Eternal: English Teaching Journal
Vol. 16, No. 2, pp. 465-484, August 2025
https://doi.org/10.26877/eternal.v16i2.1691
Received Feb 17, 2025; Revised Jun 7, 2025; Accepted Aug 4, 2025

The Integration of Artificial Intelligence (AI) In English Language Teaching Practices: A Meta-Synthesis Study

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Abstract. A great number of studies researching the incorporation of AI into English language teaching have grown significantly within the last five years. Nevertheless, to date, limited studies have been found to specifically review studies regarding AI integration in English language teaching. To fill the gap, this meta-synthesis study aims at presenting a summary of qualitative literature exploring how AI is integrated in English language teaching. Sixteen out of forty-seven articles were selected from various reputable databases as well as peer-reviewed journals (i.e., Scopus indexed) including Taylor & Francis, Science Direct, Wiley, Emerald, and ProQuest. Only qualitative data were processed and analysed thematically. Findings revealed some emerging themes: 1) student and teacher's views towards AI integration in ELT, 2) benefits and drawbacks of AI integration in ELT, and 3) the role of AI for language skill improvement. In addition, the study shed light on several research topics recommended for further research.

Keywords: Artificial intelligence (AI), English language teaching (ELT), integration, meta-synthesis

Introduction

Within the last few years, artificial intelligence (AI) has been becoming a sparkling issue in education, including English language teaching (Liu, 2024). AI has significantly transformed the traditional teaching approaches of ELT by offering new experiences such as personalized and dynamic learning (Al-khresheh, 2024a), assisting teachers to complete their administrative tasks (Ulla et al., 2023), and automated grading system (Akbarani, 2023; Alharbi, 2023). Through AI, English language teachers can adapt learning materials adjusting with individual needs such as learning styles, interests, and language proficiency (Qin & Zhong, 2024).

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For example, teachers use AI-powered platforms such as Duolingo and Quizziz to diagnose students' English language proficiency, identify their weak points, and tailor the lesson accordingly. Similarly, using AI enables dynamic learning where students get involved in real-time feedback, personalized content delivery, active participation, and critical thinking (Sajja et al., 2024). For example, using Chat GPT, students obtain feedback on some aspects of their writings including contents, vocabulary, and grammar instantly and encourage them to actively as well as critically revise their writings in regard with the given feedback. In terms of administrative tasks, teachers can utilize AI for preparing lesson plans and creating various, up-to-date learning materials (Kim, 2024). Meanwhile, when it comes to assessment, AI allows the process of automated grading system making English language teachers having more efficient way of assessing students' works (Gozali et al., 2024). For example, the use of automated writing evaluation (AWE) for evaluating students' writings.

Myriad studies have reported empirical evidence on the practical benefits of using AI for ELT. They contributed to the enrichment of the literature informing ELT teachers on how to adopt AI in classroom teaching practices. However, limited studies comprehensively review and holistically navigate important themes on the integration of AI in ELT. To fill this gap, the present study reports some key themes related to AI integration in ELT covering students-teachers' views, AI benefits and drawbacks, and AI impact on language skills development. The key themes drive this systematic literature review exploration and they are determined based on the following rationale. Understanding the perceptions of both students and teachers on the use AI is needed to reveal their attitudes and acceptance towards this technology. Furthermore, knowing the advantages and disadvantages of AI helps teachers to critically evaluate and take into consideration of AI use for their future teaching practices. Another central theme is exploring how AI contributes to the development of four language skills (i.e., listening, speaking, reading, and writing) as achieving these skills are the ultimate goal of language learning. Thus, to achieve the objectives of this study, the research explores several key questions. First, it explores students and teachers' views of using AI in ELT practices. Second, it seeks to identify the benefits and drawbacks of AI integration in ELT practices. Finally, the study examines the extent to which AI contributes to the effective teaching of the four language skills: listening, speaking, reading, and writing.

Literature Review

AI and Related Language Learning Approach

In the context of language education, AI can be viewed under CALL (Computer-Assisted Language Learning) approach coined by Davies and Steel (1981) (Davies et al., 2013). As a language learning approach, in general, CALL can be defined as the use of technology in the effort of supporting the successful language teaching and learning. This is relevant to what has been stated by scholars such as "the search for and study of applications of the computer in language teaching and learning" (Levy, 1997, p. 1) and situations where language learners employ computers to support their language proficiency development (Beatty, 2010). The development of CALL has been categorized into three stages namely

