

Ready For Ai? A Systematic Review of EFL Teacher Perceptions and Professional Development in Asia

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Abstract

The rapid adoption of Chat GPT and generative artificial intelligence (AI) since November 2022 has transformed English as a Foreign Language (EFL) instruction, yet evidence on teachers' perspectives across Asia remains fragmented. Addressing this gap, this systematic literature review synthesized empirical research on EFL teachers' perceptions and professional development needs using the PRISMA 2020 framework. Peer-reviewed studies published between November 2022 and February 2026 were retrieved from six databases, with 15 studies from six Asian countries meeting the inclusion criteria. The findings reveal that teachers are cautiously optimistic, recognizing ChatGPT's potential to enhance lesson planning and instructional efficiency while expressing concerns about accuracy, academic integrity, student over-reliance, and insufficient training. Across all studies, urgent professional development needs emerged, particularly in AI literacy, pedagogical integration, prompt engineering, and ethical practice. This review provides the first cross-national synthesis of these issues, offering evidence-based directions for policy, teacher education, and future research.

Keywords: *Asia, ChatGPT, EFL teachers, English language teaching (ELT), Generative AI, Professional Development, Systematic Review, Teacher Readiness*

1. INTRODUCTION

The release of ChatGPT by OpenAI in November 2022 marked a watershed moment in educational technology, introducing powerful generative artificial intelligence capabilities that have rapidly transformed teaching and learning practices worldwide. In English as a Foreign Language (EFL) contexts across Asia—a region characterized by diverse linguistic landscapes, varying levels of technological infrastructure, and distinct pedagogical traditions—the emergence

of ChatGPT presents both unprecedented opportunities and complex challenges. EFL teachers serve as critical mediators in the integration of educational technologies, and their perceptions, attitudes, and preparedness fundamentally shape adoption patterns and pedagogical effectiveness. Early evidence suggests that while teachers recognize the potential of ChatGPT for enhancing lesson planning, providing personalized feedback, and supporting differentiated instruction, they also express valid concerns regarding accuracy, academic integrity, student over-reliance, and their own lack of training. Understanding these perceptions and identifying professional development needs is essential for evidence-based policy formulation and effective implementation strategies.

Asia is a particularly important context for this inquiry. The region encompasses countries at vastly different stages of educational technology adoption, with varying cultural attitudes toward AI, diverse English language teaching methodologies, and distinct policy frameworks governing technology integration. Despite the widespread proliferation of ChatGPT use in Asian EFL classrooms since late 2022, the research literature remains highly fragmented, with individual studies scattered across isolated countries and contexts. To date, no comprehensive synthesis has systematically examined teacher perceptions and professional development needs across the broader Asian region.

This systematic review addresses this critical gap by synthesizing the current empirical evidence on EFL teachers' perceptions of ChatGPT and identifying professional development needs across Asian contexts. By following the rigorous PRISMA 2020 guidelines, this review provides a comprehensive, transparent, and replicable synthesis that can reliably inform regional policy, pedagogical practice, and future research agendas.

2. METHOD

This review was done using the PRISMA 2020 guidelines for systematic reviews. The review plan was not registered in PROSPERO because it focused on educational technology, which is not covered by PROSPERO's health focus. However, the review followed a plan similar to the PROSPERO standards. This plan included research questions, criteria for selecting studies, search methods,

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screening steps, data collection methods, and methods for combining data, all of which were set before selecting studies and collecting data.

To systematically gather information, a standardized data extraction form was developed and piloted on three included studies. Following this pilot phase, two reviewers independently extracted data from all eligible articles, resolving any discrepancies through discussion. The extraction process captured comprehensive bibliographic details (e.g., authors, year, journal, DOI) alongside core study and participant characteristics, such as the geographic setting, study design, sample size, and teaching level. Furthermore, the reviewers extracted the primary research objectives and key findings concerning teacher perceptions, carefully noting both positive and negative viewpoints. Thematic outcomes regarding professional development needs, perceived challenges, and potential benefits were also recorded. Finally, methodological quality indicators and author-reported limitations were documented. All data were extracted directly from the published texts; in cases where information was missing or ambiguous, it was explicitly noted in the extraction form, and the original authors were not contacted for supplementary data. Given the significant heterogeneity of study designs, contexts, and reported outcomes across the included literature, a statistical meta-analysis was not conducted. Instead, a narrative synthesis approach was employed in accordance with established guidelines. Following a preliminary review of the included studies, the synthesis was structured around five key thematic domains: (1) geographic and contextual patterns, organized by country and region to identify context-specific trends and cross-national convergences; (2) teacher perceptions, encompassing positive, negative, and ambivalent views; (3) professional development needs, categorized into technical, pedagogical, ethical, and cultural dimensions; (4) reported challenges and barriers to ChatGPT integration; and (5) recognized opportunities and benefits, synthesized by instructional domains such as lesson planning, feedback, and assessment.

To execute this synthesis, study characteristics were first tabulated to identify foundational patterns. Subsequently, the reviewers conducted a thematic analysis of the qualitative findings alongside a narrative description of the

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quantitative results. This process facilitated the identification of convergent and divergent findings across the literature, allowing for the exploration of potential explanatory factors for these variations, such as geographic context, methodological design, or participant demographics. Throughout the process, the synthesis prioritized transparency, ensuring that all findings and emerging themes were explicitly linked to their source studies through rigorous citation.

