

Integrating Information and Communication Technology into Malay Language Reading Instruction in Pahang, Malaysia: An Analysis of Teachers' Digital Literacy, Implementation Challenges, and Improvement Strategies

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ABSTRACT

The integration of Information and Communication Technology (ICT) has become a key priority in educational transformation, yet empirical evidence on its implementation in Malay language reading instruction remains limited. This study aimed to examine the level of digital literacy among Malay language teachers, analyse the challenges encountered in ICT implementation, and identify strategies for strengthening ICT integration in Malay language reading instruction. A quantitative descriptive survey design was employed involving 100 secondary school Malay language teachers in Pahang, Malaysia, selected through purposive sampling. Data were collected using a structured questionnaire and analysed using descriptive statistics, including frequency, percentage, mean, and standard deviation. The findings revealed that teachers demonstrated a very high level of digital literacy ($M = 4.72$, $SD = 0.49$), particularly in the use of digital learning platforms, digital assessment tools, and interactive reading resources. However, teachers also reported substantial challenges in ICT implementation ($M = 4.58$, $SD = 0.61$), particularly regarding internet connectivity, access to digital reading materials, digital assessment, and accommodating students with diverse reading abilities. Respondents expressed strong agreement on strategies to strengthen ICT integration ($M = 4.75$, $SD = 0.45$), with the highest priorities being the establishment of a national repository of digital Malay language reading materials and the development of a dedicated digital reading assessment platform. The study concludes that effective ICT integration extends beyond teachers' digital competence and is shaped by the interaction between digital literacy, pedagogically meaningful implementation, and a supportive educational ecosystem. The study contributes to the literature by proposing an empirical digital pedagogical ecosystem that integrates teachers' digital literacy, implementation challenges, and pedagogical improvement strategies within a unified framework informed by the Digital Education Policy (DEP) and the Technology Acceptance Model (TAM), providing practical implications for educational policy, teacher professional development, and future research.

Keywords: Information and Communication Technology, digital literacy, Malay language, reading instruction, digital pedagogy, Digital Education Policy (DEP)

INTRODUCTION

Digital transformation has fundamentally reshaped the global educational landscape, positioning Information and Communication Technology (ICT) as a critical catalyst for innovation in teaching and learning. ICT has evolved beyond its conventional role as a medium for knowledge delivery to become an essential enabler of self-directed learning, expanded access to educational resources, and the development of twenty-first-century competencies,

including digital literacy, creativity, and critical thinking (Kong et al., 2023). Within language education, the integration of ICT enables teachers to leverage digital reading materials, interactive learning platforms, and multimodal instructional approaches to create more engaging and meaningful learning experiences, thereby enhancing students' motivation and reading comprehension (Moradi, 2025; Hamzah & Mahamod, 2021).

In response to these developments, many countries have introduced national digital education policies to strengthen the integration of technology across their education systems. In Malaysia, this initiative is reflected in the Digital Education Policy (DEP), which prioritises the development of digitally competent learners and educators, the enhancement of digital infrastructure and infostructure, and the production of high-quality digital educational content (Kementerian Pendidikan Malaysia [Ministry of Education Malaysia, MOE], 2023). The successful implementation of this policy depends largely on teachers' ability to integrate ICT meaningfully into their pedagogical practices, as teachers remain the primary agents driving the effectiveness of digital transformation within classrooms (Ng et al., 2023; Hamzah & Syariff M. Fuad, 2026).

Within the context of Malay language reading instruction, ICT offers considerable potential to enrich students' learning experiences through the use of digital reading materials, educational applications, and digital assessment platforms that support the development of reading comprehension, vocabulary acquisition, inferential reasoning, and textual interpretation. Nevertheless, the effectiveness of ICT integration extends beyond the mere availability of technological resources. Rather, it is contingent upon teachers' digital literacy, their readiness to adapt technology to pedagogical practices, and their capacity to utilize digital tools to enhance students' learning outcomes (Ng et al., 2023; Omar & Mohmad, 2023; Zulkifli et al., 2026). Consequently, teachers' adoption and sustained use of ICT should be understood not only from the perspective of technical competence but also in terms of their perceptions of the usefulness and ease of using digital technologies in instructional practice.

