

From Competency to Influence: AI Training and Teachers' Interest in AI Usage among Library and Media Teachers in School Digital Ecosystems

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ABSTRACT

This study examines how AI competency and training are associated with teachers' interest in using artificial intelligence among Library and Media Teachers within school digital ecosystems. A cross-sectional survey was conducted among secondary school teachers in Negeri Sembilan, Malaysia, using multi-item Likert scales to measure AI competency, AI training, and interest in AI usage, with all constructs demonstrating strong reliability. The findings reveal that teachers exhibit high levels of interest in AI usage alongside relatively strong competency, despite experiencing lower and more varied levels of training. Further analysis indicates that AI competency serves as a significant positive predictor of teachers' interest, whereas AI training does not demonstrate a significant direct association when considered alongside competency. This pattern suggests that the influence of training on teachers' interest may depend on the extent to which it contributes to competency development. The study therefore highlights a misalignment between teachers' strong interest in AI and the current effectiveness of training approaches. By positioning competency as a key mechanism linking policy to practice, the findings underscore the strategic role of Library and Media Teachers as facilitators of AI integration within school digital ecosystems. Collectively, these findings highlight the need for more practice-oriented and competency-focused professional development to support the effective implementation of the National Digital Education Policy.

Keywords: artificial intelligence in education; teacher competency; professional development; teacher interest; school digital ecosystems

INTRODUCTION

Background of the Study

The rapid integration of artificial intelligence (AI) into educational contexts is reshaping instructional practices, assessment processes, and the role of teachers in facilitating learning within what is increasingly described as school digital ecosystems where interconnected environments comprising technologies, actors, policies, and practices collectively shape teaching and learning process (Selwyn, 2016; Williamson, 2017). Technologies such as generative AI and adaptive learning systems offer opportunities for personalised instruction, efficient feedback, and improved classroom management (Holmes et al., 2019; Zawacki-Richter et al., 2019). Despite these potential benefits, the extent to which AI is meaningfully utilised in teaching depends largely on teachers' inclination to adopt such technologies in their professional practice (Ng et al., 2021; Sadaf et al., 2025).

Within this evolving landscape, Library and Media Teachers occupy a distinct and strategically important role in schools. Beyond conventional teaching responsibilities, Library and Media Teachers are entrusted with managing information resources, coordinating media usage, and supporting technology integration within the school environment (Kementerian Pendidikan Malaysia, 2023). As such, they operate at the intersection of pedagogy, information management, and educational technology, positioning them as key actors within school digital ecosystems where resources, tools, and practices are coordinated and mediated (Selwyn, 2016; UNESCO, 2023). This positioning suggests that their engagement with AI is not limited to individual classroom practices,

but may influence how AI is accessed, interpreted, and utilised across the broader school ecosystem. Within this context, teachers' interest in AI usage has emerged as a critical factor influencing actual adoption (Sadaf et al., 2025; Dehen et al., 2025). Interest is shaped by teachers' competency in understanding and applying AI tools, as well as their exposure to structured training that supports such competency development (Celik, 2023). Competency enables teachers to evaluate the usefulness and applicability of AI, while training provides the necessary foundation for developing these capabilities, which in turn influence their inclination to adopt AI in teaching (Ng et al., 2021). Given the role of Library and Media Teachers, these relationships may carry broader implications. Their competency, training exposure, and interest in AI may shape not only their own usage, but also their capacity to support other teachers, curate AI-related resources, and contribute to school-level digital practices. Understanding these dynamics is therefore important for informing how AI integration can be supported more systematically within school digital ecosystems, where coordinated roles and interactions influence the sustainability of innovation (Williamson, 2017; UNESCO, 2023).

