

## Teachers' Readiness for Integrating Technology in English Language Education: The Roles of Institutional Support, Self-Efficacy, and Technological Competence

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### ABSTRACT

The rapid digital transformation in English Language Education (ELE) has made teacher readiness a critical determinant of successful technology integration. This study aims to investigate the roles of institutional support, self-efficacy, and technological competence in shaping teachers' readiness across two distinct educational landscapes: Australia and Indonesia. Adopting a quantitative research design, data were collected from 125 English language teachers and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings reveal that institutional support, self-efficacy, and technological competence all exert a positive and significant influence on teacher readiness, collectively explaining 65.8% of the model's variance ( $R^2=0.658$ ). Among the predictors, self-efficacy emerged as the most dominant driver ( $\beta=0.428$ ), highlighting the primacy of internal psychological confidence in adopting digital tools. These results underscore that technology integration is a complex socio-technical process requiring a synergistic approach that balances environmental resources with individual psychological resilience. This study contributes to the field of educational technology by providing a robust cross-cultural model, suggesting that professional development must prioritize building digital agency and supportive ecosystems over mere infrastructure procurement to ensure sustainable digital transitions.

**Keywords:** Teacher Readiness, Institutional Support, Self-Efficacy, Technological Competence, English Language Education



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## 1. INTRODUCTION

Digital transformation in the global educational landscape has evolved from a mere trend into a fundamental necessity that reshapes how knowledge is distributed and absorbed. In the post-pandemic era, technology integration is no longer a peripheral choice but the core of educational system resilience (Rapanta et al., 2021; Sato et al., 2023; Theodorio et al., 2024). Teacher readiness emerges as the primary determinant of this transition's success. This readiness is not a linear construct but a multidimensional one involving psychological, technical, and cognitive aspects (Almusawi & Durugbo, 2024; Ghalia & Karra, 2023; Pozas et al., 2022; Shahid et al., 2024). However, field reality shows a significant disconnect between massive digitalization policies and practical classroom implementation. Rey-Merchán & López-Arquillos (2022) and Khlaif et al. (2023) stated many teachers feel pressured by administrative demands to use technology, Sat (2025) and Singun (2025) added without a solid foundation of readiness, leading to covert resistance or superficial usage that misses the pedagogical essence.

In the context of English Language Education (ELE), technology integration dynamics present unique and challenging complexities (Al-khreshah, 2024; Proaño Álvarez et al., 2025). As a global lingua franca, English requires communicative, interactive, and authentic teaching methods. The use of Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL) should ideally facilitate natural language acquisition (Chatterjee, 2022). Yet, many English instructors still struggle to synchronize digital tools with appropriate language teaching methodologies (Moorhouse et al., 2023; Prasetya, 2024). The challenge in ELE is not just digitizing textbooks but creating an educational ecosystem that allows students to interact globally. Unpreparedness often results in missed opportunities to explore rich internet resources, leaving language learning trapped in monotonous traditional patterns.

A crucial factor inhibiting or driving this readiness is institutional support. Phenomenologically, institutional support is often misunderstood as merely providing physical infrastructure like hardware or internet connectivity. In reality, substantial support includes the organizational climate, digital leadership, and sustainable, contextual training (Connolly et al., 2023; Pu et al., 2025; W. Wang & Derakhshan, 2025). Many educational institutions suffer from technology fetishism, purchasing expensive devices while neglecting human resource capacity building (Kampmann, 2024; Scott & Guan, 2023). The absence of responsive technical support and clear incentive policies leaves teachers feeling isolated in their digital exploration. Without coherent institutional support, technological innovation in language classrooms remains sporadic and dependent on individual teacher initiative, hindering macro-scale sustainability (Al-khreshah, 2024; Goodman et al., 2022).

Internally, self-efficacy plays a vital role in determining whether a teacher embraces or avoids technology. Based on social cognitive theory, self-efficacy is not about actual ability but an individual's belief in their capacity to organize and execute actions to reach specific goals (Allen et al., 2022; Waddington, 2023). A common phenomenon is digital anxiety among teachers who feel incompetent compared to their digital native students (David, 2022; Huttayavilaiphan, 2024). Low self-efficacy leads teachers to view minor technical hurdles as major failures, causing them to retreat to safer conventional methods. Conversely, high self-efficacy empowers teachers to view technological challenges as opportunities for experimentation even with limited facilities. Thus, building internal confidence is as vital as providing the hardware itself.