Accordingly, this study is underpinned by the Technology Acceptance Model (TAM) proposed by Davis (1989), which posits that individuals' acceptance and use of technology are primarily influenced by two key constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). TAM provides a robust theoretical foundation for examining the relationship between teachers' digital literacy, the challenges associated with ICT implementation, and their willingness to integrate technology into Malay language reading instruction. The relevance of these constructs has been further substantiated by Wang et al. (2023) and Omar and Mohmad (2023), who reported that positive perceptions of technology significantly influence the successful integration of ICT within educational settings.

Against this backdrop, the present study seeks to examine the level of digital literacy among Malay language teachers, analyse the challenges they encounter in implementing ICT, and identify strategies for strengthening ICT integration in Malay language reading instruction. Beyond extending the body of knowledge on digital education in the teaching of the Malay language, this study provides empirical evidence that may inform teachers, school administrators, and policymakers in enhancing the implementation of the Digital Education Policy (DEP) through the development of a more systematic, targeted, and sustainable digital pedagogical ecosystem.

Problem Statement

Although the Digital Education Policy (DEP) has outlined comprehensive strategies to strengthen the integration of Information and Communication Technology (ICT) within the education system, its effectiveness in Malay language reading instruction remains an important concern. This is because successful ICT integration extends beyond the mere availability of technological resources and is fundamentally influenced by teachers' digital competence, their ability to apply technology within reading pedagogy, and the availability of a supportive educational ecosystem (Omar & Mohmad, 2023; Wang et al., 2023). Previous studies have reported that teachers continue to encounter multiple challenges, including inconsistent digital infrastructure, limited access to digital reading materials, insufficient professional development opportunities, and difficulties in conducting reading assessment within digital learning environments (Ahmad & Rathakrishnan, 2025; Zainudin et al., 2025; Chiu et al., 2024; Ng et al., 2023). Despite these findings, existing research has predominantly focused on ICT utilisation or teachers' digital competence from a general perspective. Empirical evidence that simultaneously examines the digital literacy of Malay language teachers, the challenges associated with ICT implementation, and the strategies

required to strengthen ICT integration within the specific context of Malay language reading instruction remains limited. This lack of context-specific evidence constrains the ability of educational stakeholders to design targeted interventions, professional development programmes, and digital learning resources that effectively address teachers' instructional needs while supporting the aspirations of the Digital Education Policy (DEP). Accordingly, the present study was undertaken to generate empirical evidence that explains the interrelationships among these three dimensions. By examining teachers' digital literacy, implementation challenges, and improvement strategies within a unified analytical framework, this study seeks to provide stronger evidence base for enhancing ICT-supported reading pedagogy and informing the development of more focused and effective digital education policies.

Research Objectives

The objectives of this study are as follows:

1. To examine the level of digital literacy among Malay language teachers in the use of Information and Communication Technology (ICT) for Malay language reading instruction.
2. To analyse the challenges encountered by Malay language teachers in implementing ICT for Malay language reading instruction.
3. To identify strategies for strengthening the integration of ICT in Malay language reading instruction.