Problem Statement

Although existing studies have examined aspects of AI literacy, professional development, and technology acceptance, there remains limited empirical focus on how competency and training operate together in shaping teachers' interest in AI usage (Sadaf et al., 2025). Much of the current literature tends to examine these factors in isolation or within different educational contexts, particularly among pre-service teachers or higher education settings (Ng et al., 2021; Wang et al., 2024). As a result, there is insufficient evidence on how these variables interact within school-based environments, especially among practising teachers with defined roles related to technology and information management.

In the context of Library and Media Teachers, this gap becomes more pronounced. While Library and Media Teachers are positioned to support digital and information practices within schools, there is limited research examining how their competency and training influence their interest in adopting emerging technologies such as AI. In addition, variations in training quality, pedagogical relevance, and competency levels may contribute to uneven engagement with AI, potentially affecting how AI-related practices are supported or disseminated within schools (Wang et al., 2024). Without a clearer understanding of how competency and training are associated with interest among Library and Media Teachers, it becomes difficult to inform targeted professional development efforts that recognise their role as facilitators of technology integration. This limitation may hinder more coordinated and sustainable implementation of AI within school systems (UNESCO, 2023).

Research Questions

To investigate the relationships among AI competency, AI training, and teachers' interest in using AI for teaching, the following research questions are addressed:

1. What is the level of teachers' AI competency, AI training, and interest in AI usage?
2. Is there a significant relationship between AI competency and teachers' interest in AI usage?
3. Is there a significant relationship between AI training and teachers' interest in AI usage?
4. To what extent do AI competency and AI training predict teachers' interest in AI usage?

Based on these questions, three hypotheses are proposed. First, there is a significant positive relationship between AI competency and teachers' interest in AI usage. Second, there is a significant positive relationship between AI training and teachers' interest in AI usage. Third, AI competency and AI training significantly predict teachers' interest in AI usage.

LITERATURE REVIEW

Artificial Intelligence in Educational Contexts and School Digital Ecosystems

Artificial intelligence (AI) has emerged as a transformative component within contemporary educational technology, influencing both instructional practices and professional roles of teachers. The increasing presence of generative AI, adaptive learning systems, and intelligent tutoring tools has expanded the scope of AI beyond administrative automation to include personalised learning, assessment support, and feedback generation (Luckin et al., 2016; Holmes et al., 2019; Zawacki-Richter et al., 2019). In this evolving landscape, teachers are required not only to use AI tools but also to critically evaluate their pedagogical relevance and ethical implications (Ng et al., 2021; Celik, 2023).

International frameworks further emphasise that the effective use of AI in education is contingent upon teachers' competency and access to relevant professional training, particularly within school digital ecosystems where technology integration depends on coordinated interactions among teachers, resources, and institutional structures (UNESCO, 2023; Selwyn, 2016). UNESCO (2023) highlights that meaningful AI integration depends on teachers' ability to combine technical knowledge with ethical awareness and pedagogical decision making. This perspective reinforces the argument that technology alone does not determine successful integration. Instead, constructs such as competency, training, and interest interact within school digital ecosystems to shape how AI is adopted and sustained in educational practice (Selwyn, 2016; Williamson, 2017; Ng et al., 2021; Sadaf et al., 2025). Expanding upon this perspective, digital learning ecosystems are viewed as adaptive socio-technical systems where various connected elements like infrastructure and training alongside support and learning flows evolve together to define how effectively technology is integrated within schools (Jeladze et al., 2017). These dynamics suggest that teacher-related factors operate within a broader network of institutional and technological interactions that shape the overall responsiveness of the school environment.

The Role of Library and Media Teachers in the School Ecosystem

Within school digital ecosystems, Library and Media Teachers play a central role in managing information resources, coordinating media usage, and supporting technology integration. Their responsibilities extend beyond administrative functions to include facilitating access to digital resources, guiding information literacy practices, and supporting teachers in the use of educational technologies (Kementerian Pendidikan Malaysia, 2023; American Association of School Librarians, 2018). As such, Library and Media Teachers contribute to shaping the technological environment within which teaching and learning occur, acting as coordinators who influence the flow of information, tools, and practices across the school ecosystem (American Association of School Librarians, 2018; Selwyn, 2016).

