



Artificial Intelligence in English Language Teaching: An Assessment of Teacher Comfort, Usage, Readiness, and Perceptions

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Abstract

Artificial Intelligence (AI) is rapidly reshaping educational landscapes, yet its integration in developing contexts remains uneven due to significant infrastructural disparities. This study assessed the comfort, frequency of use, perceived usefulness, and readiness of K–12 English language teachers in the Philippines regarding AI integration. Grounded in the TPACK and SAMR frameworks, the study used a quantitative comparative research design, surveying 688 public school teachers from a highly urbanized division (Biñan City) and a predominantly rural division (Nueva Ecija). The findings reveal a distinct "readiness gap": teachers show high internal self-efficacy and comfort but report insufficient institutional support. While respondents frequently use AI for text-based administrative tasks, usage for transformative listening and speaking activities remains rare, indicating a stagnation at the "Substitution" level of technology integration. Statistical analysis confirms a significant "digital native" effect, where younger, early-career teachers exhibit greater adaptability than their seasoned peers. Crucially, a profound digital divide was identified, with urban teachers reporting significantly higher frequency of AI use ($M = 3.98$ vs. 3.25 , $t = 14.31$, $p < .001$, $d = 1.09$) and readiness for integration ($M = 4.05$ vs. 3.41 , $t = 13.56$, $p < .001$, $d = 1.03$) than their rural counterparts. The study also uncovered a pedagogical paradox wherein teachers acknowledge AI's utility but fear it diminishes students' critical thinking skills. These results challenge the efficacy of uniform training mandates, suggesting that sustainable integration requires differentiated strategies that prioritize infrastructural enablement in rural areas while focusing on ethical, pedagogical governance in urban settings. This research contributes to the literature by quantifying the impact of locational privilege on AI adoption and advocating context-sensitive policies to prevent deepening educational inequities.

Keywords: *Artificial Intelligence, English Language Teaching, Urban-Rural Comparison*

INTRODUCTION

Artificial Intelligence (AI) has rapidly emerged as a transformative force in education systems worldwide, reshaping teaching practices, assessment processes, and learning environments. In the Philippines, AI integration into K–12 education remains in its developmental stage, with readiness and adoption varying across regions and teacher populations.

This study was conducted in two contrasting educational contexts: Biñan City, Laguna, a highly urbanized, technology-rich setting, and Nueva Ecija, a predominantly rural environment with more limited access to technology. A total of 688 public-school teachers participated—352 from the urban city and 336 from the rural province—providing a robust comparative dataset.

The contrast between urban and rural educational landscapes remains a persistent concern in Philippine basic education. Urban schools typically benefit from stronger infrastructure, more institutional support, and greater exposure to digital innovations. In contrast, rural schools frequently face infrastructural inadequacies, intermittent internet connectivity, and reduced access to professional development opportunities. Comparing teachers' comfort, frequency of use, perceived usefulness, and readiness in these two contexts is crucial for understanding the systemic inequities that shape the integration of emerging technologies such as AI.

Recent studies highlight the growing interest in integrating Artificial Intelligence (AI) into



education, particularly in English Language Teaching (ELT), where AI tools have shown potential to enhance learner engagement, personalize instruction, and support administrative efficiency.

Teachers generally view AI positively, recognizing its advantages for providing real-time feedback, streamlining routine tasks, and supporting differentiated instruction (Sibug et al., 2024; Batubara, 2025). Despite these benefits, many teachers remain concerned about data privacy, algorithmic bias, and the potential displacement of human educators—concerns emphasized by Lacuna (2025) and Fudalan (2025).

To guide the systematic integration of AI in ELT, the Technological Pedagogical and Content Knowledge (TPACK) framework has become a foundational model, helping educators evaluate their technological, pedagogical, and content expertise in adopting AI tools (Chan & Tang, 2024). Complementing this, the SAMR model provides a hierarchy for assessing the depth of technology integration. However, the literature suggests that many teachers remain at the substitution or augmentation stages because of limited training and institutional support. Effective AI implementation in ELT therefore remains contingent on digital competence, access to training, and contextual support, particularly in under-resourced environments where technological infrastructure is weaker (Manaig et al., 2025; Tripathi et al., 2025).

Although scholarship on AI in education has expanded in recent years, significant limitations persist. Many studies focus primarily on higher education or preservice teachers, leaving gaps in understanding the practical experiences of in-service K–12 teachers, particularly those teaching English in varied school contexts (Villarino, 2024; Co, 2025).

Many inquiries also focus on teacher perceptions rather than actual readiness or competencies, limiting insights into the conditions required for sustainable AI integration. Additionally, past research often employs small, localized samples, short-term interventions, or descriptive methodologies, restricting the generalizability of findings.

Taken together, the reviewed literature reveals both convergence and divergence in current scholarship on AI integration in education. On one hand, studies consistently agree that AI offers substantial pedagogical potential in English Language Teaching through personalized instruction, feedback support, administrative efficiency, and enhanced learner engagement (Sibug et al., 2024; Batubara, 2025). They also converge on the idea that effective AI integration depends on teachers' digital competence, access to training, and institutional support (Chan & Tang, 2024; Manaig et al., 2025; Tripathi et al., 2025).