Structural CALL in the 1970s-1980s, Communicative CALL in the 1980s-1990s, and Integrative CALL in the 21st century (Warschauer, 2000). As the internet was growing fast and AI was getting adopted in education in the beginning of 2000, the third stage of CALL development, the Integrative CALL marks the emergence of the sub-field of CALL, known as Intelligent Computer-Assisted Language Learning (ICALL) (Warschauer & Healey, 1998). Briefly, ICALL can be understood as part of CALL allowing the integration of AI including its concepts, techniques, and technologies into CALL itself (Gamper & Knapp, 2002; Heift & Schulze, 2007; Schulze & Heift, 2013). Although ICALL belongs to CALL, they should be clearly differentiated as "AI is what sets certain software apart from computer programs in general" (Dodigovic, 2005, p. 2) highlighting that the use of AI represents a specific technology employment for supporting language teaching and learning. In conclusion, AI integration in ELT can be viewed under ICALL, one of the relevant language learning approaches to this technology.

The Employment of AI in ELT

Recently, AI becomes a pivotal issue in the field of ELT due to its influence in transforming traditional methods of language teaching and learning (Yeh, 2024b). A number of studies have reported the potential of AI for leveraging the quality of language education despite some drawbacks resulted from this technology (Gozali et al., 2024; Liu, 2024; Mahapatra, 2024; Marzuki et al., 2023; Waziana et al., 2024). AI-based tools in the form of chatbots, intelligent tutoring systems, and platforms/apps have opened opportunities for more personalized way of learning. Basically, AI-driven system has an ability to assess language learners' strengths and weaknesses allowing for feedback delivery on the basis of their level of language proficiency (AbuSahyon et al., 2023). For example, using Chat GPT for aiding students in developing their writing practices. As reported by some studies, AI-based writing tools such as WordTune, Jenni, Chat GPT, Paperpal, Copy.ai, and Essay Writer were proven to be able to provide immediate feedback on students' writings including idea generation, vocabulary and language use, coherence and logical flow, use of transition words and phrases (Gültekin Talayhan et al., 2023; Marzuki et al., 2023). In the same way, in speaking, by using chatbots students can get real-time corrections on their speaking performance such as pronunciation, grammatical errors, and vocabulary use (Fathi et al., 2024; Huang et al., 2022; Tai & Chen, 2024). This illustrates the possibility of AI-based tools to encourage students improving their language proficiency without waiting for teachers input that might need to take longer time. Additionally, chatbots enable more realistic conversations which are very useful for EFL learners where they have very limited exposure with real-life English conversations by native speakers (Fathi et al., 2024; Jeon, 2024). Moreover, AI-based tools are not only providing benefits for language learners but also for their teachers. In this case, several AI-based tools can reduce ELT teachers' workload particularly when dealing with administrative and repetitive tasks including grading students' essays, tracking students' learning progress, designing lesson plans, and preparing learning materials, for example, using Chat GPT to design course plans in a Law English Course (Kostikova et al., 2024), using automated writing evaluation (i.e., pigai.org) to assess students' essays (Zhai & Ma, 2022), and employing Duolingo to track students' learning progress (Z. Li et al., 2024). This leads to a positive consequence as ELT teachers have more time to focus on creating more interactions with their

students (Seo et al., 2021). Nevertheless, AI technology, like everything else, comes up without its flaws. When using AI technology, ELT teachers have to be aware of its potential drawbacks such as risk on data privacy, overreliance on technology, ethical consideration, and reduction of teachers' roles (Al-khresheh, 2024b). Despite these concerns, however, AI technology can be wisely used to complement traditional teaching methods of ELT for achieving better quality of language education.

Critical Issues in Current Studies

While the existing literature has reported valuable insights into the use of AI in English language teaching, a critical evaluation of the reviewed studies reveals some notable limitations. First, many studies emphasize the technical affordances of AI tools (e.g., personalization, automation, and real-time feedback) without describing in depth-analysis of how these tools are grounded within pedagogical framework and learning theories like what has been reported by Wang & Vásquez (2012) where Web 2.0 technologies often neglected theoretical and pedagogical grounding. Second, dominantly, the existing studies rely much on short-term interventions which limits its applicability and generalizability into wider real-world classroom settings (Zawacki-Richter et al., 2019). Third, while learner perceptions and experiences become the central issue in the application of AI in language education (e.g., Fathi et al., 2024; Waziana et al., 2024), limited studies focus on teacher readiness, educational policy, curriculum, and ethical issues. Furthermore, only a few studies are grounded in robust theoretical frameworks (de Oliveira & dos Santos, 2025; Robillos, 2024), resulting in fragmented conclusions about the educational impact of AI. These gaps highlight the need for more longitudinal, classroom-based, and theory-informed investigations that address both the affordances and limitations of AI in diverse ELT settings.