In the context of AI, this role becomes increasingly relevant. As AI tools influence content creation, information access, and learning processes, Library and Media Teachers are positioned to act as intermediaries who support teachers in navigating these tools. Their involvement may include curating AI-related resources, advising on appropriate usage, and promoting responsible and ethical practices. This aligns with broader perspectives on school-based technology facilitators who support digital integration and instructional innovation (Koehler et al., 2014; UNESCO, 2023). This suggests that Library and Media Teachers can function as facilitators of AI integration within school digital ecosystems, rather than merely individual users of technology, by mediating access, guiding use, and supporting pedagogical alignment (UNESCO, 2023; Koehler et al., 2014).

Despite this strategic positioning, limited research has examined the role of Library and Media Teachers in relation to emerging technologies such as AI. Existing literature on technology adoption tends to focus on classroom teachers or institutional factors, with less attention given to role-based actors who support and mediate technology use (Venkatesh et al., 2003; Ng et al., 2021). This gap indicates a need to better understand how Library and Media Teachers' competency, training, and interest contribute to the broader school ecosystem, particularly in supporting AI integration.

Teacher AI Competency

Teacher AI competency refers to the capacity to understand, apply, and critically engage with AI tools in educational settings. It extends beyond operational skills to include knowledge of AI concepts, pedagogical application, ethical considerations, and reflective practice (Ng et al., 2021; Long & Magerko, 2020). This multidimensional perspective aligns with the Technological Pedagogical Content Knowledge framework (TPACK), which emphasises the integration of technological, pedagogical, and content knowledge for effective teaching (Mishra & Koehler, 2006). Recent studies suggest that AI competency enhances teachers' ability to integrate technology meaningfully into instruction. For example, Tan et al. (2025) reported that AI competency significantly contributes to teachers' pedagogical knowledge and teaching performance. Similarly, Celik (2023) proposed the Intelligent TPACK framework, which incorporates ethical considerations into teachers' professional knowledge. These findings indicate that competency is not merely a technical attribute but a critical factor shaping how teachers perceive and utilise AI in their practice.

Teachers' Interest in AI Usage

Teachers' interest in AI usage refers to their willingness, motivation, and positive disposition toward adopting AI tools in teaching. Interest is closely associated with behavioural intention and plays a crucial role in determining whether teachers translate knowledge into practice (Sadaf et al., 2025). Even when technological resources are available, low interest may hinder meaningful adoption, highlighting the importance of affective factors in technology integration. Empirical evidence consistently demonstrates a positive relationship between competency and interest. Teachers with higher levels of digital and AI-related competencies tend to exhibit more favourable attitudes and stronger intention to use AI in educational contexts (Titrek et al., 2026). This relationship can be further explained through perceived usefulness and self-efficacy, where competent teachers are more confident in their ability to use AI effectively and therefore more inclined to adopt it (Dehen et al., 2026).

Role of Training in Developing AI Competency

AI training represents a central mechanism through which teachers acquire the competencies required for effective AI integration. Contemporary literature emphasises that AI training should not be limited to technical exposure but should incorporate pedagogical design, ethical reasoning, and critical engagement with AI systems (Ng et al., 2021; Celik, 2023; UNESCO, 2023). Training frameworks grounded in constructivist learning principles further suggest that teachers learn more effectively when actively engaged in designing and applying AI-supported instruction rather than passively receiving information.

Empirical studies indicate that hands-on training, particularly those involving lesson design and classroom implementation using AI tools, enhances teachers' understanding and application of AI (Sadaf et al., 2025). Such training has also been associated with improvements in self-efficacy and attitudes, which are closely related to increased interest in AI usage (Brodarič & Babić, 2025; Dehen et al., 2026). Drawing from the reviewed literature, AI training is anticipated to strengthen teachers' AI competency, while AI competency is associated with teachers' interest in AI usage (Sadaf et al., 2025). The study adopts a competency-driven extension of TAM, where teachers' interest is positioned as an outcome influenced by competency and training-related factors.