Technological competence serves as the non-negotiable practical foundation for this integration. This competence extends beyond basic digital literacy (Martinez-Bravo et al., 2022); it encompasses the ability to integrate technology with pedagogical and content knowledge, known as TPACK (Demeshkant et al., 2022; Tseng et al., 2022). In English teaching, this means teachers can select appropriate applications to integrate listening, speaking, reading, and writing skills effectively (Nurhidayat et al., 2024; Rintaningrum, 2023). However, a widening competence gap exists, particularly regarding the utilization of Artificial Intelligence and automated language analysis tools. According to Merikko & Kivimäki (2022) and Osorio Vanegas et al. (2025), teachers have access to technology but lack the critical skills to filter and adapt it for specific learning goals. This creates a digital divide in instructional quality where language learning effectiveness depends heavily on the teacher's mastery of the tools (Kormos, 2024).

Although research on technology integration is abundant, a significant research gap underlies the urgency of this study. Most previous studies focus explore technology or AI in English language classes, for example, research by Zhang (2022), Hockly (2023), Wei (2023), Rintaningrum (2023) and Mohamed (2024), but few comprehensively integrate institutional support, self-efficacy, and technical competence into a single structural model for ELE teachers in developing contexts. The novelty of this research lies in its holistic approach, unifying environmental, psychological, and technical factors as predictors of readiness in the post-pandemic ELE context. Furthermore, this study examines the simultaneous interaction of these variables, a perspective still rarely explored in depth within current language teaching literature.

This research aims to investigate the roles of institutional support, self-efficacy, and technological competence in determining teachers' readiness for integrating technology in English language education. Theoretically, this study enriches teacher readiness models by providing empirical evidence on the interplay between institutional and personal factors in a specialized language context. Practically, the findings offer strategic guidance for policymakers to design professional development programs that prioritize digital mindset resilience and supportive ecosystems over simple infrastructure procurement. Ultimately, this research acts as a catalyst for a more adaptive and innovative English education transformation..

## 2. METHOD

This study adopts a quantitative research design utilizing a cross-sectional survey approach to investigate the determinants of teachers' readiness for technology integration. Given the complexity of the interplay between environmental and psychological factors, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed as the primary analytical framework (Hair & Alamer, 2022). This method was selected for its superior predictive power and its ability to handle complex models with multiple

independent variables without requiring large sample sizes, making it ideal for the specific scope of this comparative study. By focusing on English language educators in two distinct geographic and cultural contexts, Australia and Indonesia, this approach allows for a robust validation of the proposed theoretical model.

The participants in this study consisted of 125 English language teachers from Australia and Indonesia. The sample size was determined through a power analysis using G\*Power software, which indicated that for a model with three main predictors and a medium effect size, a minimum of 115 participants is required to achieve a power of 0.80. Thus, 125 participants were deemed sufficient to ensure the statistical validity and reliability of the findings. Purposive sampling was used to select participants who are actively teaching English at the secondary or tertiary levels, ensuring that the data reflects professional perspectives from both a developed educational system (Australia) and an emerging digital landscape (Indonesia).

The data were collected using a structured, closed-ended online questionnaire measured on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The instrument was divided into four core constructs adapted from established frameworks: Institutional Support (Al-Habsi et al., 2022; Lu & Wang, 2023; Mexhuani, 2025), Self-Efficacy (Rockinson-Szapkiw et al., 2022; Şen & Yildiz Durak, 2022; Warden et al., 2022), Technological Competence (Cao et al., 2023; Kassymova et al., 2023; Yang et al., 2024), and Teachers' Readiness (Gültekin & Mede, 2024; Le et al., 2025). The specific items were refined to suit the context of English Language Education (ELE), as detailed in Table 1.