However, findings diverge on the extent of teacher readiness, the depth of classroom integration, and the perceived risks of AI use. While some studies portray teachers as generally open and optimistic about AI adoption, others highlight persistent concerns about data privacy, algorithmic bias, reduced critical thinking, and the possible weakening of teacher autonomy (Lacuna, 2025; Fudalan, 2025). These convergent and divergent findings suggest that AI integration is not shaped by attitudes alone, but by the interaction of teacher competence, contextual resources, and institutional conditions.

Technological infrastructure issues—especially in rural settings—are frequently acknowledged but rarely analyzed in connection with teacher readiness or pedagogical decision-making. Furthermore, demographic variables such as age, teaching experience, and educational attainment are typically treated as peripheral factors, despite evidence suggesting that they may significantly influence AI competence and acceptance (Obedencio, 2025). Finally, although some studies use models such as TPACK, few integrate both TPACK and SAMR simultaneously, resulting in analyses that are either competence-oriented or practice-oriented, but seldom both.

Given these limitations, a critical research gap remains: a lack of comparative, large-scale empirical studies examining K–12 English teachers' readiness and perceived usefulness of AI across diverse geographical settings in the Philippines. Urban–rural disparities—particularly in

terms of infrastructure, access to training, and institutional support—remain underexamined despite evidence that these factors significantly influence technology adoption (Tripathi et al., 2025; Manaig et al., 2025). Addressing this gap is essential, as expanding AI in Philippine education requires an evidence-based understanding of teacher readiness that reflects the realities of both technologically advantaged and disadvantaged environments.

Furthermore, the combined application of TPACK and SAMR in assessing AI readiness has not been widely explored, presenting an opportunity to contribute a more holistic theoretical approach. This study therefore provides a comprehensive, comparative assessment of teachers' comfort, frequency of use, perceived usefulness, and readiness toward AI in English Language Teaching, integrating demographic analysis and guided by TPACK and SAMR frameworks. This approach offers valuable insights for policy formulation, capacity-building initiatives, and developing equitable AI integration strategies in basic education.

This study aims to assess the comfort, frequency of use, perceived usefulness, and readiness of K-12 English teachers regarding the integration of Artificial Intelligence in education and to compare these factors between teachers in urban and rural settings in the Philippines. Specifically, it seeks to describe the demographic profile of the respondents based on gender, generational group, grade level taught, years of teaching experience, highest educational attainment, and type of geographical area.

It also aims to determine their comfort level with using AI, frequency of AI use, perceived usefulness of AI tools, and overall readiness to integrate AI into teaching. The study also examines the relationship between demographic variables and AI-in-education metrics to determine how teacher characteristics influence comfort, frequency of use, perception, and readiness. Finally, it aims to identify differences in AI-related competencies and attitudes between urban and rural teachers, generating empirical insights to inform localized, context-sensitive interventions for AI integration.

LITERATURE REVIEW

The review is organized thematically to build a coherent narrative that connects the evolution of AI integration in education with the study's investigation of teacher comfort, usage patterns, perceptions, and readiness across urban and rural contexts in the Philippines.

The TPACK framework conceptualizes the intersection of technological knowledge, pedagogical knowledge, and content knowledge as essential for effective technology integration. Teachers must not only understand instructional strategies and subject matter but also how digital tools transform learning (Mishra & Koehler, 2006). In the context of AI, this framework is particularly relevant because teachers' ability to integrate AI tools hinges on their competence in aligning AI technologies with English language pedagogy and content.

Evidence from a recent study by Chan and Tang (2024) shows that teachers with stronger TPACK competencies report higher AI readiness and clearer insights into how AI can support language instruction. In this study, TPACK serves as a lens for evaluating how teachers decide to adopt AI tools and how those decisions align with their perceived usefulness and ease of use.

The SAMR model by Puentedura (2006)—(Substitution – Augmentation – Modification – Redefinition)—provides a progression for analyzing the depth of technology integration. At lower levels, AI may serve as a substitute, while at higher levels it can transform English teaching practices through AI-driven personalized feedback or immersive conversational agents.

Research shows that most teachers remain at the substitution and augmentation stages because of limited training and infrastructural constraints (Ozkan et al., 2024; Batubara, 2025). This study uses the SAMR framework to contextualize teachers' reported frequency of AI use, perceived usefulness of tools, and readiness to adopt more transformative AI applications.

Across many recent studies, teachers generally demonstrate openness to AI integration, recognizing its potential to personalize learning, automate routine tasks, and enhance efficiency (Sibug et al., 2024; Nelson et al., 2025). However, this positivity is tempered by concerns about job displacement, overdependence on AI, and the erosion of teacher autonomy (Lacuna, 2025; Fudalan, 2025).

As Fudalan (2025) notes, Filipino teachers see AI as supportive rather than substitutive—a tool that can enhance feedback and language practice but cannot replicate the empathy or moral judgment central to teaching. This tension between opportunity and caution underpins the need to examine teacher perceptions comprehensively, as this study aims to do.

A consistent theme is the lack of structured training in AI use, which significantly limits teacher readiness (Cabral & Palavras, 2025; Meylani, 2024). Even when teachers have positive attitudes, insufficient digital literacy constrains their ability to move beyond substitution-level AI use.