3. FINDINGS

The systematic literature search yielded 658 records, comprising 600 from SciSpace and 58 from Google Scholar. After removing 508 duplicate entries, 150 unique records advanced to the title and abstract screening phase. During this stage, 133 records were excluded for failing to meet the predefined eligibility criteria, leaving 17 articles for comprehensive full-text assessment. Two additional records were excluded after detailed review of the full texts (with specific reasons documented), ultimately resulting in 15 studies that met all inclusion criteria. These 15 studies were subsequently included in the qualitative narrative synthesis. The complete study selection process is visually detailed in the PRISMA 2020 flow diagram (Figure 1)

Study Characteristics

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The 15 included studies were published between 2023 and 2025 and represented six Asian countries across four sub-regions. Table 1 presents the detailed characteristics of all included studies.

PRISMA 2020 Flow Diagram

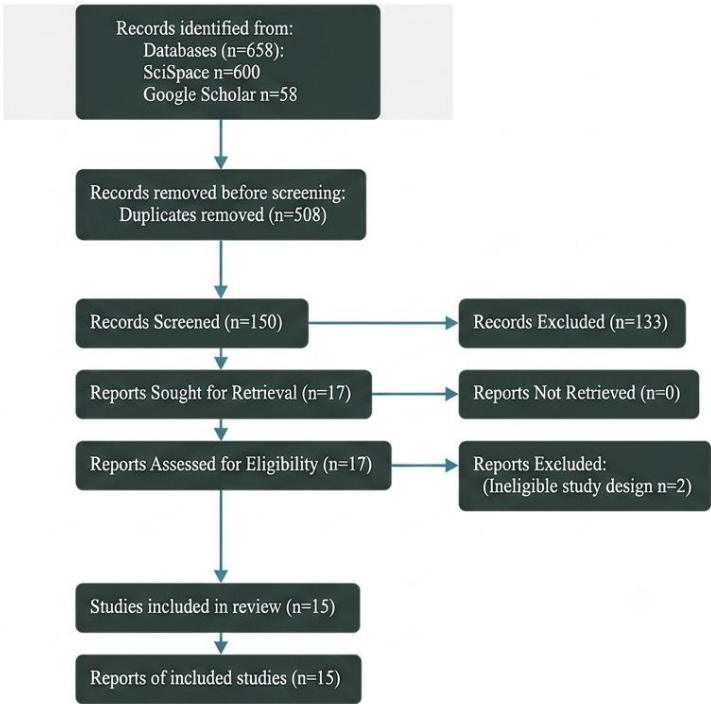


Table 1: Characteristics of Included Studies (N=15)

Study	Country	Educational level	Design	Sample size	Data collection	Key focus
Tran et al. (2024)	Vietnam	Tertiary	Qualitative	9	Semi-structured interviews	ChatGPT in teacher PD
Nguyen (2023)	Vietnam	Tertiary	Mixed-methods	20	Survey + interviews	ChatGPT in writing instruction
Nguyen (2024)	Vietnam	Tertiary	Quantitative	Not specified	Questionnaire	ChatGPT in teaching and assessment

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Nguyen et al. (2025)	Vietnam	Tertiary	Qualitative	28	Semi-structured interviews	ChatGPT in writing instruction
Mutammi mah et al. (2024)	Indonesia	Mixed	Quantitative	114	Survey (SEM analysis)	Technology acceptance (TAM)
Nernere & Kastuhandani (2024)	Indonesia	Secondary	Qualitative	8	In-depth interviews	Lived experiences with ChatGPT
Slamet (2024)	Indonesia	Secondary	Quantitative	80 teachers, 46 students	Survey	ChatGPT as learning assistant
Setyaningsih et al. (2024)	Indonesia	Secondary	Mixed-methods	38	Post-workshop questionnaire + FGI	AI (MagicSchool) for lesson planning
Hasanah et al. (2025)	Indonesia	Secondary	Mixed-methods	20 (survey), 12 (interviews)	Questionnaire + interviews	AI bias and teacher agency
Apoko (2025)	Indonesia	Vocational	Mixed-methods	37	Sequential explanatory design	Gen-AI in vocational EFL
Chung & Jeong (2024)	China	Pre-service	Quantitative	134	Survey	Pre-service teacher perceptions
Huang et al. (2024)	China	Tertiary	Qualitative	15	Semi-structured interviews + FGI	Gen-AI in speaking instruction

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Islam & Mumu (2024)	Bangladesh	Mixed	Quantitative	31	Questionnaire (SPSS analysis)	Perceptions and hesitancy
Dilzhan (2024)	Kazakhstan	Mixed	Qualitative	11	Semi-structured interviews	ChatGPT use and perceptions
Alruwaili & Kianfar (2025)	Saudi Arabia	Tertiary	Qualitative	13 (female teachers)	Interpretive interviews	Female teachers' attitudes

Note: PD = Professional Development; FGI = Focus Group Interview; TAM = Technology Acceptance Model; SEM Structural Equation Modeling

The 15 included studies represented a diverse array of Asian geographic contexts. The majority of the research was concentrated in Southeast Asia, specifically in Indonesia (n=6, 40%) and Vietnam (n=4, 27%). The remaining studies were distributed across East Asia (China, n=2, 13%), South Asia (Bangladesh, n=1, 7%), Central Asia (Kazakhstan, n=1, 7%), and West Asia (Saudi Arabia, n=1, 7%). Regarding the educational settings, over half of the investigations focused on the tertiary or university levels (n=8, 53%). Secondary-level educational contexts were examined in three studies (20%), and an additional three studies (20%) explored mixed educational levels. One study (7%) specifically targeted vocational education.