LITERATURE REVIEW

a. Digital Literacy among Teachers in Digital Education

The rapid advancement of digital education has positioned teachers' digital literacy as a fundamental prerequisite for the effective integration of Information and Communication Technology (ICT) into teaching and learning. Digital literacy extends beyond the technical ability to operate digital tools; it encompasses the capacity to select, manage, evaluate, and apply technology meaningfully within pedagogical contexts. In educational settings, teachers with higher levels of digital literacy are better equipped to leverage technology to enhance instructional effectiveness while fostering students' twenty-first-century competencies, including digital literacy, creativity, and critical thinking (Ng et al., 2023). Chiu et al. (2024) and Abdullah and Kadir (2023) further demonstrated that teachers' digital competence is shaped by school principals' digital leadership and organisational support, whereas Omar and Mohmad (2023) identified ICT proficiency and readiness for digital teaching as significant determinants of teachers' digital competency practices. Collectively, these findings suggest that digital literacy is influenced not only by technical expertise but also by teachers' professional readiness and the institutional support available to facilitate meaningful ICT integration. Overall, previous studies underscore that teachers' digital literacy represents a multidimensional construct comprising technological competence, individual readiness, and organisational support. Nevertheless, existing research has largely examined teachers' digital competence from a general perspective, with limited attention given to its role within the specific context of Malay language reading instruction.

b. ICT Integration in Malay Language Reading Instruction

Within Malay language education, particularly in the teaching of reading skills, ICT offers significant opportunities to enrich students' learning experiences through digital reading materials, interactive learning applications, and multimodal instructional approaches. Kong et al. (2023) reported that technology-enhanced language learning increases students' engagement, strengthens reading comprehension, and promotes self-directed learning. Similar findings were reported by Hamzah and Mahamod (2021), who found that online learning platforms and digital instructional resources contributed positively to students' interest in reading activities in the Malay language classroom. However, the effectiveness of ICT integration should not be evaluated solely by the extent to which technology is used. Rather, technology should be strategically embedded within instructional practices to support the development of reading comprehension, vocabulary acquisition, inferential reasoning, and textual interpretation. Consequently, the effectiveness of ICT integration in reading instruction should be assessed according to its contribution to students' reading achievement rather than merely the frequency of technology use within classroom practice.

c. Challenges in ICT Integration

Despite substantial efforts to advance digital education, the implementation of ICT continues to present considerable challenges for teachers. Ahmad and Rathakrishnan (2025) reported that teachers continue to experience difficulties related to technological facilities, internet accessibility, and the integration of digital technologies into everyday teaching practices. These findings are consistent with those of Zainudin et al. (2025), who argued that Malaysia's digital education transformation is constrained by limitations in infrastructure, professional development, teachers' digital competence, and institutional readiness to embrace educational change. Similarly, Omar and Mohmad (2023) found that teachers' technological readiness and digital competencies are significantly associated with the successful implementation of technology-enhanced instruction. At the international level, Chiu et al. (2024) and Ng et al. (2023) likewise emphasised that inadequate digital competence and insufficient pedagogical support can substantially undermine the effectiveness of educational technology, even in contexts where technological infrastructure is available. Taken together, previous studies indicate that the challenges associated with ICT integration are no longer confined to technological infrastructure alone but also encompass teachers' pedagogical competence, organisational support, and the broader educational ecosystem that collectively determine the success of digital education initiatives.

d. Technology Acceptance Model (TAM)

The present study is grounded in the Technology Acceptance Model (TAM) proposed by Davis (1989). The model posits that individuals' acceptance and use of technology are primarily determined by two key constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Within educational contexts, teachers are more likely to adopt and integrate technology when they perceive it as beneficial for improving instructional effectiveness and sufficiently user-friendly for routine classroom practice. Wang et al. (2023) demonstrated that positive perceptions of technology significantly influence teachers' readiness to integrate digital technologies into educational practice, while Omar and Mohmad (2023) established a close relationship between digital readiness, ICT competence, and teachers' digital competency practices. Accordingly, TAM provides an appropriate theoretical lens for explaining how teachers' digital literacy, implementation challenges, and perceptions of technology collectively influence the integration of ICT into Malay language reading instruction.