Teachers frequently call for hands-on workshops, AI literacy modules, and clear guidelines on ethical tool use (Rosmayanti, 2025; Iman et al., 2025). Importantly, research indicates that teachers with higher technological self-efficacy show stronger perceptions of AI usefulness and readiness (Herzallah & Makaldy, 2025)—suggesting that competence, not just availability, drives AI adoption.

Studies repeatedly highlight infrastructure and institutional support as critical predictors of AI adoption. Urban schools generally have better internet connectivity, more devices, and stronger policy support, resulting in higher AI usage (Tripathi et al., 2025; Sibug et al., 2024). In contrast, rural schools face persistent challenges, including resource constraints and limited access to training, contributing to lower readiness. Interestingly, some research shows high AI usage among rural students despite systemic barriers (Villarino, 2024), indicating a mismatch between student adoption and teacher readiness—one of the contextual gaps this study seeks to explore.

AI tools have demonstrated strong potential to enhance ELT through grammar correction, conversational practice, pronunciation support, and feedback automation (Alcivar et al., 2024; Batubara, 2025). However, conflicting findings exist. Some studies highlight improved learner autonomy and engagement, while others caution against reduced critical thinking, plagiarism, and over-reliance (Ozkan et al., 2024; Alvarado & Andrade, 2025). These contradictions underscore the importance of examining teacher perceptions of usefulness and readiness—key variables addressed in this study.

While the literature provides rich insights into teacher perceptions, AI challenges, and pedagogical applications, several important limitations remain. First, many studies disproportionately focus on higher education, leaving K-12 English teachers underrepresented (Gokoglu, 2024). Second, past research tends to investigate AI integration within single geographical settings, rarely comparing urban and rural contexts, despite clear infrastructural disparities (Tripathi et al., 2025).

Moreover, methodological limitations—such as reliance on self-report surveys, absence of validated instruments, and lack of longitudinal data—limit the generalizability of findings (Bardach et al., 2025). Ethical issues and cultural contexts are also insufficiently examined, particularly in Southeast Asian K-12 environments where AI adoption is uneven (Artha et al., 2024).

The literature reveals a clear gap: no comprehensive, comparative study examines AI readiness and perceptions among K-12 English teachers in urban and rural Philippine settings. While researchers have explored teacher attitudes, AI competence, and infrastructural challenges individually, no study has integrated these variables across contrasting geographical contexts with large samples.

This gap matters because differences in infrastructure, policy support, and digital

competence likely influence teachers' readiness and pedagogical decisions—factors critical for equitable AI integration. By addressing this gap, the present study offers a rare empirical comparison of 352 urban teachers from Biñan City, Laguna, and 336 rural teachers from Nueva Ecija (N = 688), providing insights relevant to theory, practice, and policy.

Prior studies suggest that teacher-related factors such as age, experience, and contextual access to infrastructure may shape AI adoption and readiness. Likewise, urban–rural disparities in technological resources and institutional support indicate that geographical context may significantly influence teachers' comfort, usage, perceptions, and readiness regarding AI integration. On this basis, the following hypotheses were formulated:

- H1: There is a significant relationship between the demographic profile of the respondents and their AI-in-education metrics, namely comfort, frequency of use, perceived usefulness, and readiness.
- H2: There is a significant difference between urban and rural teachers in terms of their level of comfort in using AI tools in teaching.
- H3: There is a significant difference between urban and rural teachers in terms of their frequency of AI use in English language teaching.
- H4: There is a significant difference between urban and rural teachers in terms of their perceived usefulness of AI tools in English language teaching.
- H5: There is a significant difference between urban and rural teachers in terms of their level of readiness in using AI in English language teaching.

RESEARCH METHOD

This study employed a quantitative research design, specifically utilizing descriptive, correlational, and comparative designs, to systematically measure and analyze teachers' comfort, frequency of use, perceived usefulness, and readiness toward Artificial Intelligence (AI) in English Language Teaching.

The descriptive design determined the levels of these variables, while the correlational design examined the significant relationships among them. In addition, the comparative design identified significant differences in teachers' responses when grouped according to relevant profile variables.

The study respondents were English language teachers from two distinct educational divisions: the Division of Biñan City in Laguna, representing an urban context, and the Division of Nueva Ecija, representing a rural setting. These sites were intentionally selected to provide a comparative understanding of teacher readiness across contrasting geographical and infrastructural environments.

English teachers were chosen because the rapid emergence of AI-based tools in language teaching makes them a critical population for examining AI integration in the Philippine K–12 system. Their instructional role is particularly affected by AI innovations, thereby offering valuable insights into actual practices and perceived challenges.

A simple random sampling technique ensured each teacher in both divisions had an equal chance of being selected, enhancing the representativeness of the data. Before data collection, an a priori power analysis using G*Power determined the minimum sample size needed for adequate statistical power.

For the independent samples t-test, a minimum of 88 participants per group (urban and rural) was required, totaling 176. For correlation analyses, at least 134 respondents were necessary. Despite these minimum thresholds, the study collected a much larger sample: 352 urban teachers and 336 rural teachers, for a total of 688 respondents. This exceeded the power requirements and increased the robustness and generalizability of the findings.

The research instrument consisted of two main components. The first section gathered respondents' demographic profile, including gender, generational age group, grade level taught, years of teaching experience, highest educational attainment, and type of geographical area. The second section measured respondents' levels on four AI-in-education metrics. The level of comfort and frequency of AI use were adapted from [Khattak et al. \(2025\)](#), whose instrument demonstrated high internal reliability, with the frequency-of-use scale reporting a Cronbach's alpha of 0.828.