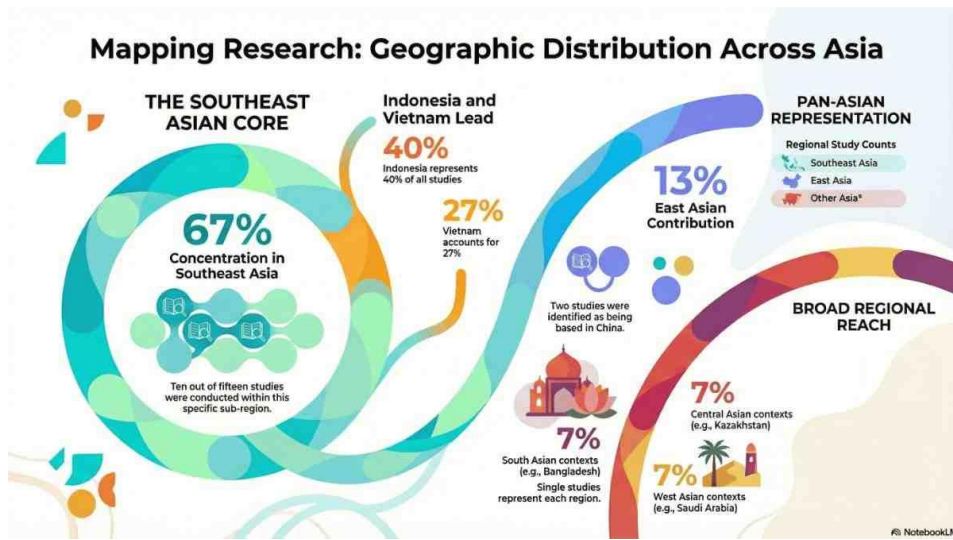
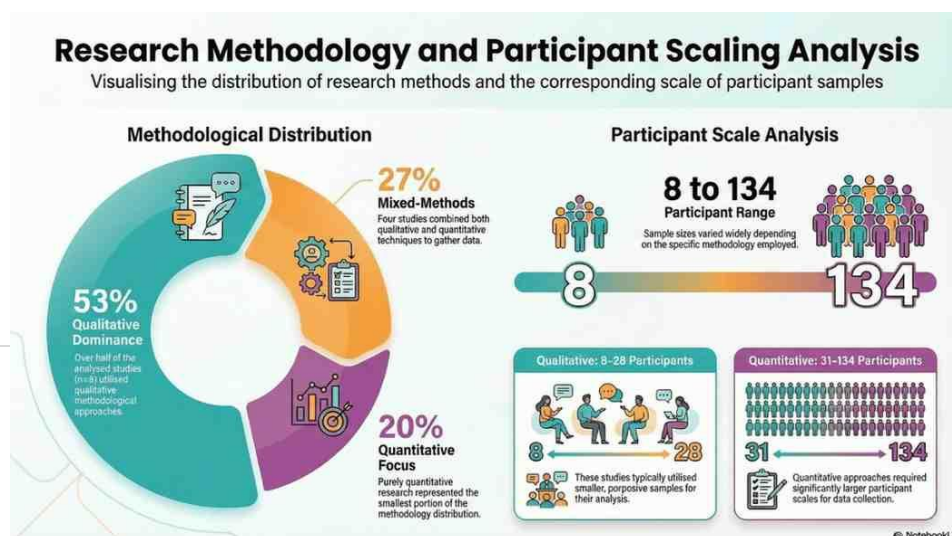


Figure 2: Geographic Distribution

Methodologically, the reviewed literature demonstrated a preference for qualitative approaches, which were employed in eight studies (53%). Mixed-methods designs were utilized in four studies (27%), while purely quantitative approaches were the least common (n=3, 20%). The participant sample sizes across the literature ranged from 8 to 134 individuals. Consistent with standard research practices, qualitative inquiries typically relied on smaller, purposive samples (ranging from 8 to 28 participants), whereas quantitative studies utilized larger cohorts (ranging from 31 to 134 participants).

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Figure 3: Methodological Approaches

Risk of Bias Assessment

Quality appraisal revealed that the included studies generally demonstrated adequate methodological rigor. A notable strength across the literature was the consistent alignment of research designs with their respective research questions. Furthermore, data collection methods were typically well documented. Qualitative investigations consistently provided rich, contextualized data, whereas quantitative studies effectively utilized validated or adapted instruments. Additionally, most authors transparently acknowledged their methodological limitations.

Despite these strengths, several recurring methodological limitations were identified. Sample size and representativeness were common issues; multiple qualitative studies relied on small cohorts ($n=8-11$), restricting transferability, and some quantitative studies were potentially underpowered for complex analyses. Generalizability was further constrained by a heavy reliance on convenience or purposive sampling, with only one study (Mutammimah et al., 2024) employing probability sampling. The literature also exhibited geographic clustering predominantly in Indonesia and Vietnam, which limits representation from broader Asian contexts. Furthermore, theoretical grounding was sparse; only three studies (Mutammimah et al., 2024; Tran et al., 2024; Chung & Jeong, 2024) explicitly integrated frameworks such as TAM or TPACK. Methodologically, all included research was cross-sectional, thus precluding the examination of how teacher perceptions might evolve over time. Finally, reporting completeness varied, with some studies omitting detailed participant demographics, and very few qualitative papers explicitly addressing researcher positionality or reflexivity.

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Despite these identified limitations, the convergence of findings across diverse methodological approaches and geographic contexts strengthens confidence in the overall synthesis. To ensure ongoing rigor, findings derived from studies with significant methodological constraints are interpreted with appropriate caution and explicitly noted throughout the synthesis.