Method

The present study employed a meta-synthesis as its method for synthesizing the qualitative data gathered from the existing research. Though meta-synthesis is more popular to be used for reviewing qualitative studies in health sciences, this method is also applicable for educational field recently (Cin et al., 2022), including language education. According to Jensen and Allen (1996) meta-synthesis is a relatively new method of examining qualitative studies and this method is different from systematic review and/or meta-analysis which focuses more on comparing data from quantitative research with statistical analysis (Walsh & Downe, 2005). Meta-synthesis was deemed to be the relevant method for carrying out this study as it enables to help the researchers examining qualitative data from previous research related to the integration of AI in the context of English language teaching. This study followed the six steps of conducting meta-synthesis presented as follows (Erwin et al., 2011).

Step 1. Formulate a Clear Research Problem and Question

The first step of conducting this meta-synthesis study is formulating research problems and stating the research questions. As this study focuses on the phenomenon of AI integration in English language teaching, some relevant research questions drive this exploration. Hence, to make a clear understanding of how AI is integrated in English language teaching, the researchers determined three research questions focusing on seeking the students and teachers' views of AI

utilized in English language teaching practices, its benefits and drawbacks, and its impact on the four language skills. These research questions are expected to reveal the holistic descriptions of how AI is integrated in English language teaching.

Step 2. Conduct a Comprehensive Search of the Literature

In the second step, the researchers conducted literature search by browsing a number of articles from several journal databases including Taylor & Francis, Wiley Online Library, Science Direct, ProQuest, and Emerald. During the literature search, the researchers applied some exclusion and inclusion criteria as presented in table 1. Those criterial help the researchers to navigate the eligibility and quality of the studies being examined. This literature search focused on recent research-based articles published from 2022 onwards by Scopus-indexed journals to ensure their quality.

Table 1. The Exclusion and Inclusion Criteria for Literature Search

Exclusion criteria	Inclusion criteria
• Book reviews, book chapters, literature review-based articles, and unpublished theses were excluded. • Quantitative studies were excluded. • Articles published before 2022 were excluded. • Non-Scopus indexed articles were excluded.	• Involving EFL/ESL students, teachers, and documents as the research subjects/participants. • Research-based articles using primary data. • Using qualitative or mixed-methods. However, only qualitative data were analyzed from the mixed-method studies. • Written in English. • Published in a peer-reviewed journal between 2022 and 2024 • Indexed in Scopus

As the process of searching literature review has to be systematic, the researchers followed several stages of the article selection processes (see figure 1). Firstly, the researchers set the keywords for the article exploration. The keywords revolved around artificial intelligence and EFL/ESL students/teachers. Secondly, a total number of 47 articles were gained from reputable journal databases following the inclusion and exclusion criteria. Thirdly, the screening based on the inclusion and exclusion criteria resulted in 16 eligible articles while removing 31 articles. Finally, the 16 eligible articles were decided to be analyzed.

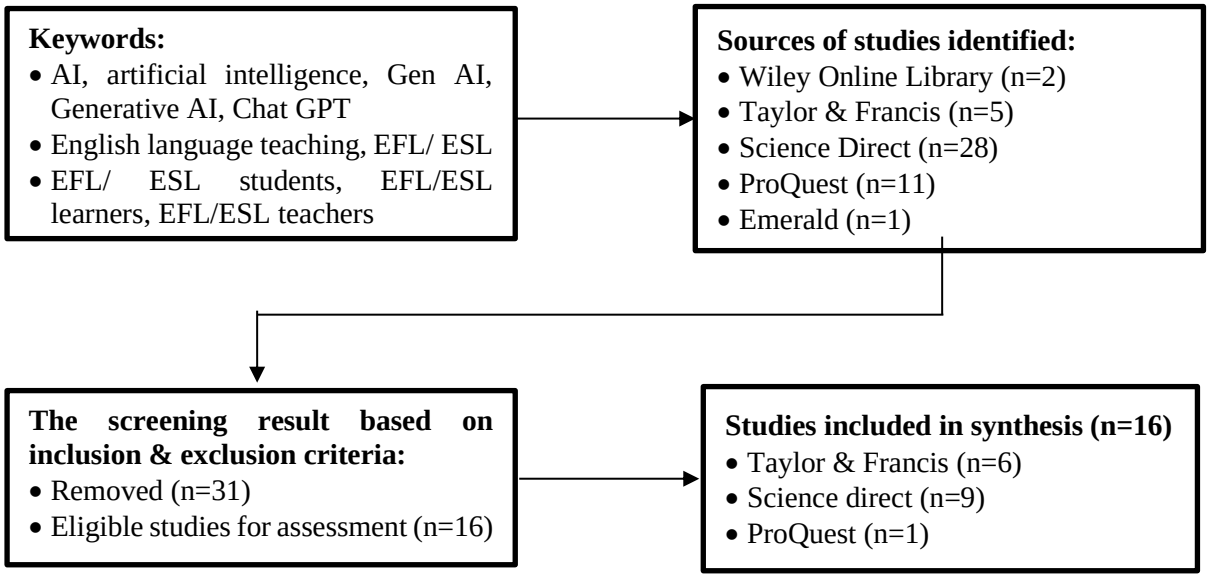

Figure 1. The Stages of Article Selection Processes.