The literature reviewed suggests that teachers' digital literacy, ICT implementation challenges, and technology acceptance constitute three interrelated dimensions that collectively influence the effectiveness of digital education. Although previous studies have examined these dimensions individually, empirical research that simultaneously investigates Malay language teachers' digital literacy, the challenges of ICT implementation, and strategies for strengthening ICT integration within the specific context of Malay language reading instruction remains limited. This study addresses this gap by providing empirical evidence that integrates these three dimensions within a unified interpretative framework informed by the Digital Education Policy (DEP) and the Technology Acceptance Model (TAM). In doing so, the study contributes to a more comprehensive understanding of the factors shaping the effectiveness of ICT integration in Malay language reading instruction, while providing an evidence-based foundation for strengthening digital pedagogy within language education.

METHODOLOGY

This study employed a quantitative approach using a descriptive survey design to examine the level of digital literacy among Malay language teachers, the challenges associated with the implementation of Information and Communication Technology (ICT), and potential strategies for strengthening its integration in Malay language reading instruction. The study involved 100 secondary school Malay language teachers from the state of Pahang, Malaysia, who were selected through purposive sampling based on their teaching experience and involvement in ICT-supported instructional practices. Data were collected using a structured questionnaire developed from an extensive review of the relevant literature and adapted from the instruments employed by Omar and Mohmad (2023), Ng et al. (2023), and Ahmad and Rathakrishnan (2025). The questionnaire was further refined to align with the aspirations of the Digital Education Policy (DEP). It comprised four sections covering respondents' demographic information, teachers' digital literacy, challenges in ICT implementation, and strategies for enhancing ICT integration in Malay language reading instruction.

Table 1: Interpretation of Mean Scores

Mean Score Range	Interpretation
4.21–5.00	Very High
3.41–4.20	High
2.61–3.40	Moderate
1.81–2.60	Low
1.00–1.80	Very Low

(Source.: Vagias, 2006)

Prior to the main data collection, the instrument underwent expert content validation to establish its content validity. A pilot study further demonstrated a high level of internal consistency, yielding a Cronbach's alpha coefficient of 0.873. The questionnaire was subsequently administered online via Google Forms, and the collected data were analysed using the Statistical Package for the Social Sciences (SPSS) version 29.0. Descriptive statistical analyses, including frequency, percentage, mean, and standard deviation, were employed to address the research objectives. The interpretation of mean scores was based on the classification adapted from Vagias (2006), as presented in Table 1.

FINDINGS AND DISCUSSION

This section presents and discusses the findings derived from data collected from 100 secondary school Malay language teachers who participated in the study. The presentation of findings is organized according to respondents' demographic characteristics and the three research objectives, namely teachers' digital literacy, the challenges associated with ICT implementation, and strategies for strengthening ICT integration in Malay language reading instruction.

a. Respondents' Demographic Profile

Table 2 summarises the demographic characteristics of the respondents, including gender, ethnicity, teaching experience, and school location.

Table 2: Demographic Profile of the Respondents

Category	Frequency (n)
Gender	
Male	50
Female	50
Ethnicity	
Malay	58
Chinese	17
Indian	15
Others	10
Teaching Experience	
5 years or below	30
6–10 years	42
11–15 years	19
16 years and above	9
School Location	
Urban	42
Rural	38
Remote	20

As shown in Table 2, the study involved 100 secondary school Malay language teachers, providing a balanced representation of respondents across several demographic characteristics. The sample comprised an equal

proportion of male (50%) and female (50%) teachers, thereby minimising potential gender bias in the interpretation of the findings. In terms of ethnicity, Malay teachers constituted the largest proportion of respondents (58%), followed by Chinese (17%), Indian (15%), and other ethnic groups (10%), reflecting a reasonably diverse respondent profile. With regard to teaching experience, the largest group of respondents had between six and ten years of teaching experience (42%), followed by those with five years or less (30%), 11–15 years (19%), and 16 years or more (9%). This distribution suggests that the findings predominantly reflect the perspectives of teachers with early to mid-career professional experience, who are generally expected to have substantial exposure to contemporary digital teaching practices. In terms of school location, respondents were relatively well distributed across urban (42%), rural (38%), and remote schools (20%), providing representation from diverse educational contexts and enabling the study to capture variations in ICT implementation across different school environments. The demographic composition of the sample indicates that the respondents represent a broad range of professional backgrounds and school settings. Such diversity enhances the credibility of the descriptive findings by ensuring that the subsequent analyses of teachers' digital literacy, ICT implementation challenges, and improvement strategies are informed by experiences drawn from varied educational contexts.