Results of Syntheses

Overview of Key Themes

A comprehensive synthesis of the 15 included studies revealed four overarching thematic domains. First, regarding teacher perceptions, educators generally expressed cautiously optimistic views, balancing a clear recognition of ChatGPT's utility with significant underlying concerns. Second, the literature highlighted a universal and urgent demand for comprehensive professional development and training. Third, teachers reported various challenges and barriers to integration, spanning technical, pedagogical, ethical, and institutional obstacles. Finally, the synthesis identified numerous opportunities and pedagogical benefits, with teachers recognizing the tool's affordances for lesson planning, feedback generation, instructional differentiation, and overall efficiency. Notably, while these four themes demonstrated strong cross-national convergence, they also manifested with distinct, context-specific variations across the represented Asian regions.

Synthesis by Country/Region

Vietnam (n=4 studies)

Vietnamese studies have consistently documented positive yet cautious teacher attitudes toward the integration of ChatGPT in EFL instruction. Research has highlighted diverse applications; for example, Tran et al. (2024) found that ChatGPT supported personalized professional development and stimulated peer discussion among teachers, while Nguyen et al. (2025) documented 28 EFL lecturers utilizing the tool across all stages of writing instruction (prewriting brainstorming, grammar checks, and post-writing proofreading). Despite this enthusiasm, significant concerns have been raised regarding accuracy, student over-reliance, and the technological challenges faced by older educators (Nguyen, 2023; Tran et al., 2024). Consequently, all Vietnamese studies have emphasized the urgent need for professional development. The authors have specifically called for institutional support and targeted training focused on prompt design skills, understanding AI limitations, managing assessment integrity, and establishing

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clear usage boundaries for students (Nguyen, 2023; Nguyen, 2024; Nguyen et al., 2025).

Indonesia (n=6 studies)

Indonesian studies provided the most extensive evidence base in this review, combining quantitative, qualitative, and mixed-methods approaches. Quantitatively, Mutammimah et al. (2024) employed structural equation modeling (n=114) to test a technology acceptance model, confirming that perceived usefulness and ease of use significantly predicted Indonesian teachers' behavioral intention to use ChatGPT. Qualitative and mixed-methods research revealed highly nuanced classroom experiences. While teachers across various levels—including high school, junior high, and vocational settings—recognized AI's benefits for accelerating lesson planning, idea generation, and individualized learning, their excitement was often tempered by concerns over language accuracy, technological dependence, and cultural representation (Apoko, 2025; Hasanah et al., 2025; Nernere & Kastuhandani, 2024; Slamet, 2024). Furthermore, studies investigating specific tools, such as MagicSchool AI, noted that outputs frequently required teacher oversight and modification to maintain pedagogical quality and localize content (Hasanah et al., 2025; Setyaningsih et al., 2024). To address these complexities, the Indonesian literature universally stressed the need for comprehensive professional development encompassing technical prompt-engineering skills, critical evaluation of AI outputs, pedagogical alignment, and ethical/cultural competencies for equitable use.

China (n=2 studies)

Chinese literature has examined both pre-service and in-service teacher perspectives, revealing a shared tension between efficiency and ethical risks. Chung and Jeong (2024) surveyed 134 PSTs who recognized AI's potential for grammar instruction and writing efficiency but expressed deep concerns regarding data privacy, academic integrity, and the erosion of critical thinking and authentic human interaction. Similarly, Huang et al. (2024) found that while 15 college English teachers valued generative AI for providing immediate, personalized speaking feedback, they flagged AI inaccuracies and insufficient training as major barriers. Both studies emphasized the necessity of blended learning models and targeted training to equip educators with the skills to integrate AI responsibly while preserving human interaction and cultural sensitivity.

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Bangladesh (n=1 study)

In a quantitative survey of 31 English teachers in Bangladesh, Islam and Mumu (2024) found that approximately 80% of participants were willing to recommend ChatGPT, despite exhibiting some hesitancy. The study demonstrated a clear correlation between teachers' familiarity with the tool and their positive attitudes toward it. Furthermore, the findings revealed a high willingness among participants to receive professional training. This pilot study illustrates that, even in contexts with potentially limited technological infrastructure, teachers express strong openness to generative AI, alongside clear demands for formal training.

Kazakhstan (n=1 study)

Offering a Central Asian perspective, Dilzhan (2024) conducted semi-structured interviews with 11 EFL teachers. The participants expressed a blend of enthusiasm and caution, highly valuing the tool for quick lesson ideation and student engagement, while simultaneously voicing concerns about academic dishonesty, over-reliance, and the challenges of prompt design. Consistent with patterns observed in other regions, this study highlighted the critical necessity for extensive training, uniquely emphasizing the importance of structured institutional policy frameworks to optimize AI integration.

Saudi Arabia (n=1 study)

Exploring a West Asian context, Alruwaili and Kianfar (2025) conducted interpretive qualitative interviews with 13 female Saudi EFL teachers at Al-Manar University. The participants generally viewed ChatGPT positively for designing assessments, planning lessons, and boosting student engagement. However, they shared common concerns regarding output credibility and the risk of student dependence harming critical thinking. The authors advocated for professional development aimed at promoting responsible AI use while fostering student-centered learning in culturally appropriate ways, notably highlighting the importance of gender and cultural considerations in the design of such training.