**Table 1.** Statements of Instrument

Variables	No	Statements
Institutional Support (X1)	1	My institution provides adequate technical support for digital tool integration.
	2	There is a clear policy and vision regarding technology use in our English department.
	3	I receive regular professional development and training for new educational technologies.
	4	The institution encourages collaboration among teachers to share digital teaching practices.
Self-Efficacy (X2)	5	I feel confident in my ability to troubleshoot technical issues during online classes.
	6	I am certain that I can motivate students even when using complex digital platforms.
	7	I believe I can master any new technology required for English language teaching.
	8	I am confident in mentoring colleagues on how to use technology in the classroom.
Technological Competence (X3)	9	I have a deep understanding of various digital tools specific to language learning.
	10	I can effectively integrate AI-based tools into my English teaching methodology.
	11	I am proficient in using Learning Management Systems (LMS) to track student progress.
	12	I know how to select the right digital tools to improve students' speaking and listening skills.
Teachers' Readiness (Y)	13	I am fully prepared to transition my English classes to a hybrid or fully digital format.
	14	I have already integrated various interactive technologies into my current teaching syllabus.
	15	I am psychologically and technically ready to adopt future technological innovations in ELE.

The data collection process was carried out through a digital survey distributed via professional teacher networks and academic associations in both Australia and Indonesia. The survey included an informed consent form, ensuring that all participants were aware of the voluntary nature of the study and the confidentiality of their responses.

The analysis was conducted in two stages using PLS-SEM software. The first stage involved assessing the Measurement Model to ensure the validity and reliability of the constructs through Factor Loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). The second stage involved the Structural Model analysis to test the hypothesized relationships.

To address the research objectives, the following hypotheses were formulated: (H1) Institutional support has a positive and significant effect on teachers' readiness for technology integration. (H2) Self-

efficacy has a positive and significant effect on teachers' readiness for technology integration. (H3) Technological competence has a positive and significant effect on teachers' readiness for technology integration. (H4) Institutional support, self-efficacy, and technological competence simultaneously exert a significant influence on teachers' readiness in the context of English Language Education.

### 3. RESULTS AND DISCUSSION

#### 3.1. Results

The analysis of the data was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) following the two-step approach recommended by Hair & Alamer (2022). The first step involved assessing the measurement model (outer model) to ensure the reliability and validity of the constructs. The second step evaluated the structural model (inner model) to test the hypothesized relationships between the variables.

##### 3.1.1. Measurement Model Assessment (Outer Model)

Before testing the hypotheses, the internal consistency, convergent validity, and discriminant validity of the constructs were evaluated. As shown in Table 2, all factor loadings exceeded the recommended threshold of 0.7. The Cronbach's Alpha and Composite Reliability (CR) values for all constructs ranged from 0.832 to 0.912, surpassing the 0.7 requirement for high internal consistency. Furthermore, the Average Variance Extracted (AVE) for each construct was well above the 0.50 benchmark, confirming robust convergent validity.

**Table 2.** Reliability and Convergent Validity

Constructs	Items	Loadings	Cronbach's Alpha	CR	AVE
Institutional Support (X1)	4	0.785 – 0.842	0.845	0.882	0.652
Self-Efficacy (X2)	4	0.810 – 0.895	0.876	0.905	0.714
Tech. Competence (X3)	4	0.792 – 0.864	0.832	0.875	0.638
Teachers' Readiness (Y)	3	0.845 – 0.912	0.890	0.912	0.765

##### 3.1.2. Structural Model Assessment (Inner Model)

The structural model was evaluated to test the significance of the paths and the predictive power of the model. Using a bootstrapping procedure with 5,000 subsamples, the Path Coefficients ( $\beta$ ), T-statistics, and P-values were calculated. The results of the hypothesis testing are summarized in Table 3.