However, gaps in training provision remain evident. Existing literature suggests that although AI-related training has expanded rapidly in educational settings, many initiatives remain uneven in quality and insufficiently focused on practical classroom integration, ethical application, and pedagogical implementation (Wang et al., 2024). Such limitations may constrain competency development and reduce teachers' willingness to meaningfully engage with AI tools. This suggests that the influence of AI training on adoption-related outcomes may not occur automatically. Training is more likely to strengthen teachers' interest when it develops practical competency, self-efficacy, and pedagogical confidence, whereas exposure-based or overly theoretical training may exert limited influence on behavioural intention. Therefore, these limitations highlight the importance of designing training initiatives that are contextually relevant, pedagogically meaningful, and responsive to teachers' professional needs.

Interrelationship Between Competency, Training and Interest

The relationship between competency, training, and teachers' interest in AI usage can be understood through technology acceptance frameworks such as TAM and UTAUT. Within these frameworks, interest aligns with behavioural intention, which is influenced by cognitive evaluations such as perceived usefulness and perceived ease of use (Davis, 1989; Venkatesh et al., 2003). AI competency can be interpreted as a factor that shapes these perceptions, while training contributes by enhancing competency. Empirical evidence suggests that higher competency is associated with stronger interest in AI usage, while training influences interest both directly and through competency development (Sadaf et al., 2025). In the context of school digital ecosystems, this relationship may extend beyond individual outcomes for Library and Media Teachers. As facilitators within the school ecosystem, their competency and interest may influence how AI practices are shared, supported, and adopted across the school environment.

Research Gap and Study Rationale

Existing literature has largely focused on general teacher populations, with limited attention given to role-specific actors such as Library and Media Teachers. Furthermore, the combined influence of competency and training on teachers' interest in AI usage remains underexplored within school-based contexts. This study addresses these gaps by examining these relationships within the Library and Media Teachers community, providing insight into how role-based factors may contribute to AI integration in schools.

Building on this gap, there is a need to articulate a role-centred pathway for AI implementation at the school level. The present study suggests a simple, forward-looking model in which training contributes to competency, competency is associated with interest, and interest supports school-level AI practices. Extending this pathway, interest among Library and Media Teachers may translate into peer support, which in turn facilitates broader teacher adoption and, ultimately, student-level impact. This progression reframes AI use from an individual behaviour to a system influence, positioning Library and Media Teachers as catalysts for coordinated AI integration within schools.

METHODOLOGY

A quantitative cross-sectional survey design was employed to examine the relationships between AI competency, AI training, and teachers' interest in AI usage, enabling the analysis of both associations and predictive effects (Creswell & Creswell, 2018). The study involved 126 Library and Media Teachers in secondary schools in Negeri Sembilan, with 124 complete responses obtained, exceeding the minimum sample size suggested by Krejcie and Morgan (1970) and providing adequate representation of the target population. Negeri Sembilan was selected due to its active participation in school-based digital initiatives and resource centre innovation programmes, making it a relevant context for examining AI-related practices (Kementerian Pendidikan Malaysia, 2023). The focus on secondary schools reflects the increasing integration of AI in more complex instructional and assessment environments (UNESCO, 2023).