Cross-Cutting Theme 1: Teacher Perceptions Positive Perceptions and Recognized Benefits

Across all geographic contexts, educators exhibited cautiously optimistic views, recognizing multiple functional benefits of integrating ChatGPT into their practice. The most consistently reported advantage was in lesson planning and

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preparation; teachers highly valued the tool for generating ideas, creating materials, and significantly accelerating the planning process (Alruwaili & Kianfar, 2025; Dilzhan, 2024; Hasanah et al., 2025; Nernere & Kastuhandani, 2024; Setyaningsih et al., 2024; Tran et al., 2024). For instance, Setyaningsih et al. (2024) highlighted how AI accelerated planning while simultaneously supporting instructional differentiation among Indonesian high school teachers. Closely tied to this was a broader appreciation for efficiency, with teachers frequently noting that ChatGPT saved valuable time and increased overall instructional productivity (Chung & Jeong, 2024; Dilzhan, 2024). Furthermore, educators valued the tool for their own professional development, utilizing it to link pedagogical theory to practice and stimulate peer discussions (Tran et al., 2024).

In addition to administrative efficiency, teachers recognized substantial student-facing and pedagogical benefits. ChatGPT was frequently cited for its utility in providing feedback and assessment, particularly for providing immediate, personalized feedback on student writing, checking grammar, and proofreading (Nguyen et al., 2025). Similarly, Huang et al. (2024) found that Chinese teachers highly valued AI for generating immediate, personalized feedback in speaking instruction. This capacity for personalization extended to broader differentiation, with studies confirming that both teachers and students recognized the tool's potential to facilitate highly individualized learning experiences (Slamet, 2024; Tran et al., 2024). Ultimately, these interactive and personalized affordances contributed to an increase in overall student engagement and classroom motivation (Alruwaili & Kianfar, 2025; Huang et al., 2024).

Concerns and Negative Perceptions

Despite its widely recognized benefits, educators across the included studies expressed significant and pervasive concerns regarding the integration of generative AI. A primary pedagogical apprehension centered on student over-reliance; teachers frequently worried that excessive dependence on ChatGPT would diminish students' critical thinking, independent learning skills, and academic integrity through increased risks of plagiarism and cheating (Alruwaili & Kianfar, 2025; Chung & Jeong, 2024; Dilzhan, 2024; Nguyen et al., 2025; Slamet, 2024). Furthermore, some educators questioned the pedagogical value of AI-mediated communication, raising concerns about the authenticity of such language interactions (Chung & Jeong, 2024).

In addition to student-facing issues, teachers reported substantial technical and institutional hurdles. Concerns regarding the accuracy and reliability of

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ChatGPT outputs, particularly concerning language feedback in speaking and writing instruction, were pervasive (Huang et al., 2024; Nguyen et al., 2025; Slamet, 2024). Consequently, teachers noted that AI-generated materials often required significant adaptation and refinement to ensure pedagogical appropriateness (Hasanah et al., 2025; Nernere & Kastuhandani, 2024; Setyaningsih et al., 2024). These technical demands disproportionately affected older or less technologically confident educators (Tran et al., 2024). Compounding these practical challenges were broader systemic issues; teachers consistently reported feeling inadequately trained to use the tool effectively and raised serious ethical concerns regarding data privacy, algorithmic bias, and equitable cultural and linguistic representation (Chung & Jeong, 2024; Hasanah et al., 2025; Huang et al., 2024; Nguyen, 2023; Nguyen, 2024).

Cross-Cutting Theme 2: Professional Development Needs

A remarkable convergence across all 15 included studies was the universal and urgent demand for comprehensive professional development. The identified training needs can be systematically categorized into a four-dimensional framework. First, foundational **technical skills** are required, encompassing basic ChatGPT operation, technical troubleshooting, and a clear understanding of the tool's capabilities and limitations (Nguyen, 2023). Most notably, studies emphasized the critical need for training in prompt engineering and design (Dilzhan, 2024; Nguyen et al., 2025; Setyaningsih et al., 2024). Second, teachers require support for **pedagogical integration**. This involves training on how to seamlessly integrate ChatGPT into lesson planning and across different instructional stages, as well as strategies for combining AI with existing classroom resources (Nguyen et al., 2025; Setyaningsih et al., 2024). Furthermore, educators need specific techniques for maintaining pedagogical quality, evaluating and refining AI outputs, and aligning these tools with broader curricular goals and blended learning models (Huang et al., 2024; Nernere & Kastuhandani, 2024; Slamet, 2024).

Third, the literature highlighted the profound need for **ethical and critical competencies**. Teachers must be trained to critically evaluate AI outputs for factual accuracy and appropriateness (Huang et al., 2024; Setyaningsih et al., 2024), while simultaneously addressing inherent algorithmic biases (Hasanah et al., 2025). Training in this dimension must also cover data privacy, the promotion of academic integrity, and strategies to prevent student over-reliance and misuse (Alruwaili & Kianfar, 2025; Chung & Jeong, 2024; Dilzhan, 2024; Nguyen, 2023;

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Nguyen et al., 2025). Finally, **cultural and contextual competencies** emerged as vital dimensions. Professional development must equip teachers with the skills to localize and adapt AI-generated content to ensure cultural sensitivity and adequate linguistic representation within their specific educational contexts (Alruwaili & Kianfar, 2025; Chung & Jeong, 2024; Hasanah et al., 2025; Nernere & Kastuhandani, 2024).

In addition to the *content* of the training, the studies identified specific **delivery and support needs**. The literature clearly indicates that one-time workshops are insufficient; instead, educators require targeted, structured, and ongoing support programs (Chung & Jeong, 2024; Dilzhan, 2024; Huang et al., 2024; Tran et al., 2024). To be effective, this training should be differentiated to accommodate teachers at various career stages and technological confidence levels (Tran et al., 2024). Furthermore, successful implementation relies heavily on equitable access to training, opportunities for collaborative peer learning, and robust institutional policy guidance (Apoko, 2025; Dilzhan, 2024; Nguyen, 2024; Tran et al., 2024).