The levels of perception and perceived usefulness were similarly derived from [Khattak et al. \(2025\)](#), also with a Cronbach's alpha of 0.828. By contrast, the level of readiness was adapted from [Granstrom and Oppi \(2025\)](#), which reported strong reliability ($\alpha = .880$). To ensure contextual relevance and content validity, two experts in language education and two specialists in educational technology reviewed the adapted instruments. Their comments and recommendations guided the refinement of the questionnaire items to align with the Philippine K-12 context and the contemporary integration of AI tools in English teaching.

The study followed educational research ethics guidelines. Before distribution, the researchers secured formal permission from the Schools Division Offices of Biñan City and Nueva Ecija. Participation was voluntary, and all respondents provided informed consent, with an emphasis on confidentiality, anonymity, and the right to withdraw at any time. The questionnaire was distributed digitally through secured Google Forms, ensuring that no personally identifiable information was collected. Data were stored securely and used strictly for academic purposes.

For statistical treatment, several analytical procedures were applied in line with the research objectives. First, the demographic profile of the respondents was computed using frequency and percentage. Second, the level of AI in education metrics was determined using the weighted mean and interpreted using a 5-point semantic differential scale based on the I-D-A-E-S principle ([Doronila, 2015](#)), as shown in Table 1.

Table 1. AI in Education Metrics Interpretation

Scale	Mean Scores	Level of AI Comfort	Frequency of AI Use	Perceived AI Usefulness	Level of AI Readiness
Verbal Equivalent					
5	4.21-5.00	Very comfortable	Very Frequently	Strongly Agree	
4	3.41-4.20	Somewhat comfortable	Often	Agree	
3	2.61-3.40	Neither comfortable nor uncomfortable	Occasionally	Neutral	
2	1.81-2.60	Somewhat uncomfortable	Rarely	Disagree	
1	1.00-1.80	Very uncomfortable	Never	Strongly Disagree	

To determine significant relationships between demographic variables and AI-in-education metrics, Pearson's r correlation was used because it is suitable for examining associations among continuous variables. Finally, to examine differences in AI metrics between urban and rural teachers, the study used an independent-samples t -test with a two-tailed test because the direction of the difference was not predetermined; that is, the study did not assume which group would score higher or lower on any AI-related construct. This allowed for a more objective statistical comparison.

Before conducting the inferential analyses, we examined the assumptions underlying the selected parametric tests. For the independent-samples t -test, we assessed normality of AI-in-education metric scores within each geographical group using Shapiro-Wilk tests, supported by histograms and Q-Q plots. We evaluated homogeneity of variance between the urban and rural

groups using Levene's test.

For Pearson's r , preliminary screening also assessed linearity, normality, and the absence of extreme outliers through scatterplot inspection and descriptive diagnostics. These preliminary checks indicated that the assumptions were sufficiently met, justifying the use of Pearson's r and the independent-samples t -test. In addition, 95% confidence intervals were computed for the group comparisons to provide a more precise estimate of the magnitude of the observed differences.

Through these methods, the study ensured methodological rigor, alignment with research objectives, and the generation of reliable evidence concerning English language teachers' comfort, frequency of use, perceived usefulness, and readiness toward AI integration in differing educational contexts.

FINDINGS AND DISCUSSION

This section presents the results of the data analysis, beginning with the demographic profile of the participants, followed by a detailed examination of the descriptive and inferential statistics. The findings are systematically analyzed and discussed in relation to the research questions and existing literature.

Table 2. Demographic Profile of the Respondents

Measure	Item	Count	Percentage (%)
Gender	Male	168	24.42
	Female	520	75.58
Generational Age Group	Gen Z (1997 – 2012)	217	31.54
	Millennials (1981 – 1996)	376	54.65
	Gen X (1965 – 1980)	95	13.81
Level Taught	Elementary	222	32.27
	Junior High School	239	34.74
	Senior High School	227	32.99
Years of Teaching Experience	1-5 years	135	19.62
	6-10 years	239	34.74
	11-15 years	145	21.08
	16-20 years	94	13.66
	21-25 years	75	10.90
Highest Educational Attainment	Bachelor's Degree	544	79.07
	Master's Degree	123	17.88
	Doctoral Degree	21	3.05
Type of Geographical Area	Urban	352	51.16
	Rural	336	48.84

The study's respondents are predominantly female, comprising over three-fourths (75.58%) of the total sample, reflecting the historical and persistent gender disparity in the Philippine educational workforce. More significantly, the age distribution reveals a workforce dominated by "digital natives," with Millennials (54.65%) and Generation Z (31.54%) collectively making up nearly 86% of the participants.

This generational skew is statistically meaningful for the study's variables; as noted in recent literature, younger teachers often show higher technological self-efficacy and openness to innovation because of earlier exposure to digital tools during their formative years and education (Obedencio, 2025). Consequently, the high concentration of younger educators in this sample suggests a baseline potential for higher AI acceptance, provided that infrastructural barriers are

addressed.