Step 3. Conduct Careful Appraisal of Research Studies for Possible Inclusion

To ensure the quality of the selected articles (n=16), it is required to conduct comprehensive assessment on their quality by checking several components including research objective, methods, participants, data collection and analysis, ethical clearance, and findings. In this case, the researchers conducted quality assessment on the 16 eligible articles based on the Critical Appraisal Skills Programme (CASP) checklist as referred by many systematic literature studies (Cheng et al., 2024; Cin et al., 2022; M. Li, 2024). The assessment was carried out collaboratively by all researchers, and the results were thoroughly discussed to reach a consensus and ensure consistency in judgment. The adapted CASP checklist along with the result of the assessment is presented in table 2. The quality score of the checklist ranges from 1 to 3 representing yes (3), partially (2), and unclear (1). All of the articles gained at least 25 out of 30 (i.e., the maximum score) demonstrating strong adherence to the CASP criteria. This indicates that those articles consist of high-quality of research design, rigorous data analysis, relevant research questions/objectives, and adequate data validity and reliability.

Table 2. The Quality Assessment on the 16 Eligible Articles based on CASP Checklist.

No.	Author(s) and Year	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	How valuable is the research?	Quality score
1.	Gökhan Hınız (2024)	3	3	3	3	3	2	3	3	3	3	29
2.	Xi Zhang, Jing Sun & Yiting Deng (2023)	2	2	3	2	3	2	2	3	3	3	25
3.	Nagaletchimee Annamalai (2024)	3	3	3	2	3	2	1	3	3	3	26
4.	Hui-Chin Yeh (2024)	3	2	2	2	3	2	3	3	3	3	26
5.	Mark Bedoya Ulla, William F. Perales & Stephenie Ong Busbus (2023)	3	3	3	2	3	2	1	3	3	3	26
6.	Shen, Y., & Guo, H. (2024).	3	3	3	2	3	2	1	3	3	3	26
7.	Yang, L., & Zhao, S. (2024)	2	2	3	3	3	2	1	3	3	3	25
8.	Moorhouse, B. L. (2024).	3	3	3	3	3	2	3	3	3	3	29
9.	Al-khresheh, M. H. (2024).	3	3	3	2	3	2	3	3	3	3	28
10.	Liu, Y., & Chang, P. (2024).	2	2	3	3	3	2	1	3	3	3	25
11.	Kohnke, L., Moorhouse, B. L., & Zou, D. (2023).	3	3	3	3	3	2	1	3	3	3	27
12.	Tafazoli, D. (2024)	3	3	3	3	3	2	1	3	3	3	27
13.	Mizumoto, A., & Eguchi, M. (2023).	3	2	3	3	3	2	1	3	3	3	26
14.	Dai, K., & Liu, Q. (2024).	3	3	3	3	3	2	3	3	3	3	29

15.	Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati, I. (2023).	3	3	3	3	3	2	2	3	3	3	28
16.	Du, J., & Alm, A. (2024).	2	2	3	3	3	2	3	3	3	3	27

Furthermore, the characteristics of the articles analyzed in this study (n=16), as presented in appendix, include authors' name, years of publication, research methods, participants, and findings. The titles notify the focus area of the study while the authors' name and years of publication reflect on the information related to the authors' credibility and attribution as well as the timeframe of the studies. The aim, method, and participants sections highlight the objectives of the various studies, detailing how and from whom information was collected. Lastly, findings provide the report of the valuable results of every study which are used as the main data analyzed in this study.