b. Teachers' Digital Literacy in ICT Integration for Malay Language Reading Instruction

Table 3 presents teachers' digital literacy in integrating Information and Communication Technology (ICT) into Malay language reading instruction.

Table 3. Teachers' Digital Literacy in the Use of ICT for Malay Language Reading Instruction

No.	Item	Mean	SD	Level
1	Ability to use digital learning management platforms (e.g., Google Classroom, Microsoft Teams, Zoom) to design and facilitate interactive, student-centred reading instruction	4.74	0.48	Very High
2	Ability to develop interactive digital reading materials (e.g., e-books, reading videos, digital texts, and comprehension quizzes)	4.71	0.51	Very High
3	Ability to adapt emerging digital applications to support intensive, extensive, and independent reading strategies	4.73	0.46	Very High
4	Ability to use digital assessment tools (e.g., Google Forms, Quizizz, Kahoot) to assess students' reading performance	4.73	0.52	Very High
5	Practice of digital ethics and cyber safety in the use of digital reading materials and online learning platforms	4.73	0.48	Very High
Overall		4.72	0.49	Very High

As shown in Table 2, teachers demonstrated a very high level of digital literacy in integrating ICT into Malay language reading instruction ($M = 4.72$, $SD = 0.49$). Mean scores were consistently high across all indicators, ranging from 4.71 to 4.74, reflecting strong digital competence in instructional planning, digital resource development, assessment, and responsible technology use. The highest-rated competency involved the use of digital learning management platforms to support interactive and student-centred reading instruction ($M = 4.74$, $SD = 0.48$). Closely related competencies—including adapting emerging digital applications, employing digital assessment tools, and practising digital ethics—each recorded a mean score of 4.73. Although the development of interactive digital reading materials received the lowest mean score ($M = 4.71$, $SD = 0.51$), it remained within the very high category. Overall, the findings suggest that teachers possessed well-established digital competencies that enabled ICT to be integrated across the entire reading instruction process, encompassing lesson planning, instructional delivery, assessment, and responsible digital practice.

c. Challenges in ICT Implementation for Malay Language Reading Instruction

Table 4 summarises the challenges encountered by teachers when integrating ICT into Malay language reading instruction.

Table 4. Challenges in ICT Implementation for Malay Language Reading Instruction

No.	Item	Mean	SD	Level
1	Maintaining students' attention and active engagement during ICT-supported reading activities	4.54	0.61	Very High
2	Limited internet connectivity and access to digital reading materials	4.70	0.48	Very High
3	Difficulty in selecting or developing appropriate digital reading materials	4.47	0.74	Very High
4	Difficulty in assessing students' reading skills through digital platforms	4.62	0.58	Very High
5	Planning ICT-supported reading strategies for students with diverse reading abilities	4.59	0.63	Very High
Overall		4.58	0.61	Very High

Despite reporting high levels of digital literacy, teachers also indicated that they experienced substantial challenges in implementing ICT effectively for Malay language reading instruction ($M = 4.58$, $SD = 0.61$). The consistently high mean scores across all items indicate that ICT integration remained demanding despite teachers' strong technological competence. The most prominent challenge concerned limited internet connectivity and access to digital reading materials ($M = 4.70$, $SD = 0.48$). This was followed by difficulties in assessing students' reading skills through digital platforms ($M = 4.62$, $SD = 0.58$) and designing ICT-supported reading strategies that accommodated diverse learner abilities ($M = 4.59$, $SD = 0.63$). Teachers also reported challenges in maintaining students' engagement during digital reading activities and in selecting or developing suitable digital reading materials. Taken together, these findings suggest that the barriers to ICT integration extend beyond technological infrastructure to include pedagogical implementation, instructional design, and digital assessment practices.

d. Strategies for Strengthening ICT Integration in Malay Language Reading Instruction

Table 5 presents teachers' views on strategies for enhancing ICT implementation in Malay language reading instruction.

