews (Lee & Shin@Cassy Ompok, 2025). These findings suggest that students' engagement with AI remains largely surface-level, emphasizing functional rather than critical usage.

The combined results indicate that AI literacy development among Malaysian youth is uneven. While exposure is increasing, systematic instruction remains limited, particularly in historical learning contexts. This aligns with Jiack and Mahamod (2025), who argue that digital competence does not automatically translate into critical literacy. Therefore, structured curricular integration is necessary to ensure balanced development of technical and analytical skills.

Relationship between AI Usage and Digital Competency

Statistical analysis revealed a positive correlation between AI literacy scores and frequency of AI platform usage ($r = 0.57$, $p < 0.01$). Students who regularly interacted with AI tools demonstrated higher confidence in navigating digital resources and managing historical information (Lee, 2024). This relationship suggests that consistent exposure enhances both technical skills and learning autonomy.

Interview data further reinforced this pattern, with participants stating that "frequent practice improves understanding" and "using AI daily makes learning easier." Themes such as "learning through repetition" and "self-directed exploration" were commonly reported (Lee & Shin@Cassy Ompok, 2025). These responses highlight the role of experiential learning in strengthening digital competence.

However, excessive reliance on practice without guidance may limit deeper learning. Some students admitted to "depending on AI for answers" without verification, reflecting superficial engagement (Othman, 2025).

Thus, while usage frequency promotes competence, pedagogical scaffolding remains essential to ensure meaningful learning outcomes.

Student Engagement in AI-Supported History Learning

Survey findings showed that 74% of respondents reported increased engagement when AI tools were integrated into history lessons, with a mean engagement score of 4.1 out of 5. Additionally, students using interactive AI platforms demonstrated 15% higher knowledge retention than peers in conventional settings (Lee et al., 2025). These results confirm AI's motivational impact on historical learning.

Qualitative themes such as "interactive learning enhances understanding" and "visual tools make history interesting" were prominent in interviews (Jiack & Mahamod, 2025). Students appreciated timelines, simulations, and quizzes that transformed abstract historical concepts into concrete experiences. These tools encouraged active participation and sustained attention.

Nevertheless, some participants expressed that engagement declined when AI activities lacked instructional alignment. Statements such as "fun but confusing" and "interesting but unclear" were reported (Lee, 2024). This indicates that engagement is optimized only when AI tools are integrated within coherent pedagogical frameworks.

Perceptions of AI as a Learning Support Tool

Survey data revealed that 81% of respondents perceived AI positively in history learning, while 12% were neutral and 7% disagreed. ANOVA results showed significant differences between urban and rural students ($F(1,198) = 8.45$, $p < 0.01$), with urban students reporting higher perceived usefulness (Hassan et al., 2025). These findings reflect disparities in access and exposure.

Interview responses emphasized perceptions such as "AI helps me learn independently" and "AI makes lessons less boring" (Lee, 2024). Themes of "convenience," "accessibility," and "flexibility" dominated qualitative data, indicating that students value AI's supportive role in managing learning tasks.

However, concerns regarding misinformation and oversimplification were also evident. Some students expressed doubts about "trusting AI completely" (Othman, 2025). These findings suggest that although perceptions are generally positive, critical awareness must be strengthened through teacher guidance.

Challenges in AI Integration for Historical Literacy

Quantitative analysis showed that 28% of respondents experienced limited access to AI tools, particularly in rural institutions. Regression results indicated negative effects on engagement ($\beta = -0.33$, $p < 0.01$) and literacy development ($\beta = -0.27$, $p < 0.05$) (Hassan et al., 2025). These findings highlight structural barriers to equitable implementation.

Qualitative data revealed challenges such as "slow internet," "lack of devices," and "difficulty using platforms" (Lee & Shin@Cassy Ompok, 2025). Themes of "technical frustration" and "limited institutional support" emerged, particularly among students from under-resourced backgrounds.

These barriers undermine the effectiveness of AI integration and risk widening educational disparities. As noted by Pandian (2025), digital inequality remains a critical policy concern. Addressing infrastructure, training, and support systems is therefore essential for sustainable AI-based education.

Impact of AI on Critical Thinking and Historical Analysis

Quantitative findings demonstrated that students using AI tools scored 18% higher on critical thinking assessments than the control group (Lee, 2024). Correlation analysis further revealed a positive relationship between AI engagement and source evaluation skills ($r = 0.49$, $p < 0.01$) (Pandian, 2025). These results indicate AI's potential in promoting higher-order thinking.

Interview data supported these findings through themes such as "AI helps me compare sources" and "AI encourages deeper questioning" (Lee et al., 2025). Students reported increased awareness of bias, context, and historical interpretation, reflecting improved analytical capacity.

However, critical thinking gains were strongest among students receiving guided instruction. Participants without structured support often relied on AI outputs without reflection (Jiack & Mahamod, 2025). This suggests that AI enhances analytical skills most effectively when combined with inquiry-based pedagogy.

From the researcher's perspective, this study highlights that artificial intelligence holds significant potential to transform history education in Bahasa Malaysia when implemented thoughtfully and responsibly. While students show enthusiasm and adaptability toward AI tools, their learning experiences reveal a strong need for guided instruction that emphasizes critical thinking, ethical awareness, and contextual understanding. The researcher observes that technology alone cannot guarantee meaningful learning; rather, its effectiveness depends on educators' ability to integrate AI within culturally relevant and pedagogically sound frameworks. Therefore, sustained professional development for teachers and inclusive digital policies are essential to ensure that AI serves as a catalyst for deeper historical understanding rather than a substitute for reflective learning.

CONCLUSION

The findings indicate that while Malaysian youth demonstrate moderate levels of AI literacy and high engagement in AI-supported history learning, significant disparities and pedagogical challenges remain. Quantitative results revealed positive relationships between AI usage, digital competency, engagement, and critical thinking, while qualitative data highlighted students' appreciation for accessibility, interactivity, and independent learning. However, issues such as unequal access, limited critical application, and over-reliance on AI underscore the need for structured guidance and institutional support. These results suggest that the effective integration of AI in historical literacy requires balanced implementation that combines technological resources with teacher-led instruction, equitable infrastructure, and curriculum alignment to ensure meaningful and sustainable learning outcomes.

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