Table 1. Conceptual Definition of Research Variables and Instrument Items

Variable	Conceptual Definition	Indicator	Total Instrument Items
AI Competency (IV1)	The ability of teachers to understand, apply, and critically engage with AI in educational contexts, including technical, pedagogical, and ethical aspects.	Conceptual understanding; Technical skills; Pedagogical integration; Ethical awareness	10
AI Training & Support (IV2)	The extent to which teachers are exposed to structured professional development	Training exposure; Training quality; Institutional support	8

	and institutional support related to AI usage in education.		
Teachers' Interest in AI Usage (DV)	Teachers' willingness, motivation, and intention to adopt AI tools in teaching practices, reflecting behavioural intention.	Interest; Behavioural intention; Perceived value; Confidence	8

Data were collected using a structured questionnaire adapted from established AI competency frameworks, professional development instruments, and technology adoption studies in AI in education research. The instrument measured three main constructs, namely AI competency and AI training as the independent variables, and teachers' interest in AI usage as the dependent variable. All items were rated using a five-point Likert scale ranging from Strongly Disagree to Strongly Agree.

AI competency was examined through dimensions related to conceptual understanding, technical capability, pedagogical integration, and ethical awareness, adapted from AI literacy and AI competency frameworks in education (Ng et al., 2021; Long & Magerko, 2020). AI training focused on teachers' exposure to professional development, the relevance of training received, and institutional support available within schools, consistent with professional development and facilitating condition constructs discussed in technology adoption research (Venkatesh et al., 2003; UNESCO, 2023). Teachers' interest in AI usage was assessed through indicators such as willingness to use AI, behavioural intention, perceived value, and confidence in integrating AI into teaching practices, reflecting constructs commonly associated with TAM and UTAUT-related studies (Davis, 1989; Venkatesh et al., 2003).

The questionnaire items were adapted and refined to suit the context of Library and Media Teachers in Malaysian secondary schools. Sample items for AI competency included "I can integrate AI into my teaching activities effectively" and "I am able to use AI tools to support teaching." AI training included statements such as "The AI training provided is relevant to my teaching needs," while teachers' interest in AI usage was measured through items such as "I intend to use AI more frequently in my teaching in the future." Prior to distribution, the instrument underwent review to improve clarity and contextual suitability. Minor adjustments were made to ensure consistency with the school context and research objectives. The final instrument demonstrated strong internal consistency, with Cronbach's Alpha values ranging from .938 to .965 across all constructs.

The questionnaire was distributed online through state and district education networks to facilitate access to respondents. Only complete responses were included in the final analysis. Data were analysed using SPSS. Descriptive statistics were first used to summarise response patterns across the constructs. Pearson correlation analysis was then conducted to examine the relationships among AI competency, AI training, and teachers' interest in AI usage. Multiple linear regression analysis was subsequently performed to determine the predictive contribution of AI competency and AI training towards teachers' interest in AI usage, with statistical significance evaluated at $p < .05$ (Pallant, 2020).

RESULTS AND FINDINGS

Correlation analysis was conducted to examine the relationships among AI competency, AI training, and teachers' interest in AI usage. Multiple linear regression analysis was subsequently performed to address Research Question 4 by examining the predictive effects of the independent variables on teachers' interest in AI usage.

Correlation Analysis

The Pearson correlation matrix is presented in Table 2. The results indicate that AI competency is moderately and positively correlated with teachers' interest in AI usage ($r = .46, p < .01$). In contrast, AI training demonstrates a weak and non-significant relationship with teachers' interest ($r = .08, p > .05$). Additionally, a moderate positive relationship is observed between AI training and perceived AI competency ($r = .32, p < .01$),

suggesting that training exposure is associated with higher levels of perceived competency. All reported correlations were tested at the .01 and .05 significance levels.

Table 2. Pearson Correlation Matrix (N = 124)

Variable	1	2	3
AI Competency	—		
AI Training	.32**	—	
Interest in AI Usage	.46**	.08	—

Note. ** $p < .01$.

Descriptive Statistics and Reliability Analysis

Descriptive statistics were calculated to summarise the primary variables among Library and Media Teachers (N = 124). As shown in Table 3, Teachers' Interest in AI Usage recorded the highest mean score (M = 4.44, SD = 0.61), followed by AI Competency (M = 3.97, SD = 0.76) and AI Training (M = 3.58, SD = 1.05).