Table 5. Teachers' Agreement on Strategies for Strengthening ICT Integration

No.	Item	Mean	SD	Level
1	Professional development focusing on digital reading materials, digital reading strategies, and ICT-based assessment	4.70	0.48	Very High
2	Development of a national digital repository of Malay language reading materials	4.82	0.38	Very High
3	Development of a dedicated digital platform for reading assessment	4.80	0.40	Very High
4	Greater involvement of students and parents in digital reading practices	4.72	0.49	Very High
5	Development of interactive and gamified digital reading materials	4.70	0.48	Very High
Overall		4.75	0.45	Very High

Teachers expressed a very high level of agreement regarding strategies for strengthening ICT integration in Malay language reading instruction, with an overall mean score of 4.75 ($SD = 0.45$). This reflects a strong consensus that sustained improvements require greater pedagogical and institutional support rather than technological provision alone. The highest-rated recommendation was the establishment of a national repository of digital Malay language reading materials ($M = 4.82$, $SD = 0.38$), followed closely by the development of a dedicated digital platform for reading assessment ($M = 4.80$, $SD = 0.40$). Teachers also strongly endorsed professional development programmes, increased parental involvement in digital reading practices, and the production of interactive, gamified reading resources, all of which recorded very high levels of agreement. Collectively, these findings indicate that teachers viewed sustainable ICT integration as dependent upon a comprehensive digital ecosystem comprising high-quality learning resources, specialised assessment platforms, continuous professional development, and broader stakeholder engagement.

DISCUSSION

The findings demonstrate that Information and Communication Technology (ICT) has evolved beyond its conventional role as a medium for content delivery to become an integral component of digital pedagogy in Malay language reading instruction. The consistently very high level of teachers' digital literacy ($M = 4.72$, $SD = 0.49$) indicates that ICT competence is embedded across multiple instructional dimensions, including lesson planning, the development of digital reading materials, the implementation of reading strategies, digital assessment, and responsible technology use. These findings suggest that teachers have progressed from merely operating digital tools to integrating ICT in ways that support students' reading comprehension, vocabulary development, inferential reasoning, and textual interpretation. Such evidence aligns with the aspirations of the Digital Education Policy (DEP), which identifies digitally competent teachers as key enablers of educational transformation (Kementerian Pendidikan Malaysia, 2023). The present findings also corroborate those of Abdullah and Kadir (2023), Omar and Mohmad (2023), Ng et al. (2023), and Chiu et al. (2024), all of whom emphasised that teachers' digital competence forms the foundation of effective digital pedagogy. From the perspective of the Technology Acceptance Model (TAM), teachers' strong digital literacy reflects favourable perceptions of both Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), thereby facilitating the acceptance of ICT as a pedagogically meaningful component of Malay language reading instruction.

Despite these encouraging findings, the study also revealed that high digital literacy did not automatically translate into optimal ICT implementation. Although teachers reported strong technological competence ($M = 4.72$), they simultaneously perceived substantial implementation challenges ($M = 4.58$, $SD = 0.61$). This contrast suggests that successful ICT integration is shaped not only by individual capability but also by the broader educational ecosystem. The most prominent challenges—limited internet connectivity, restricted access to digital reading materials, difficulties in conducting digital assessment, and accommodating learners with diverse reading abilities—highlight the continuing influence of contextual and organisational factors on classroom practice. These findings reinforce previous studies by Ahmad and Rathakrishnan (2025), Zainudin et al. (2025), Omar and Mohmad (2023), and Ng et al. (2023), which similarly identified infrastructure and institutional support as persistent barriers to digital education. Interpreted through the TAM, these external constraints may weaken teachers' perceptions of the ease of using technology, thereby limiting the sustained integration of ICT despite positive attitudes towards its educational value.