Step 4. Select and Conduct Meta Synthesis Techniques to Integrate and Analyze Qualitative Research Findings

In conducting the meta-synthesis over the 16 eligible articles, the researchers applied coding (i.e., open, axial, selective) mainly for the results/findings section of the studies. Principally, this is relevant to what has been described a number of scholars (Campbell, 2016; Sandelowski & Barroso, 2003; Tong et al., 2008) on the techniques used in meta-synthesis in which the researchers extracted data from the selected studies, particularly the key concepts, themes, and metaphors reported in the findings section (Erwin et al., 2011). In detail, firstly, in the open coding, the researchers read all of the findings from the selected studies and highlighting as well as categorizing some important statements relevant to the research questions of this study. Secondly, in the axial coding, the researchers connected the highlighted statements to be group into clearer classification. This leads to the emergence of themes. Finally, in the selective coding, the researchers constructed key emerging themes and interpret them by relating to the existing theories and previous studies.

Step 5. Present Synthesis of Findings Across Studies

The synthesis of findings across studies provides key insights on the basis of the comparison of findings among the selected studies. This contributes to answer the research questions posed in this study. Additionally, the emerging themes resulted from the synthesis of findings stimulate interpretative and critical discussion contributing to the comprehensive review of AI integration in English language teaching. The synthesis of findings across studies is delivered in findings and discussion section.

Step 6. Reflect on the Process

The last step of the procedure of this meta-synthesis study is conducting reflection on the whole process of the research. This involves the process of identifying and cross-checking some key aspects of this research such as research questions, data collection, data analysis, and interpretation making the researchers recognizing some areas needed to improve. Additionally, through the reflection process, the researchers can transparently report the limitation of this study while suggesting its refinement in the further research.

Findings and Discussion

This section presents the result of meta-synthesis in the form of emerging themes and their descriptions. The emerging themes are categorized based on their similarity and the alignment with the aforementioned research questions. Additionally, this section ends with the elaboration on the potential research area for further studies and limitation of the study.

Students and Teachers' Views on AI Integration in ELT

In terms of the perceptions on AI integration in ELT, a number of students and teachers had different perspectives expressing both positive and negative views on the use of AI in teaching and learning practices. These are summarized in table 4 which categorizes the emerging themes from the data. As shown in the table, students' perspectives consist of two themes: a sense of companionship and reduced human interaction while teachers' views are centred around positive attitudes, positive emotions, negative emotions, and the influence of personal experiences and familiarity.

Table 3. Students and Teachers' Views on the Integration of AI in ELT

Students	Teachers
A sense of companionship	Positive attitudes
Reduced human interaction	Positive emotions
	Negative emotions
	Personal experiences and familiarity

As indicated in table 3, students felt that using AI-based tools may result in a sense of companionship in which they were getting benefits from AI-based tools in the form of timely feedback and real-life interaction (i.e., just like chatting with a real person) (Du & Alm, 2024). This is relevant to what has been reported by several studies that AI tools, particularly working based on natural language processing (NLP) such Chat GPT, Gemini, and other chatbots allow language learners to have real-conversation practices both in written and oral form (Duong & Suppasetseree, 2024; Fathi et al., 2024; Jeon, 2024). Moreover, the ability of AI-based tools to provide learning instant feedback and lively interaction supports self-regulated learning (Pan et al., 2024) allowing students to identify learning resources, navigate appropriate learning strategies, and monitor their own learning progress (Guan et al., 2024). However, at the same time, students admitted that AI is potentially reducing human interaction (Du & Alm, 2024) as they focused more on interacting with AI tools than with their teachers. Also, the individualized learning characterized by AI may result in the lack of emotional learning and potentially limiting even replacing the role of teachers (Altinay et al., 2024) though another study has been reported a framework for maintaining the role of teacher amidst the integration of AI in teaching and learning practices (Kim, 2024).

Meanwhile, as shown in table 3, the findings reveal that teachers have both positive and negative views. It was reported that frequently teachers experienced positive emotions in the form of enjoyment, excitement, and motivation to teaching (Shen & Guo, 2024). They enjoyed using AI for teaching due to its ability helping them identify students' learning needs and provide valuable feedback to students. In addition, teachers were excited with the ability of AI for serving new and innovative ways of teaching. As they enjoyed and excited with the several advantages offered by AI, this led to higher motivation in teaching using AI. These

positive emotions were supported by teachers' positive attitudes towards AI as reported in a similar study (Ulla et al., 2023). In that study, teachers were confirming that Chat GPT helped them in developing lesson plans, specifically for teaching how to write sentences as well as construct sentence structure. Truly, this is very beneficial for teachers as their burden on administrative task was getting reduced (Ahmad et al., 2022). In addition, teachers' positive views on AI might be affected by their personal experiences and familiarity with the use of some of AI-based tools such as Siri, Google Assistant, and Netflix. (Kohnke et al., 2023). However, in contrast to these positive perceptions, some other teachers reported their negative feelings on AI including anxiety, stress, worry, and frustration (Shen & Guo, 2024). In this case, teachers occasionally felt anxious about the potential of misleading information generated by AI, faced stressful due to the demand of additional preparation and erroneous when using AI, worried about the reduction of basic skills due to overreliance on AI, and got frustrated when unable to solve students' problems with AI use.