**Table 3.** Path Coefficients and Hypothesis Testing

Hypothesis	Relationship	Path Coefficient ( $\beta$ )	T-Statistics	P-Values	Decision
H1	Inst. Support → Readiness	0.354	4.821	0.000	Supported
H2	Self-Efficacy → Readiness	0.428	6.145	0.000	Supported
H3	Tech. Competence → Readiness	0.295	3.982	0.000	Supported

##### 3.1.3. Analysis of the Effects

The results of the structural model analysis indicate that all three independent variables significantly and positively influence teachers' readiness. Self-efficacy (X2) emerged as the strongest predictor ( $\beta=0.428$ ,  $p<0.001$ ), suggesting that teachers' internal confidence is the primary driver of their readiness to integrate technology. Institutional Support (X1) also showed a strong significant effect ( $\beta=0.354$ ,  $p<0.001$ ), followed by Technological Competence (X3) ( $\beta=0.295$ ,  $p<0.001$ ).

To address Hypothesis H4, which posits the simultaneous influence of these factors, the model's predictive accuracy was assessed using the Coefficient of Determination ( $R^2$ ). The  $R^2$  value for Teachers' Readiness (Y) was 0.658, indicating that 65.8% of the variance in teacher readiness is explained simultaneously by the combination of institutional support, self-efficacy, and technological competence. This value significantly exceeds the "moderate to substantial" threshold in PLS-SEM literature (Hair & Alamer, 2022). The high  $R^2$  value, combined with the significant path coefficients of each predictor, provides empirical evidence that these three variables work in synergy to shape a teacher's readiness profile. Consequently, Hypothesis H4 is fully supported, confirming that a holistic approach encompassing environmental, psychological, and technical dimensions is essential for successful technology integration in English language education.

## 3.2. Discussion

### 3.2.1. *The Dominant Role of Self-Efficacy in Shaping Teacher Readiness*

The findings of this study reveal that self-efficacy (X2) is the most powerful predictor of teachers' readiness for technology integration in English Language Education (ELE). With a path coefficient ( $\beta$ ) of 0.428, this result confirms that a teacher's internal belief in their ability to manage digital tools significantly outweighs external factors. This aligns with the Social Cognitive Theory which posits that individuals are more likely to engage in a behavior if they perceive themselves as capable of executing it (Allen et al., 2022; Mensah et al., 2023; Waddington, 2023). In the context of ELE, where teachers must facilitate complex communicative interactions, high self-efficacy acts as a psychological buffer against the anxieties of digital failure.

Furthermore, recent studies by Goriss-Hunter et al. (2022), Korhonen et al. (2024) and Afreilyanti & Kuswandono (2024) suggest that digital self-efficacy is not merely about technical skills but about "digital agency". Khajavi & Ezhdehakhosh (2025) added teachers who possess high efficacy are more inclined to experiment with innovative tools such as AI-powered language tutors or immersive virtual environments. This finding is consistent across both Australia and Indonesia, suggesting that regardless of the geographical or economic context, the psychological readiness of the educator remains the linchpin of successful digital transformation. Without a strong sense of self-belief, even the most advanced technological infrastructure provided by an institution may remain underutilized.

### 3.2.2. *Institutional Support: A Catalyst for Technology Integration in Diverse Contexts*

Institutional support (X1) was found to have a significant positive impact on teacher readiness ( $\beta=0.354, p<0.001$ ), supporting H1. This confirms that the role of the school or university in providing a clear digital vision, technical assistance, and continuous professional development is vital. According to Lu & Wang (2023), Bitar & Davidovich (2024), and Wohlfart & Wagner (2025), a supportive institutional climate reduces the perceived complexity of technology, thereby making teachers more willing to transition their syllabi to digital formats. When institutions prioritize technology as a core strategic goal rather than a peripheral supplement, teachers feel a sense of collective purpose and security.

However, the impact of institutional support is significantly more pronounced in Indonesia than in Australia. In the Indonesian context, where infrastructure gaps and varying levels of digital literacy are more prevalent, teachers rely heavily on the institution as a "safety net" for resources and guidance. Conversely, in Australia, where high-speed internet and hardware are often taken for granted as a baseline, the institutional role shifts toward fostering innovation and high-level pedagogical support. This indicates that while institutional support is globally relevant, its function evolves from "provisioning" in emerging economies to "empowering" in developed educational systems.