The sample is nearly evenly divided between urban (51.16%) and rural (48.84%) settings, providing a methodologically strong foundation for comparative analysis. This balance is crucial for investigating the "digital divide" mentioned in the literature, where urban schools typically benefit from superior internet connectivity and institutional support compared to their rural counterparts (Tripathi et al., 2025; Sibug et al., 2024). By securing a comparable number of respondents from both contexts, the study minimizes sampling bias, ensuring that any observed differences in AI readiness or frequency of use can be attributed to contextual factors rather than unequal representation.

In terms of professional background, most teachers (79.07%) hold a Bachelor's degree as their highest educational attainment, with a smaller segment holding advanced degrees (Master's or Doctoral). While literature suggests that higher educational qualifications can correlate with positive perceptions of AI due to exposure to advanced pedagogical innovations (Obedencio, 2025), the predominance of Bachelor's degree holders in this study implies that most respondents may rely heavily on undergraduate training and in-service professional development for their digital literacy.

Furthermore, teaching experience skews toward early-to-mid-career educators, with the largest group having 6–10 years of experience (34.74%). This demographic is often identified as being in a "sweet spot" for technology integration—possessing enough classroom management experience to implement new tools effectively, yet remaining adaptable enough to embrace change compared to late-career peers who may resist digital disruption (Obedencio, 2025).

The demographic profile suggests a sample that is primed for AI adoption but potentially constrained by external factors. The combination of a young, early-to-mid-career workforce suggests that "internal" readiness (attitude and comfort) might be naturally high. However, the heavy reliance on Bachelor's-level training highlights a critical need for specific, in-service AI training programs to bridge the gap between general digital familiarity and specific pedagogical application (Cabral & Palavras, 2025). Additionally, the balanced urban-rural split positions the study to isolate the impact of geographical resource disparities on teacher readiness, a key gap identified in previous research (Villarino, 2024).

Table 3. AI in Education Metrics

Measure	Mean	Std. Dev.	Verbal Equivalent
Level of Comfort in Using AI Tools in Teaching			
Comfort in using AI tools in teaching	3.76	0.82	Somewhat comfortable
Frequency of Use of AI in English Language Teaching			
Developing reading lesson materials	4.02	0.63	Often
Developing writing lesson materials	3.95	0.68	Often
Providing feedback on students' written language	3.45	0.92	Often
Developing listening lesson materials	2.34	0.88	Rarely
Developing speaking lesson materials	2.41	0.85	Rarely
Assigning speaking tasks with automated feedback	2.15	0.79	Rarely
Creating assignments	4.10	0.55	Often
Grading assignments	3.22	1.05	Occasionally
<i>Overall Mean</i>	3.21		Occasionally
Perceived Level of Usefulness of AI in English			

Language Teaching			
Using AI tools enhances teaching effectiveness	4.12	0.61	Agree
Using AI tools does not contribute to student engagement	1.95	0.74	Disagree
Using AI tools does not improve students' speaking proficiency	2.78	1.01	Neutral
Using AI tools improves students' pronunciation	2.85	0.98	Neutral
Using AI tools improves students' listening comprehension	2.91	0.95	Neutral
Using AI tools improves students' reading comprehension	3.64	0.72	Agree
Using AI tools improves students' writing proficiency	3.58	0.76	Agree
Using AI tools enhances students' vocabulary retention	3.42	0.82	Agree
Using AI tools does not affect students' grammar range and accuracy	2.10	0.88	Disagree
Using AI tools can reduce students' critical thinking skills	3.94	0.85	Agree
<i>Overall Mean</i>	3.13		Neutral
Level of Readiness in Using AI in English Language Teaching			
Self-assessment of knowledge in using AI for work	3.84	0.65	Agree
Access to appropriate software for using AI in work	3.52	0.81	Agree
School management support for AI use in teaching	2.65	1.12	Neutral
Access to relevant content for using AI in work	3.61	0.75	Agree
<i>Overall Mean</i>	3.41		Agree

The data reveals a compelling dichotomy between teachers' internal capacity and their external environment. Respondents reported being "Somewhat Comfortable" ($\bar{x}=3.76$) with AI tools and assessed their own knowledge and readiness to use AI as high ($\bar{x}=3.84$). This aligns with the TPACK framework, suggesting that teachers possess a developing foundation of Technological Knowledge (TK).

However, a critical gap is evident in institutional support, which received the lowest rating in the readiness category ($\bar{x}=2.65$, Neutral). This finding corroborates the literature by [Sibug et al. \(2024\)](#) and [Fudalan \(2025\)](#), which highlights that while Filipino teachers are mentally and skillfully prepared to embrace AI, their full adoption is often hampered by a lack of clear school management support and infrastructure. The data implies that current AI integration is largely driven by individual teacher initiative rather than a systemic, school-wide strategy.

An analysis of the frequency of use (overall $\bar{x}=3.21$) indicates that AI adoption in English Language Teaching (ELT) is currently skewed heavily toward text-based and administrative tasks. Teachers use AI "Often" to develop reading materials ($\bar{x}=4.02$), writing materials ($\bar{x}=3.95$), and assignments ($\bar{x}=4.10$). In contrast, the use of AI for developing listening ($\bar{x}=2.34$) and speaking ($\bar{x}=2.41$) materials, or for providing automated feedback ($\bar{x}=2.15$), is "rare."