In conclusion, both students and teachers held mixed views on AI integration in ELT. While they recognized its benefits for learning and teaching efficiency, concerns were raised about reduced human interaction, emotional disconnection, and technical challenges. These contrasting views underscore the need for thoughtful, balanced AI implementation in education.

The Benefits and Drawbacks of AI for ELT

Abundant qualitative data were gained from the 16 eligible articles resulting in various key emerging themes of the benefits and drawbacks of AI for ELT. Basically, the benefits of AI are categorized into four domains namely learning resources, learning process, teachers, and students as shown in table 4.

Table 4. The key emerging themes of AI benefits for ELT

Domains of AI Benefits			
Learning Resources	**Learning Process**	**Teachers**	**Students**
• Diverse and up-to-date learning materials • Enriching learning resources • Interactive and adaptive learning materials • Assisting lesson and learning activity preparation	• Inclusiveness and equity • Dynamic and student-centred learning • Supporting compelling lessons • Personalized and dynamic learning • Interactive learning atmosphere • Facilitating learning process	• Bridging digital divide • Digital literacy empowerment • Overcome longstanding challenges • Automated scoring system (AES)	• Boosting confidence and communication ability • Fostering critical thinking • Promoting intellectual freedom and open-mindedness • Timely and immediate feedback • Personalized feedback • Promoting students' engagement • Raising students' interest

	• Enhancing motivation • Encouraging self-directed learning • Enhancing students' self-confidence

As presented in table 4, AI-based tools are beneficial for the first domain, learning resources into four ways. AI chatbots were able to assist ELT teachers to create diverse and up-to-date learning materials adjusted with students' learning needs and interests (Hınız, 2024; Tafazoli, 2024), for example, the use of Chat GPT for generating reading texts based on students' topic preferences and their language proficiency levels. Correspondingly, from the students' side, AI might help them access a large variety of learning materials tailored with their own personal needs and interests. Next, according to the thematic analysis, AI technology enabled educators to create dynamic and student-centred learning experiences by enabling them to create interactive and adaptive teaching resources, such as picture books and karaoke activities (Yeh, 2024b). Likewise, AI-based tool, like Chat GPT is very useful for teachers to create lesson plans and answer questions/exercises quickly (Ulla et al., 2023).

The second domain, learning process is characterized by the interactive and innovative of learning offered by AI. In one of the examined studies, a participant mentioned a number of benefits of utilizing AI chatbots to promote inclusive and equity in language education (Hınız, 2024). For example, according to the participant, AI chatbots might help students with dyslexia to create or adapt materials based on their specific needs. Next, in the effort of reforming better language education, AI technology supports dynamic, student-centred, and compelling lessons (Yeh, 2024b). For example, in the case of Ms. Lin as described in Yeh's study (2024b), through the assistance of AI, the teacher was able to create lyric adaptation for serving more interactive, adaptive, and personalized listening materials for her students. Correspondingly, another study also reported that Chat GPT offered more dynamic learning through its real-time and personalized feedback (Al-khresheh, 2024a) leading to interactive learning atmosphere (Dai & Liu, 2024). All in all, AI has the potential to serve as a facilitator in language classes simplifying the learning process for learners (Dai & Liu, 2024).

The third domain is AI benefits for ELT teachers. Though AI looks like a very complex technology, generally it provides a user-friendly platform that eliminates the need for sophisticated digital literacy or high-tech equipment, thereby addressing the problem of technical barriers. In contrast to certain educational technologies that need substantial technical knowledge or specific hardware, AI is accessible on a variety of devices, including desktop computers, tablets, and smartphones, using regular web browsers. ELT teachers with different degrees of digital literacy can also use GenAI because to its user-friendly interface and guided tutorials (Tafazoli, 2024). Furthermore, the user-friendly of AI interface might enhance ELT teachers' confidence to integrate AI tools in their language classes (Tafazoli, 2024). Next, overcome longstanding challenges relates to the AI's role in mediating teachers within restricted communication due to

different cultural perspectives and linguistic varieties (Tafazoli, 2024). For example, Chat GPT can provide example of authentic conversational dialogues involving diverse cultural backgrounds (Peachey, 2023; Yeh, 2024a). Last but not least, AI offers assistance for evaluating learning progress. For example, Chat GPT could be utilized as an automatic writing evaluation (AWE) for helping teachers assess students' essays (Mizumoto & Eguchi, 2023).