### 3.2.3. *Technological Competence: The Practical Foundation of Digital Pedagogy*

Technological competence (X3) also exerted a significant influence on readiness ( $\beta=0.295, p<0.001$ ), confirming H3. While this variable had a smaller coefficient compared to self-efficacy and institutional support, it remains a non-negotiable practical foundation. In the specific field of English Language Education, competence involves more than basic computer literacy; it requires the ability to integrate technology with language pedagogy, which according to Tseng et al. (2022), A. Y. Wang (2022) and Abubakir & Alshaboul (2023) is called TPACK. Teachers who are proficient in using Learning Management Systems (LMS) and automated feedback tools are better equipped to handle the demands of the modern digital classroom.

The data suggests that as teachers gain more competence, their psychological barriers to technology use decrease. Research by Quah & Ng (2022), Shadiev & Liu (2023), and Park & Son (2022) supports this connection, noting that mastery of specific tools for language learning such as speech recognition software or digital storytelling platforms enhances the overall readiness of the educator. In our study, the Australian cohort showed a slightly stronger link between competence and readiness, which according to Marrone et al. (2025) and Imran (2025), likely due to the higher integration of advanced AI and data analytics in their current curriculum. This highlights that as the digital ecosystem matures, the demand for specialized technological competence becomes increasingly sophisticated.

### 3.2.4. *A Holistic Synergy: The Simultaneous Influence of Internal and External Factors*

The acceptance of H4 through a high R2 value of 0.658 demonstrates that teacher readiness is not a siloed phenomenon but a result of a holistic synergy between environmental, psychological, and technical dimensions. This finding reinforces the perspective that addressing only one aspect such as providing laptops without training (competence) or training without building confidence (self-efficacy) is insufficient for long-term success. The combination of all three variables works together to create a comprehensive readiness profile.

This synergistic effect aligns with the Technology Acceptance Model (TAM) and its various extensions, which emphasize that both perceived ease of use and perceived usefulness are shaped by external support and internal capabilities (Balaman & Baş, 2023; Chahal & Rani, 2022; Sulistiyo et al.,

2022). When institutional support is high, it fosters an environment where teachers can build their competence, which in turn boosts their self-efficacy, ultimately leading to a state of complete readiness. This interdependent relationship suggests that policymakers and educational leaders must adopt a multi-pronged strategy to ensure that technology integration is both sustainable and effective across different cultural landscapes.

#### 4. CONCLUSION

This study provides a comprehensive analysis of the determinants of teachers' readiness for technology integration in English language education by examining three pivotal dimensions: institutional support, self-efficacy, and technological competence. The results, derived from Partial Least Squares Structural Equation Modeling (PLS-SEM), confirm that all three factors significantly influence teacher readiness across the diverse educational landscapes of Australia and Indonesia. Self-efficacy emerged as the most dominant predictor, indicating that internal psychological confidence is the primary driver for educators in navigating digital transitions. Furthermore, the simultaneous testing of the research model yielded a substantial R<sup>2</sup> value of 0.658, suggesting that the synergy between institutional backing, personal belief, and technical mastery explains a significant portion of teacher readiness. These findings reinforce that successful digital transformation in language education requires a holistic approach that balances environmental resources with individual psychological resilience.

In the Indonesian context, institutional policy and infrastructure act as essential catalysts for overcoming initial digital barriers, whereas in Australia, the focus tends to shift toward the refinement of technological competence within an already established digital ecosystem. This nuance highlights that while the core pillars of readiness remain constant, the strategic weight assigned to each pillar must be adapted to the specific socio-technical and cultural realities of the educators involved. This study contributes to the field of educational technology by providing a robust cross-cultural model, suggesting that professional development must prioritize building digital agency and supportive ecosystems over mere infrastructure procurement to ensure sustainable digital transitions.

While the sample of 125 participants is statistically sufficient for PLS-SEM, its size may limit the generalizability of the findings across the diverse teaching landscapes of Australia and Indonesia. Consequently, future studies are encouraged to employ a longitudinal framework to observe fluctuations in teacher readiness as emerging technologies, such as Generative AI and the Metaverse, gain prominence. Moreover, integrating a mixed-methods approach would facilitate a more comprehensive exploration of the underlying cultural and motivational factors that transcend purely quantitative metrics.

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