Reliability analysis using Cronbach's Alpha indicated excellent internal consistency across all constructs. The values obtained were .938 for AI Competency, .965 for AI Training, and .950 for Interest in AI Usage, exceeding the recommended threshold of .70 and indicating that the measurement scales are highly reliable.

Table 3. Descriptive Statistics and Reliability

Construct	N	Mean	SD	Cronbach's Alpha
AI Competency (IV1)	124	3.974	0.760	0.938
AI Training (IV2)	124	3.576	1.053	0.965
Interest in AI Usage (DV)	124	4.440	0.609	0.950

Multiple Linear Regression Analysis

A multiple linear regression analysis was conducted to examine the contribution of AI competency and AI training to teachers' interest in AI usage. The model summary is presented in Table 4. The regression model was statistically significant, $F(2,121) = 16.084$, $p < .001$. This indicates that the set of predictors reliably explains variance in the dependent variable. The model accounted for 21.0% of the variance in teachers' interest ($R^2 = .210$, Adjusted $R^2 = .197$), representing a moderate explanatory power.

Table 4. Regression Model Summary

Model	R Square	Adjusted R Square	F	Sig.
1	0.210	0.197	16.084	< .001

Evaluation of Regression Coefficients

The individual contribution of each predictor was examined using standardised beta coefficients. As shown in Table 5, perceived AI competency emerged as a significant positive predictor of teachers' interest in AI usage ($\beta = .511$, $p < .001$). This indicates that higher levels of perceived competency are associated with stronger interest in adopting AI. Conversely, AI training did not significantly predict teachers' interest when analysed

alongside competency ($\beta = -.108, p = .273$). The negative coefficient, although non-significant, suggests that training did not demonstrate a significant direct association with interest when competency was controlled.

Table 5. Regression Coefficients

Predictor	Standardised Beta (β)	Significance (p)
AI Competency	0.511	< .001
AI Training	-0.108	.273

The findings provide partial support for the proposed hypotheses. The results confirm a significant positive relationship between perceived AI competency and teachers' interest in AI usage, thereby supporting H1. However, the relationship between AI training and interest was not statistically significant, indicating that H2 is not supported when evaluated using regression analysis.

Furthermore, although the overall regression model was significant, only AI competency emerged as a unique predictor of interest. This indicates that H3 is partially supported. The results highlight the dominant role of perceived competency in shaping teachers' interest in AI usage, while suggesting that the influence of training is likely indirect and contingent upon its contribution to competency development rather than exerting a direct effect on interest.

While this study examined how AI competency and AI training shape teachers' interest in using artificial intelligence within school digital ecosystems, the results reveal a distinct pattern. Although interest among Library and Media Teachers is high, the primary factor driving this interest is not simple exposure to training but rather the degree to which such training is translated into higher levels of perceived competency.

Possible Training–Competency Pathway

The findings suggest a possible pathway in which training, when analysed alongside competency, indicates a more complex relationship than a direct effect model. Rather than indicating a suppression effect, the data suggest a possible indirect relationship, where training may be associated with interest through competency development. Similar patterns have been observed in recent studies, where professional development enhances adoption primarily by strengthening teachers' capability and confidence rather than exerting a direct behavioural influence (Sadaf et al., 2025).

However, this interpretation remains suggestive, as formal mediation analysis was not conducted. Future studies employing path analysis or structural modelling are required to determine whether competency fully or partially mediates the relationship between training and interest. Nevertheless, the present findings reinforce the argument that training without competency acquisition may have limited practical impact.

Competency as Self-Efficacy within TAM and UTAUT

The strong predictive effect of AI competency ($\beta = 0.511, p < .001$) aligns closely with established constructs in technology acceptance theories. Within the UTAUT framework, this reflects effort expectancy, while within TAM-related extensions, it corresponds to self-efficacy (Venkatesh et al., 2003; Davis, 1989). This finding is consistent with studies demonstrating that teachers who feel capable of using technology are more likely to develop positive attitudes and intentions toward its adoption (Ng et al., 2021; Dehen et al., 2026). The findings also suggest that perceived AI competency may function as an important enabling condition influencing how teachers interpret the usefulness and practicality of AI integration within teaching and learning environments.