Cross-Cutting Theme 3: Challenges and Barriers

Moving beyond individual teacher perceptions and concerns, the synthesis revealed a complex web of systemic challenges impeding the effective integration of ChatGPT in EFL contexts. At the macro level, significant institutional and policy barriers were identified. Studies have highlighted a pervasive lack of institutional policies, structured guidelines, and overall administrative support, leaving teachers to navigate AI integration without a clear safety net (Dilzhan, 2024; Nguyen, 2024). Compounding these policy deficits were fundamental issues of infrastructure and access. Researchers have noted that technological infrastructure limitations, the need for more user-friendly interfaces, and inequitable access to premium AI tools present substantial hurdles to widespread and fair adoption (Apoko, 2025; Slamet, 2024).

At the micro level, educators faced immediate pedagogical and personal barriers. Pedagogically, teachers reported significant difficulty in maintaining instructional quality and effectively aligning AI-generated content with established curricula (Nernere & Kastuhandani, 2024; Slamet, 2024). Furthermore, educators struggled with the delicate balance of integrating AI efficiency while preserving essential authentic human interaction in the language classroom (Chung & Jeong, 2024). On an individual level, these pedagogical hurdles were exacerbated by teacher-level barriers, most notably insufficient training and

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pervasive uncertainty regarding appropriate use cases (Huang et al., 2024; Nguyen, 2023). The literature also highlighted technological confidence gaps—particularly among more experienced or older teachers—and the sheer amount of time required for educators to learn, adapt, and refine these tools for their specific contexts (Tran et al., 2024).

Cross-Cutting Theme 4: Opportunities and Benefits

Despite the acknowledged systemic and individual challenges, the synthesized literature revealed significant opportunities and benefits associated with ChatGPT integration, which can be broadly categorized into four domains. First, regarding instructional enhancement, teachers consistently noted that generative AI improved the overall quality of lesson planning, enhanced the provision of student feedback, supported differentiated instruction, and ultimately increased classroom engagement and motivation. Second, the tool serves as a unique catalyst for professional growth; as Tran et al. (2024) observed, ChatGPT functions as a valuable instrument for ongoing teacher professional development, fostering deep reflective practice, and stimulating peer collaboration around technology use. Third, the literature highlighted substantial avenues for pedagogical innovation. This includes novel approaches to writing instruction (Nguyen et al., 2025), enhanced opportunities for speaking practice (Huang et al., 2024), and the creation of highly personalized learning pathways (Slamet, 2024). Finally, efficiency gains were universally recognized across the studies. Educators reported significant time savings in both planning and material development, praising the tool for the rapid generation of pedagogical resources and the streamlining of routine assessment processes.

DISCUSSION

Summary of Evidence

This systematic review synthesized evidence from 15 empirical studies examining EFL teachers' perceptions and professional development needs related to ChatGPT across six Asian countries. The synthesis reveals a consistent pattern of cautiously optimistic teacher attitudes, characterized by a dual recognition of ChatGPT's utility alongside significant concerns regarding its accuracy, the potential for student over-reliance, ethical issues, and inadequate training.

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A primary finding was the universal recognition of the tool's utility; across all contexts, educational levels, and methodological approaches, teachers consistently acknowledged ChatGPT's potential to enhance lesson planning, provide immediate feedback, support differentiation, and increase overall instructional efficiency. However, despite these recognized benefits, educators expressed pervasive and consistent concerns regarding factual accuracy, academic integrity, and their own lack of preparedness. Rather than acting as strict barriers to adoption, these concerns functioned as indicators of thoughtful, critical engagement with the technology. Crucially, the studies documented that teachers are not passive recipients of AI; instead, they act as active agents who critically evaluate, adapt, and localize AI outputs, challenging prevailing deficit narratives (Hasanah et al., 2025; Nernere & Kastuhandani, 2024).

Consequently, a remarkable convergence emerged regarding universal and urgent professional development needs. All 15 studies identified critical gaps across four dimensions: technical skills (particularly prompt engineering), pedagogical integration strategies, ethical and critical competencies, and cultural/contextual adaptation. The consistency of this demand suggests that comprehensive professional development is essential, rather than merely desirable, for effective integration. While these overarching patterns were consistent, important context-specific variations also emerged. For example, Saudi Arabian teachers emphasized cultural appropriateness (Alruwaili & Kianfar, 2025), Indonesian teachers highlighted representation concerns (Hasanah et al., 2025), and Kazakhstani teachers stressed the need for institutional policy frameworks (Dilzhan, 2024)—underscoring the necessity of culturally responsive training. Ultimately, the robust convergence of these findings across qualitative, quantitative, and mixed-methods studies greatly strengthens confidence in this synthesis, with qualitative data providing rich contextual understanding to the patterns confirmed by quantitative studies (Huang et al., 2024; Islam & Mumu, 2024; Mutammimah et al., 2024; Tran et al., 2024).

Limitations of the Evidence

Limitations of the Evidence Base

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Although this systematic review provides valuable insights into EFL teachers' perceptions of ChatGPT, several limitations within the current evidence base must be explicitly acknowledged. Primarily, the literature suffers from a distinct geographic concentration. The included studies were heavily clustered in Indonesia (n=6) and Vietnam (n=4), leaving massive educational contexts—such as Japan, South Korea, India, and the broader Middle East—entirely unrepresented. This geographic imbalance significantly limits the generalizability of these findings across Asia. Compounding this issue is the recency and rapid evolution of the technology. All included studies were conducted within a few years of ChatGPT's release, capturing initial reactions rather than settled practices. Because all studies employed cross-sectional designs, they only capture perceptions at a single time point, precluding an understanding of how teacher attitudes and integrations might evolve over time.