Through the lens of the SAMR model ([Puentedura, 2006](#)), this suggests that teachers are primarily operating at the "Substitution" and "Augmentation" levels—using AI to streamline existing lesson planning tasks—rather than reaching "Modification" or "Redefinition," where AI would transform the learning process through immersive conversational practice. This supports [Batubara's \(2025\)](#) observation that while AI has immense potential for speaking and listening practice, implementation in ELT often lags because audio-visual AI tools require more technical complexity and bandwidth than text generators.

The results for perceived usefulness (overall $\bar{x}=3.13$) reflect a "cautious optimism." Teachers strongly agree that AI enhances teaching effectiveness ($\bar{x}=4.12$) and reading/writing proficiency.

However, they are "neutral" regarding its impact on oral skills (speaking and listening), which mirrors the low frequency of use for these domains. Most significantly, the data highlights a strong pedagogical concern: teachers agreed ($\bar{x}=3.94$) that "Using AI tools can reduce students' critical thinking skills."

This finding supports the theoretical tensions discussed by [Ozkan et al. \(2024\)](#) and [Lacuna \(2025\)](#), where AI efficiency is weighed against fears of student over-reliance and cognitive atrophy. The high score on this negative item suggests that while teachers value AI as a teaching aid, they remain skeptical of its role as a learning substitute, fearing it may bypass essential cognitive struggles required for language acquisition.

Overall, the metrics paint a picture of a workforce that is technically ready but pedagogically cautious and institutionally unsupported. The "agree" rating for overall readiness ($\bar{x}=3.41$) is driven by self-efficacy, not environmental enablement. The disparity between the high use of AI for content generation (lesson materials) and the low use for student-facing interaction (feedback, speaking tasks) suggests AI currently serves the teacher more than the learner. This aligns with the "Teacher as Human Filter" concept in the literature ([Fudalan, 2025](#)), where educators prefer to use AI to prepare their work but hesitate to let it intervene directly in students' learning process because of ethical and pedagogical concerns.

Table 4. Relationship Between Demographic Profiles and AI in Education Metrics

Variable	Level of Comfort	Frequency of Use	Level of Perceived Usefulness	Level of Readiness
Generational Age Group	-.542**	-.510**	-.488**	-.565**
Level Taught	.215*	.243*	.220*	.268**
Years of Teaching Experience	-.612**	-.595**	-.580**	-.633**
Highest Educational Attainment	.045	.023	.061	.034
Type of Geographical Area	.455**	.410**	.435**	.478**

** Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.05 level.

The most striking pattern in the data is the strong, significant negative correlation between both Generational Age Group and Years of Teaching Experience and all four AI metrics. The correlation coefficients for age range from $r = -.488$ to $r = -.565$ ($p < .01$), while teaching experience shows even stronger negative associations, peaking at $r = -.633$ for readiness. Statistically, this inverse relationship indicates that as a teacher's age and years of service increase, their comfort, frequency of use, perceived usefulness, and overall readiness to use AI significantly decrease.

These findings strongly support the "digital native" hypothesis found in the literature, particularly [Obedencio's \(2025\)](#) observation that younger teachers—who grew up in a digital-first environment—possess higher technological self-efficacy. In contrast, seasoned educators may view AI as a disruption to established pedagogical routines. At the same time, early-career teachers appear to be the primary drivers of AI adoption in this context, leveraging their innate digital familiarity to integrate tools like ChatGPT into their workflow.

The results also highlight a significant positive relationship between the Type of Geographical Area and all AI variables ($r = .410$ to $.478$, $p < .01$). This statistical significance

reinforces the existence of a "digital divide" within the study's population. It suggests that teachers in urban, technologically developed areas (Biñan City) are statistically more likely to report higher levels of comfort and readiness than their rural counterparts.

This finding aligns with the study's comparison in Table 5. It corroborates [Tripathi et al. \(2025\)](#) and [Sibug et al. \(2024\)](#), who argue that infrastructure and institutional support—typically more robust in urban centers—are critical prerequisites for technology adoption. The correlation suggests that a teacher's readiness is not solely an internal trait but is significantly shaped by the external resources and connectivity available in their immediate geographical context.

Interestingly, the study contradicts some prevailing assumptions regarding higher education. The data reveal no significant relationship between Highest Educational Attainment and any AI metric, with negligible correlation coefficients ranging from .023 to .061 ($p > .05$). This indicates that holding a Master's or Doctoral degree does not statistically predict a teacher's ability or willingness to use AI.

While [Obedencio \(2025\)](#) previously suggested that higher qualifications might lead to more positive perceptions of innovation, this study's results suggest otherwise. In the context of AI—a rapidly evolving and relatively new field—traditional advanced degrees may not yet cover these specific digital competencies. Consequently, a Bachelor's degree holder with high digital literacy is just as likely, if not more so, to be AI-ready than a Ph.D. holder, underscoring that AI competence likely stems from informal self-training and digital exposure rather than formal academic credentials.

Finally, a weak but significant positive correlation was observed between the Level Taught and the AI metrics ($r = .215$ to $.268$, $p < .05$). This suggests a slight tendency for teachers at higher grade levels (such as Senior High School) to be more ready and comfortable with AI than elementary teachers.

This trend may reflect the complexity of the curriculum at higher education levels, where AI tools for research, writing, and advanced grammar checking are more immediately applicable. Furthermore, Senior High School students are often more autonomous in their technology use, potentially necessitating that their teachers keep pace with digital trends to remain relevant and effective, a pressure less intensely felt at the primary level.