More importantly, the results indicate a hierarchical relationship between internal beliefs, where perceptions of competency may influence how teachers evaluate the usefulness of AI. Teachers are unlikely to perceive AI as useful if they do not first feel competent in using it. This extends prior findings by highlighting that internal

capability is a prerequisite for perceived usefulness, reinforcing competency as the foundational driver of adoption behaviour.

A Critical View of AI Training Provision

The descriptive findings indicate that AI training recorded the lowest mean ($M = 3.58$) and the highest variability ($SD = 1.05$), suggesting inconsistent exposure and uneven quality across respondents. This aligns with broader critiques that professional development in emerging technologies is often fragmented, lacking continuity and contextual relevance (UNESCO, 2023).

Interestingly, the negative direction of the regression coefficient for training ($\beta = -0.108$), although not statistically significant, introduces an important nuance. One possible explanation, which requires further investigation, is a training fatigue effect or a possible perception of increased complexity, where exposure to training that is overly theoretical or insufficiently practical may be perceived as less useful or less relevant by teachers, potentially limiting their enthusiasm toward adoption. Similar concerns have been highlighted in recent literature, where ineffective or overly theoretical AI training may reduce meaningful engagement with educational technologies (Wang et al., 2024).

This issue is particularly critical for Library and Media Teachers. As digital leaders within school ecosystems, their role extends beyond personal usage to mentoring peers and facilitating resource integration. Given their high level of interest ($M = 4.44$), the lack of a significant training effect raises concerns about the effectiveness of current professional development structures. If this group is not adequately supported, the broader diffusion of AI practices within schools may be constrained.

Implications for Policy and Professional Development

The findings suggest that current approaches to AI training may require strategic recalibration. While general literacy programmes increase awareness, they do not necessarily translate into competency or sustained interest. This observation aligns with recent research emphasising the need for practice-oriented, competency-based professional development (Er & Chongo, 2025). Although this finding does not contradict prior studies that associate professional development with AI adoption, it refines them by suggesting that training becomes meaningful only when it produces measurable competency and confidence.

For the Ministry of Education, this implies a shift from broad exposure initiatives to structured competency development pathways. Certification-based models, hands-on workshops, and context-specific applications should be prioritised to ensure that training outcomes are measurable and transferable. Furthermore, investing in Library and Media Teachers as strategic enablers may produce multiplier effects, as their competency can influence peer adoption and resource utilisation across the school.

Proposed Framework for Empowering Library and Media Teachers in the AI Digital Ecosystem

Building on the empirical pattern observed where there is a high level of interest ($M = 4.44$) and comparatively lower and variable training ($M = 3.58$, $SD = 1.05$), alongside the dominant role of competency ($\beta = 0.511$, $p < .001$), this study proposes a pragmatic role-centred framework that connects policy inputs to classroom outcomes through competency as the primary bridge.

Professional development may benefit from moving beyond awareness-based sessions toward more practice-oriented programmes that strengthen applied competency. This shift is in line with current international standards for artificial intelligence in education (UNESCO, 2023). In this proposed model, building the skills of Library and Media Teachers is the main catalyst for change. Higher competency levels increase self-efficacy and tap into the existing enthusiasm among staff to ensure they stay engaged with new technology. This logic follows the core principles of the UTAUT model, which suggests that internal confidence is what truly drives the intention to use a system (Venkatesh et al., 2003).

As these teachers become more capable, they are better equipped to guide their colleagues and manage digital resources effectively. This leadership at the school level encourages wider adoption across the entire teaching staff. On a national scale, these individual improvements lead to a more successful execution of the National Digital Education Policy. By focusing on proven abilities, the framework ensures that the original goals of the government are actually realised in daily school activities.