Methodologically, the evidence base is constrained by sampling and theoretical limitations. Many qualitative investigations relied on very small sample sizes (n=8–15), which, while appropriate for deep qualitative inquiry, limits the broader transferability of the perspectives captured. Furthermore, the vast majority of studies utilized convenience or purposive sampling, with only one study (Mutammimah et al., 2024) employing probability sampling. Theoretical grounding was also notably sparse, with only three studies explicitly anchoring their research in established frameworks, such as TAM or TPACK. A critical gap in the current literature is the complete lack of student outcome data; no studies have empirically examined the direct relationship between teacher AI use and actual student learning outcomes, limiting our understanding of the tool's ultimate educational impact.

Finally, certain reporting and publication constraints must be noted. Several studies lacked detailed demographic data, thorough methodological procedures, or qualitative reflexivity statements, which constrained the depth of the quality appraisal. Additionally, because the systematic search was limited to peer-reviewed English-language journal articles, there is a risk of publication bias,

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potentially excluding relevant insights published in other languages, conference proceedings, or grey literature.

Limitations of the Review Process

In addition to the constraints of the evidence base, limitations regarding the review process itself must be acknowledged. First, regarding database coverage, while SciSpace and Google Scholar provided a broad sweep of the literature, other major academic databases (e.g., ERIC, Web of Science, Scopus) were not searched, which may have resulted in the omission of relevant studies. Second, a language restriction was applied; by limiting the search exclusively to English-language publications, this review may have inadvertently excluded highly relevant studies published in local Asian languages. Finally, while data extraction was robustly conducted by two independent reviewers, general resource constraints may have limited the overall depth of the subsequent quality appraisal process.

Implications for Practice and Policy

The findings of this review have significant implications for multiple stakeholders, particularly for **teacher educators and professional development providers**.

First and foremost, the literature dictates that training programs must be comprehensive and multi-dimensional. One-dimensional workshops focused solely on basic technical operations are insufficient; instead, programs must holistically address the technical, pedagogical, ethical, and cultural dimensions of AI integration. Within the technical domain, prompt engineering must be treated as a core competency. Explicit training in prompt design and iterative refinement should be a central component of professional development, as this specific skill has emerged as critical across multiple contexts (Dilzhan, 2024; Nguyen et al., 2025; Setyaningsih et al., 2024). Furthermore, teachers urgently require dedicated training to develop critical evaluation skills, empowering them to properly assess AI outputs for factual accuracy, appropriateness, algorithmic bias, and cultural relevance (Hasanah et al., 2025; Huang et al., 2024; Setyaningsih et al., 2024).

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To ensure that these programs are effective, their delivery must be modernized. Training should be actively differentiated to accommodate teachers' varying career stages, existing technological confidence, and prior experience with AI tools (Tran et al., 2024). The synthesis clearly demonstrates that isolated, one-time workshops are inadequate. Instead, educators require ongoing support, established peer learning communities, and structured opportunities for collaborative exploration (Tran et al., 2024). Finally, the design of these professional development initiatives must be inherently culturally responsive, actively addressing context-specific concerns, linguistic nuances, and regional educational values to ensure successful localization (Alruwaili & Kianfar, 2025; Hasanah et al., 2025).

For Educational Institutions and Administrators:

In addition to professional development providers, the findings of this review have critical implications for educational institutions and administrators. Primarily, there is an urgent need for proactive policy development. Institutions must establish clear, comprehensive guidelines governing ChatGPT use that explicitly address academic integrity, data privacy, and parameters for appropriate classroom application (Dilzhan, 2024). Beyond creating policies, schools must build sustainable institutional support structures. This requires moving beyond initial, one-off training sessions to provide ongoing technical support, dedicated pedagogical consultation, and accessible resources for AI integration (Nguyen, 2024).

Furthermore, administrators must prioritize the foundational prerequisites for technological success. Equitable access is paramount; institutions must ensure that all teachers, regardless of their department or technological background, have fair access to premium AI tools and training opportunities (Apoko, 2025). This naturally requires substantial infrastructure investment to guarantee that adequate technological frameworks and user-friendly interfaces are firmly in place (Slamet, 2024). Finally, acknowledging the significant learning curve associated with generative AI, school leaders must provide educators with the most critical

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resource of all: dedicated time. Teachers require protected time and institutional resources to engage in the necessary learning, pedagogical experimentation, and contextual adaptation required for effective and responsible AI integration.

For Policy Makers

At the macro level, national policymakers play a crucial role in shaping the educational landscape for AI adoption. National education authorities must proactively develop comprehensive guidelines for AI integration in EFL instruction, carefully balancing the drive for technological innovation with strict quality assurance and ethical considerations. To support these guidelines, significant financial investment in comprehensive, ongoing professional development is essential; policymakers must view this funding not as an optional enhancement, but as a mandatory prerequisite for effective and safe AI integration. Furthermore, national bodies should direct robust funding toward empirical research on ChatGPT integration, specifically prioritizing longitudinal studies and investigations into student learning outcomes that are currently missing from the literature. Finally, given the strong convergence of findings across various Asian contexts, policymakers should actively pursue regional collaboration to share professional development resources, align policy frameworks, and pool research efforts.