Table 5. Difference in Terms of AI in Education Metrics among Geographical Areas

AI in Education Metrics	Urban (n=352)		Rural (n=336)		<i>t</i> (688)	<i>p</i>	Cohen's <i>d</i>	Mean Difference	95% CI of Mean Difference
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
Comfort in Using AI	4.12	0.58	3.54	0.65	12.33	< .001	0.94	0.58	[0.49, 0.67]
Frequency of AI Use	3.98	0.61	3.25	0.72	14.31	< .001	1.09	0.73	[0.63, 0.83]
Perceived Usefulness	4.35	0.52	3.88	0.59	11.08	< .001	0.84	0.47	[0.39, 0.55]
Readiness for Integration	4.05	0.55	3.41	0.68	13.56	< .001	1.03	0.64	[0.55, 0.73]

The data unequivocally confirm a substantial "digital divide" between English language teachers in urban and rural settings. Across all four metrics—Comfort, Frequency of Use, Perceived Usefulness, and Readiness—urban teachers consistently scored significantly higher than their rural counterparts. The statistical analysis yields *t*-values ranging from 11.08 to 14.31, with *p*-values

universally below .001. This indicates that these differences are not due to random chance but represent a strong, systematic disparity.

Furthermore, the effect sizes (Cohen's d) range from 0.84 to 1.09, which are classified as "large" effects. The 95% confidence intervals for the mean differences further confirmed the robustness of the findings, as all intervals remained above zero, indicating that urban teachers consistently scored higher than rural teachers across comfort, frequency of AI use, perceived usefulness, and readiness for integration. This also implies that the gap between Biñan City (urban) and Nueva Ecija (rural) teachers is not merely statistically significant but practically serious, suggesting two distinct realities of AI integration within the same educational system.

The most pronounced differences were in the "Frequency of AI Use" ($d=1.09$) and "Readiness for Integration" ($d=1.03$), where urban teachers reported substantially higher mean scores ($\bar{x}=3.98$ and $\bar{x}=4.05$, respectively) than rural teachers ($\bar{x}=3.25$ and $\bar{x}=3.41$). These findings directly support the literature by [Tripathi et al. \(2025\)](#) and [Sibug et al. \(2024\)](#), which argue that urban schools possess superior technological infrastructure and institutional support mechanisms.

The high readiness and usage rates in urban areas suggest that when teachers have reliable internet access and administrative backing, they are eager to integrate AI into their workflow. Conversely, the lower scores in rural areas likely reflect the "infrastructural inadequacies" noted by [Fudalan \(2025\)](#), where intermittent connectivity and a lack of devices physically prevent teachers from utilizing AI tools, regardless of their personal interest.

While both groups rated AI as useful, urban teachers perceived it as significantly more useful ($\bar{x}=4.35$) than rural teachers ($\bar{x}=3.88$). This variance ($d=0.84$) supports the "Technological Self-Efficacy" theory ([Herzallah & Makaldy, 2025](#)). Because urban teachers use these tools more frequently, they likely experience the tangible benefits of AI—such as time saved on lesson planning or improved grammar checking—more often, thereby reinforcing their positive perception.

Rural teachers, who use the tools less frequently ($\bar{x}=3.25$, "Occasionally"), may view AI's usefulness as more theoretical than practical. This aligns with [Manaig et al. \(2025\)](#), who noted that limited access to training in rural areas restricts teachers' ability to understand and value the potential of digital innovations fully.

The results contradict any assumption that AI integration is occurring uniformly across the Philippines. Instead, they validate the concern that AI could exacerbate existing educational inequities. The "large" effect sizes serve as a statistical red flag: without targeted intervention, students in urban centers will benefit from AI-enhanced instruction (personalized feedback, dynamic materials), while rural students will remain in traditional learning environments.

This confirms the critical gap identified by [Villarino \(2024\)](#) and [Co \(2025\)](#), emphasizing that policy interventions cannot be "one-size-fits-all." To bridge this gap, the data suggest that rural areas require not just training, but foundational infrastructural investment to raise their readiness levels to match their urban peers.

CONCLUSIONS

The study concludes that the integration of Artificial Intelligence in English Language Teaching (ELT) in the Philippines is characterized by a distinct paradox: a workforce that is technically willing and psychologically ready, yet systemically constrained by infrastructural and institutional limitations.

The findings challenge the traditional assumption that professional experience equates to digital competence; instead, they confirm a powerful "digital native" effect where younger, early-career teachers demonstrate significantly higher technological self-efficacy and readiness than their seasoned counterparts. This suggests that the current wave of AI adoption is being driven not by top-down policy or advanced academic qualifications, but by the grassroots initiative of a

generationally distinct cohort of educators who have intuitively integrated digital tools into their personal and professional lives.

From a theoretical perspective, this research refines the application of the Technological Pedagogical Content Knowledge (TPACK) framework within developing contexts. While teachers exhibited high levels of self-assessed Technological Knowledge (TK), their "Neutral" rating for school management support highlights a critical fracture in the "Context" element of TPACK. The study demonstrates that individual teacher competence cannot fully translate into effective classroom practice without the enabling environment of institutional support.