Students become the last domain of AI benefits for ELT. Compared to the other domains, students have the highest number of benefits. AI technology helps language learners improve their confidence (Annamalai, 2024). For example, when using Chat GPT for asking questions and receiving feedback, students did not feel worried about making mistakes leading to the existence of non-judgemental learning environment. Likewise, Chat GPT can be employed as students' assistance to evaluate every learning material instead of relying solely on general textbooks. This leads to the enactment of critical thinking and the promotion of intellectual freedom (i.e., the right to explore and express ideas freely) as well as open-mindedness (Tafazoli, 2024). Furthermore, the ability of AI to quickly process data allows students to get timely, immediate, and personalized feedback (Dai & Liu, 2024; Du & Alm, 2024). For example, Chat GPT can check students' works and instantly give feedback on every student work tailored with his/her own needs. In terms of supporting dynamic learning experience, AI technology is expected to promote students engagement, raise students' interest, enhance learners' motivation, enhance self-directed learning, and enhance self-confidence (Dai & Liu, 2024). In this case, the ability of AI technology to provide intriguing learning activities leads to the students' higher engagement, interest, and motivation. With the aid of AI technologies language learners can manage their own learning to foster their autonomy as well as make them more confidence in learning English.

Meanwhile, there are three domains impacted by the drawbacks of AI namely institutions, teachers, and students as shown in table 5. Firstly, access to the appropriate technology is necessary for the application of AI-based instruction, yet not all educational institutions may have this availability. Thus, this might result in a digital divide where some students have access to resources for advanced study while others do not (X. Zhang et al., 2023). The diverse quality of AI-based tools also impacts educational institution when implementing AI-based instruction. Poorly designed AI-based tools might result in irrelevant feedback leading to ineffective AI usage to support teaching and learning process (Alsanousi et al., 2023; X. Zhang et al., 2023). Furthermore, the application of AI necessitates sufficient technological support, which raises the educational cost and affects educational institutions' financial plan (Dai & Liu, 2024).

Table 5. The key emerging themes of AI drawbacks for ELT

Domains of AI Drawbacks		
Institutions	**Teachers**	**Students**
• Appropriate access to technology • Quality of AI tools • Enhancing the educational costs	• Highly careful monitoring and evaluation • Increasing the chance of cheating	• Negative effect on cognitive skills (critical thinking and creativity) • Overreliance on AI technology • Ethical concerns

	• Biased contents • Dependability • Trustworthiness • Linguistic fidelity • Violating students' privacy • Reducing students' attention spans

Secondly, teachers gain drawbacks of AI in terms of having greater burden such as the demand of highly careful monitoring and evaluation on students' learning progress (Annamalai, 2024) as some learners might use AI for cheating and other misconducts (Dai & Liu, 2024). While the possibility of cheating is undeniably and always happening, even in non AI-based instruction, educational institutions need to eventually developing guidelines for ethical use of AI and procedure for detecting plagiarized/AI-generated contents (Cotton et al., 2024).

Lastly, just like the previous sub-section, students become the domain receiving the highest number of AI drawbacks. Some language educations worried about the possibility of AI for harming students cognitive abilities such as critical thinking and creativity as those skills were easily taken over by AI (Hınız, 2024) though another study confirmed the other way around (Tafazoli, 2024). This situation is getting worse, particularly when students are over relying on AI which also leads to personal interaction reduction between students and teachers (X. Zhang et al., 2023). Next, a number of ethical concern are brought up by the use of AI in education, including bias contents, data security, and privacy (Annamalai, 2024; X. Zhang et al., 2023). Furthermore, bias contents generated by AI may lead to the issue of dependability and trustworthiness (Ulla et al., 2023) in which language learners are expected not to instantly trust AI-generated contents, yet they still need to be evaluated. Finally, when using AI students need to be aware of keeping their personal data privacy and the possibility of learning attention reduction due to being distracted by AI features (Dai & Liu, 2024).

Impact of AI on Language Skill Development

In language teaching, the vital role of AI is its ability to improve the four language skills namely listening, speaking, reading, and writing. Table 6 demonstrates the key emerging themes about the roles of AI in improving the four language skills.

Table 6. The role of AI in improving listening, speaking, reading, and writing skills

Language skills	AI Tools	AI roles
Listening	• Moises.ai • ChatGPT • Vocalremover.org	• Automatic transcription • Song creation for listening and pronunciation practice
Speaking	• Bing Chat's Voice • ChatGPT (text-based conversation)	• Meaningful dialogue generation
Reading	• ChatGPT	• Reading text generation • The creation of exercises.