Another important finding concerns the nature of the improvement strategies proposed by teachers. Rather than requesting additional technological facilities alone, respondents expressed the strongest agreement with initiatives aimed at strengthening the digital pedagogical ecosystem ($M = 4.75$, $SD = 0.45$). In particular, the development of a national repository of digital Malay language reading materials ($M = 4.82$) and a dedicated digital reading assessment platform ($M = 4.80$) emerged as the highest priorities. Teachers also emphasised the importance of sustained professional development, interactive and gamified digital reading resources, and greater parental involvement in promoting digital reading practices. These priorities suggest that teachers increasingly perceive ICT not as an end but as a pedagogical resource whose effectiveness depends upon the availability of high-quality digital content, authentic assessment tools, and continuous professional support. This interpretation is consistent with the MDEP, which advocates the development of quality digital resources alongside teacher capacity building. It also supports the arguments advanced by Ahmad and Rathakrishnan (2025), Zainudin et al. (2025), Abdullah and Kadir (2023), and Chiu et al. (2024), who emphasised that sustainable digital transformation requires coherent pedagogical support rather than technological provision alone. Within the TAM framework, these forms of pedagogical support are likely to strengthen both teachers' perceptions of technology usefulness and ease of use, thereby promoting more meaningful and sustained ICT integration.

A key contribution of this study lies in demonstrating that the effectiveness of ICT integration in Malay language reading instruction cannot be adequately explained by teachers' digital literacy alone. Instead, the findings suggest that effective ICT integration emerges through the interaction of three interdependent dimensions: teachers' digital competence, implementation challenges, and pedagogical ecosystem support. Unlike many previous studies that have examined ICT integration from a broad educational perspective, the present study focuses specifically on Malay language reading instruction, integrating the development of digital reading materials, reading strategies, digital assessment, and student engagement within a unified interpretative framework informed by the Digital Education Policy (DEP) and the Technology Acceptance Model (TAM). This integrated

perspective extends current scholarship by demonstrating that sustainable ICT integration is fundamentally a pedagogical ecosystem rather than a technological phenomenon. Consequently, the study offers a stronger empirical foundation for informing educational policy, professional development programmes, and future innovations in digital pedagogy for language education.

CONCLUSION

This study demonstrates that effective Information and Communication Technology (ICT) integration in Malay language reading instruction extends beyond teachers' digital competence. Rather, successful ICT integration emerges from the interaction between teachers' digital literacy, pedagogically meaningful implementation, and a supportive educational ecosystem. The findings provide empirical evidence that sustainable technology integration requires not only digitally competent teachers but also appropriate pedagogical resources, continuous professional development, and conducive learning environments to enhance students' reading development. The study contributes to the literature by offering a language-specific perspective on ICT integration within Malay language reading instruction. Its principal contribution lies in proposing an empirical digital pedagogical ecosystem that integrates teachers' digital literacy, implementation challenges, and pedagogical improvement strategies within a unified interpretative framework informed by the Digital Education Policy (DEP) and the Technology Acceptance Model (TAM). This framework provides valuable insights for policymakers, school leaders, and educators in strengthening ICT-supported language instruction while serving as a foundation for future research on technology-enhanced language education. Nevertheless, the findings should be interpreted in light of the study's limitations. As the study employed purposive sampling involving 100 secondary school Malay language teachers from the state of Pahang, the findings are context-specific and should not be generalised to all Malay language teachers in Malaysia. Future research should involve larger and more geographically diverse samples across different states and educational settings. In addition, employing mixed-methods or longitudinal research designs would provide a more comprehensive understanding of teachers' ICT integration practices and the factors influencing the sustainability of digital pedagogy in Malay language education.

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