For Teachers

Ultimately, the successful integration of AI depends on individual educators in the classroom. The findings suggest that teachers must commit to active, critical engagement with ChatGPT, continuously recognizing both its powerful affordances and inherent pedagogical limitations. Rather than utilizing AI outputs uncritically, educators should actively adapt and localize generated materials to suit their specific cultural and instructional contexts (Hasanah et al., 2025). To navigate this steep learning curve, teachers should intentionally seek out opportunities for peer learning and the collaborative exploration of AI tools within their departments (Tran et al., 2024). Finally, teachers must act as their own advocates, actively communicating with administration to secure professional

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development, institutional support, and structured policy frameworks to integrate these tools effectively and responsibly.

Implications for Research

Methodological priorities

Building on the limitations identified in the current evidence base, this review highlights several critical directions and methodological priorities for future research. Primarily, longitudinal studies are urgently needed to examine how teacher perceptions, practices, and core competencies evolve over time as both educators gain experience and technology advances. Furthermore, cross-national comparative studies are needed to illuminate how distinct cultural, institutional, and policy contexts shape teacher adoption and integration practices across different regions. Crucially, future research must expand beyond teacher perceptions to include student outcome research; empirical studies must examine the direct relationships between a teacher's ChatGPT use and actual student learning outcomes, encompassing metrics such as language proficiency, classroom engagement, motivation, and critical thinking development.

To achieve these goals, researchers must prioritize specific methodological designs. Implementation research is necessary to move beyond self-reported perceptions and provide detailed observational documentation of how teachers utilize ChatGPT in specific instructional contexts. Additionally, the field requires rigorous intervention studiesutilizing experimental or quasi-experimental designsto formally evaluate the effectiveness of different professional development approaches and training frameworks. Finally, given the inherent complexity of integrating generative AI into language education, future researchers should prioritize mixed-methods designs that thoughtfully combine the statistical breadth of quantitative surveys with the contextual depth of qualitative inquiry.

Substantive Priorities

In addition to methodological shifts, this review identifies several vital substantive priorities for future research. First, there is an urgent need to expand

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the geographical and demographic scope of the literature. Research must deliberately target underrepresented Asian contexts, including Japan, South Korea, the Philippines, Malaysia, Thailand, India, Pakistan, Iran, and Turkey, to establish a truly comprehensive regional understanding. Within these contexts, studies should actively examine the perceptions and needs of diverse teacher populations. This includes capturing the distinct experiences of educators at varying career stages, across different educational levels (particularly primary education), in rural versus urban settings, and among those with varying degrees of technological access.

In the classroom, researchers must broaden their pedagogical focus. While AI-assisted writing instruction has received considerable attention, future studies should investigate ChatGPT's application across other core domains, including speaking, listening, reading, vocabulary acquisition, grammar, and assessment. Parallel to this instructional expansion, the field requires deep, critical examinations of the ethical dimensions of AI integration. Future research must rigorously address issues of algorithmic bias, fairness, data privacy, and academic integrity, while also exploring the broader philosophical implications of generative AI on teacher professionalism, agency, and pedagogical autonomy.

Finally, research must address systemic and theoretical gaps. Scholars should formally evaluate the comparative effectiveness of different professional development approaches to determine which frameworks best cultivate specific technical and pedagogical competencies. On a macro level, investigations should examine how institutional policies, administrative leadership, and localized support structures actively shape teacher adoption. To ground all of this future work, scholars should prioritize theoretical development by employing and expanding upon established frameworks, such as the technology acceptance model (TAM), TPACK, diffusion of innovations theory, and sociocultural theory, to deepen our fundamental understanding of AI adoption processes and mechanisms.

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Methodological Improvements

To ensure that future evidence is both rigorous and reliable, the research community must adopt several methodological improvements. First, quantitative investigations must move beyond convenience sampling to employ larger, representative samples, utilizing probability sampling wherever feasible to enhance generalizability. To support these larger studies, researchers must prioritize the development and rigorous validation of survey instruments specifically designed to assess teacher perceptions and technical competencies regarding ChatGPT in EFL contexts. Second, to enhance the validity of their findings, future studies should actively employ data triangulation by combining multiple data sources and mixed methodologies. In qualitative inquiries, researchers must prioritize transparency by including detailed reflexivity statements that explicitly address researcher positionality and its potential influence on data interpretation. Finally, to foster a more cumulative and reliable body of knowledge, the field must embrace open science practices. Researchers should commit to preregistration, active data sharing, and highly transparent reporting standards to ensure the reproducibility of future findings.

CONCLUSION

Summary of Key Findings

This systematic review synthesized evidence from 15 empirical studies across six Asian countries regarding EFL teachers' perceptions of ChatGPT. The synthesis reveals a clear, consistent pattern: while teachers recognize the tool's instructional potential, they hold significant concerns regarding accuracy, student over-reliance, and ethical implications. The literature confirms that EFL teachers are not resistant to AI. Instead, they demonstrate critical agency—actively evaluating and localizing AI outputs—while urgently seeking the comprehensive professional development and institutional support required for responsible integration.

Implications and Addressing Limitations

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The convergence of these findings dictates that multi-dimensional, culturally responsive professional development is an absolute necessity, not an optional enhancement. Institutions and policymakers must actively invest in training that encompasses technical, pedagogical, and ethical competencies, supported by clear policies and robust infrastructure. However, realizing this requires addressing significant gaps in the current literature. Future researchers must move beyond the current reliance on geographically concentrated, cross-sectional, and small-sample studies. The field urgently requires longitudinal tracking, cross-national comparative designs, and rigorous empirical investigations into how AI integration impacts student learning outcomes.

Final Outlook

As generative AI continues to rapidly evolve and embed itself within global education systems, supporting educators will be a critical lever for maximizing technological benefits while mitigating risks. This review establishes a vital foundation for shaping evidence-based policies, practices, and research agendas needed to navigate this dynamic domain.

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