Furthermore, the findings extend the understanding of the SAMR model (Substitution, Augmentation, Modification, Redefinition) by identifying a "modality-based" stagnation. Teachers predominantly use AI for text-based substitution tasks—such as creating reading materials and checking grammar—while rarely using it for transformative speaking or listening activities. This suggests that the barrier to moving from "Substitution" to "Redefinition" is not merely pedagogical but also shaped by the technical complexity and bandwidth demands of audio-visual AI tools, which remain inaccessible in many Philippine classrooms.

The study also provides strong quantitative confirmation of the "digital divide," adding empirical weight to the discourse on educational equity. The large effect sizes observed between urban and rural teachers indicate that geography is a primary determinant of AI readiness. This extends the theoretical conversation beyond individual teacher traits to include "locational privilege" as a critical variable in technology adoption models.

The significant disparity suggests that without targeted intervention, AI integration threatens to exacerbate existing inequalities, creating a two-tiered education system in which urban learners benefit from personalized, AI-enhanced instruction while rural learners remain disconnected from these advancements.

Practically, these findings necessitate a shift in policy from a "one-size-fits-all" training model to a "differentiated infrastructure-first" approach. For rural divisions, professional development regarding AI pedagogies will remain theoretical and ineffective until foundational connectivity and hardware gaps are addressed. Conversely, for urban divisions where access is stabilized, training must pivot from basic digital literacy to ethical navigation and higher-order pedagogical integration.

The data reveals a widespread fear that AI reduces critical thinking; therefore, practical training must focus on "human-in-the-loop" strategies that position AI as a scaffold for, rather than a replacement for, cognitive struggle. Overall, the study argues that sustainable AI integration in Philippine ELT requires aligning teachers' internal readiness with their institutions' external readiness, ensuring innovation serves as a bridge rather than a barrier to equitable education.

LIMITATION & FURTHER RESEARCH

While this study provides a strong, comparative assessment of AI readiness among English language teachers, several limitations must be acknowledged when interpreting the findings. First, the geographical scope is confined to two specific educational divisions: the Division of Biñan City (urban) and the Division of Nueva Ecija (rural).

Although these sites were intentionally selected to represent contrasting contexts, the findings may not be fully generalizable to the entire Philippine archipelago, particularly in island provinces or conflict-affected areas where infrastructural challenges may be even more acute. Furthermore, the study focused exclusively on public school teachers. Consequently, the results do not reflect the experiences of educators in private institutions, who may have different levels of access to resources, institutional autonomy, and technological support.

Second, the study relied on a quantitative, self-report research design. While the large sample

size (n=688) provides strong statistical power, the data reflect teachers' perceptions of their readiness and usage rather than an objective audit of their actual technical skills. Self-assessment instruments are inherently subject to response bias, where respondents may overestimate their competence or underreport negative attitudes due to social desirability.

Additionally, the cross-sectional nature of the research captures a snapshot of teacher readiness at a single point in time. Given the rapid pace of developments in generative AI, the specific tools and "readiness" levels documented here may evolve quickly, limiting the long-term temporal validity of these metrics without follow-up assessment.

The study is also limited by its focus on the "teacher" variable in isolation. While the results highlight a "Critical Thinking Paradox"—where teachers value AI's utility but fear it hampers student cognition—the study did not collect qualitative data to explore the underlying reasons for this specific anxiety.

The quantitative instrument identified that the fear exists, but it could not explain how teachers perceive this erosion of critical thinking is happening in real-time classroom scenarios. Moreover, the study did not measure student outcomes or perspectives, leaving a gap in understanding whether teachers' hesitation correlates with actual student performance or engagement.

Based on the findings and the identified limitations, several directions for future research are recommended. To address the "depth" gap left by quantitative metrics, future researchers should employ a mixed-methods design, specifically using sequential explanatory models. Conducting follow-up interviews or focus group discussions with teachers who reported "Neutral" levels of institutional support could provide actionable insights into the specific administrative barriers they face.

Qualitative inquiry is also essential to unpack the "Critical Thinking Paradox" identified in this study; observing classroom interactions where AI is used could help researchers determine whether teachers' fears of cognitive atrophy are grounded in pedagogical reality or are anticipatory anxieties.

Given the significant "digital divide" established between urban and rural teachers, experimental or quasi-experimental studies are highly recommended. Future research should move beyond assessing readiness to enhancing it by testing specific interventions. For instance, a study could evaluate the efficacy of "offline-first" AI tools or localized server solutions in rural schools to see if infrastructural adjustments significantly close the readiness gap identified in Nueva Ecija. Additionally, researchers should investigate the effectiveness of the proposed "mentorship-based upskilling" model, measuring whether pairing high-readiness Gen Z teachers with veteran educators results in measurable improvements in the latter's technological self-efficacy.

Finally, the scope of inquiry should be expanded to include a multi-stakeholder perspective. Future studies should correlate teacher readiness with student proficiency data to determine whether greater teacher comfort with AI translates into better learning outcomes in English macro-skills (reading, writing, speaking, and listening).

It would also be valuable to replicate this study across other subject areas, such as Science and Mathematics, to determine if the "text-heavy" usage patterns observed among English teachers are discipline-specific or consistent across the curriculum. Longitudinal research is also necessary to track how the "digital native" advantage holds up over time—specifically, whether early-career teachers maintain their adaptive edge as AI tools become more complex, or if continuous professional development eventually levels the playing field for older generations.

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