Writing	• ChatGPT • Quillbot, • WordTune, • Jenni, • Paperpal, • Copy.ai • Essay Writer	• Engaging reading activities • Content improvement • Writing mechanics improvement

A number of AI-based tools have been designed specifically for a certain purpose and some of them are relevant to be used for language skill development. For example, in improving students' accuracy catching the meaning of listening audios, AI transcription services such as Assembly.ai was utilized to automatically displaying the subtitles of listening audio and video (Yeh, 2024b). Also, the automatic and precise transcription of the listening audio and video may reduce teachers' burden and time allocated for learning material preparation (Yeh, 2024b). Another variation of the listening activity mediated by AI was the employment of Moises.ai to craft karaoke-style song for rehearsing students' listening skill and pronunciation (Yeh, 2024b). When listening to the karaoke-style song, the students needed to clearly listen and follow every part of the lyric as well as get ready for saying aloud some other parts of the lyric. This strategy aligns with a study reporting the benefits of transcription for supporting the enhancement of listening skill (Danan, 2016).

In speaking class, Chat GPT could be used as a tool for generating meaningful dialogues with various topics and genres (Hınız, 2024). Using these dialogues, students can easily practice speaking without waiting for long to prepare or search conversational scripts. However, teachers need to ensure the validity of the dialogues generated by Chat GPT. A startling findings of the study conducted by Hınız (2024) was the limited use of AI for having real-practice of oral conversation due to the unavailability of voice generation for some AI-based tools. Despite this fact, some other recent studies have been reporting the capability of AI chatbot for responding students' speaking practice orally (J. Zhang, 2025; Zhou et al., 2025).

Meanwhile, to improve reading, as one of the AI-based tools, Chat GPT could be used for generating reading materials adjusting with students' needs such as the difficulty level of the texts, numerous topics, graded reading, and various types of reading exercises (Hınız, 2024). Additionally, Chat GPT allowed students to check vocabulary, simplify complex sentence, and summarize reading passages making reading experiences more engaging and relevant (Hınız, 2024). However, a notable limitation is that ChatGPT may occasionally produce inaccurate or misleading information, particularly when generating factual content, which could lead to misunderstanding or the reinforcement of incorrect knowledge among learners (Lin & Chen, 2024). Furthermore, the absence of human judgment in content generation may result in texts that lack cultural appropriateness or pedagogical alignment with curriculum goals. Additionally, overreliance on AI tools like ChatGPT can potentially diminish students' critical thinking skills and reduce their engagement in active learning processes (Murtiningsih et al., 2024)

Lastly, for writing practices, a number of AI-based tools such as Quilbot, WordTune, Jenni, Chat GPT, Paperpal, Copy.ai, and Essay Writer were admitted to be beneficial for supporting the development of students' writing skills (Marzuki et al., 2023). The key aspects of writing that can be assisted by AI-based writing tools include idea generation, vocabulary and language use, coherence and logical flow, and use of transition words and phrases (Marzuki et al., 2023). As AI has been booming together with the emergence of Chat GPT, a type of AI working based on natural language processing (NLP) (Lechien, 2024), many ELT scholars explored the impact of Chat GPT on the development of writing skills (Barrot, 2023; García, 2024; Lingard, 2023; Mahapatra, 2024; Polakova & Ivenz, 2024; Teng, 2024; Werdiningsih et al., 2024) due the suitability between NLP characteristics and writing aspects (i.e., grammar and syntax checking, vocabulary enhancement, language style, and text organization).

Conclusion

This meta-synthesis study aims at examining qualitative data from several eligible articles focusing on the integration of AI in ELT. The meta-synthesis analysis reveals three themes namely student and teachers' views of AI integration in ELT, the benefits and drawbacks of AI integration in ELT, and AI's roles to improve four language skills. Specifically, the views are categorized into two, either positive or negative while the benefits and drawbacks of AI are classified into several domains including learning resources, learning process, students, teachers, and institutions. Then, AI is relatively beneficial for improving all language skills where writing becomes the most frequent skill explored in many studies. Correspondingly, this study highly recommends further research to explore more about AI's role on language skills other than writing. Additionally, the inconsistency findings on the impact of AI on critical thinking and creativity (i.e., either positive or negative) lead to the need of more in-depth and thorough, experiment-based investigation. Future studies should also integrate AI into well-structured instructional approaches to ensure that the implementation of AI tools aligns with pedagogical goals and improve learning effectiveness. More importantly, AI literacy for language teachers also becomes an interesting issue to be explored while institutional policies should therefore prioritize training and support for educators to effectively integrate AI tools, ensuring that both teachers and learners can maximize the benefits of AI in language education and mitigate its drawbacks.

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