Unexplained Variance and Future Research Directions

Although the regression model was statistically significant, approximately 79% of the variance in teachers' interest in AI usage remained unexplained, indicating the influence of additional factors beyond AI competency and AI training. Previous studies have identified institutional support, leadership influence, workload constraints, and infrastructure readiness as important determinants of technology adoption in educational settings (UNESCO, 2023; Ng et al., 2021). Within the Malaysian school context, factors such as school culture, policy clarity, and access to digital resources may further shape teachers' readiness to engage with AI.

These findings suggest that AI integration should be understood within a broader school digital ecosystem rather than as an outcome of training alone. While training remains important, its influence may depend on how effectively it contributes to teachers' perceived competency and confidence in using AI. In this context, Library and Media Teachers appear to occupy a strategically important position in supporting school-level AI adoption through peer influence, resource coordination, and digital leadership practices.

Several limitations should be considered in interpreting the findings of this study. First, the study relied on self-reported responses, which may reflect personal perceptions rather than actual classroom practice. Second, the cross-sectional design limits the ability to establish causal relationships among AI competency, AI training, and teachers' interest in AI usage. Although the findings suggest a possible relationship between training and competency, mediation was not formally tested in this study. In addition, the study focused specifically on Library and Media Teachers in secondary schools in Negeri Sembilan, which may limit the generalisability of the findings to other educational settings.

Future research may extend this work by incorporating additional organisational and psychological variables, alongside mediation or structural equation modelling approaches, to better understand the relationships among training, competency, and teachers' interest in AI usage. Qualitative or mixed-method approaches may also provide deeper insight into how teachers experience AI integration within school environments and how digital leadership roles influence wider patterns of AI adoption.

CONCLUSION

This study contributes to the literature by demonstrating that within school digital ecosystems, competency appears to play an important role in the relationship between training and teachers' interest in AI usage, particularly among role-specific actors such as Library and Media Teachers. Besides providing empirical evidence on the relationship between competency, training, and teachers' interest in AI usage, this study demonstrates that Library and Media Teachers report high levels of interest in AI adoption. However, such interest may not translate into meaningful adoption without sufficient competency development. The results show a visible mismatch between high levels of teacher interest and their perceived level of technical competency. Training programmes currently exist, yet they do not always result in practical abilities that teachers can use in a classroom. Therefore, personal competency is the main factor that supports stronger intention toward AI integration, which reinforces its importance within established technology acceptance models. Beyond individual use, this study reframes Library and Media Teachers as key players who influence the entire digital environment of a school. When these teachers possess high levels of skill, they can do more than just use AI themselves because they can also lead their colleagues and manage digital assets effectively. This positions them as important facilitators of digital change within schools. Overall, the findings highlight the importance of strengthening teachers' perceived AI competency as part of broader digital education efforts. While Library and Media Teachers demonstrate a high level of interest in AI usage, consistent and practice-oriented professional

development may be necessary to support meaningful and sustainable AI integration within school digital ecosystems.

RECOMMENDATION

While the National Digital Education Policy outlines ambitious objectives for the future, these goals may remain aspirational unless the strategic focus shifts from general awareness toward tangible skill acquisition. Transitioning toward a professional development model rooted in proven competency provides a robust mechanism for translating high-level national policies into sustainable school practices. This approach acknowledges that genuine progress occurs only when educators achieve functional mastery of a tool and can apply it with pedagogical intent. On a broader scale, this study underscores the necessity for policy makers to align professional development frameworks with the distinct roles educators hold within the school ecosystem. Enhancing the proficiency of Library and Media Teachers can act as a catalyst for a positive ripple effect, fostering a culture of innovation and collective learning among the entire teaching staff. This perspective frames the adoption of artificial intelligence as a collaborative endeavour where leadership is driven by those who manage information and technology as a core professional responsibility.

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