

# The Impact of Popular Artificial Intelligence Tools on English Language Teaching and Learning: A Systematic Literature Review (2021-2025)

Law Cheh Pau<sup>1,2</sup>, Melor Md Yunus<sup>1</sup>, Colin Wong Wei Lun<sup>1</sup>

<sup>1</sup>Faculty of Education, Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia.

<sup>2</sup>Sekolah Menengah Sains Muzaffar Syah, Melaka

DOI: <https://doi.org/10.47772/IJRISS.2025.91200296>

Received: 27 December 2025; Accepted: 02 January 2026; Published: 16 January 2026

## ABSTRACT

Artificial Intelligence (AI) has rapidly revolutionized English language education, delivering personalized feedback, adaptive curricula, and conversational practice. Yet evidence for its pedagogical value remains fragmented. This systematic literature review (SLR) synthesizes empirical studies published between 2021 and 2025 to map popular AI tools and evaluate their impact on English language teaching and learning. Guided by PRISMA, searches of WoS, Scopus and ERIC databases retrieved 430 records; after duplicate removal and rigorous screening, 39 peer-reviewed studies were appraised. Studies included higher education, teacher training, and mixed-ability K–12 classrooms across 21 countries and utilized a range of research methodologies. Five tool categories dominate current practice: large-language-model chatbots (e.g., ChatGPT), AI-assisted writing correctors (Grammarly, QuillBot), adaptive mobile apps (Duolingo, Babbel), pronunciation analyzers (Speech Ace), and multimodal translators. Evidence converges on moderate-to-large gains in writing accuracy, vocabulary retention, pronunciation intelligibility and learner motivation, alongside reduced teacher administrative load. Benefits, however, depend on several factors such as digital access, teacher training, and learners' critical engagement. Research gaps include the lack of longitudinal or experimental designs, limited focus on K–12 or low-resource contexts, and insufficient examination of ethical and data-privacy issues. The review adds an integrative evidence base, identifies gaps, and suggests a research agenda that focuses on rigorous efficacy studies combined with equity-focused implementation and ethical governance. There are promising aspects of AI tools in the domain of English language education. But unlocking this potential will require localized integration, educator education, and ongoing study of long-term learning impacts. This SLR offers a category of relevant tools and evidence-based guidance for responsible classroom application universally, enabling implementation.

**Keywords:** Artificial Intelligence, English as a Second Language, English as a Foreign Language, Artificial Intelligence in Education, Teaching and Learning

## INTRODUCTION

English has become an international language for trade, science and diplomacy; therefore, people from different backgrounds need to be skilled in speaking and writing English (Al-Smadi et al., 2024). One estimate is that more than 2 billion people are currently learning (Rich, 2021) or have learned English and count as L2 speakers worldwide (Davoodi, 2024), driven in part by globalization's need for effective communication within academia and the workplace (Gautam, 2022). Mastery—A range of speaking, listening, reading and writing skills as well as grammar, vocabulary and pronunciation is developed (Sengkey 2022).

Recent developments of AI have changed the way in which we access information and communicate, such as Generative AI (Olney et al., 2024), which generates original works by learning from human-authored data. Central advances like deep learning and neural networks have enabled advanced functionalities in natural language processing, speech recognition, and machine translation (Mirzoyeva et al., 2024). AI's rapid development has led to on the integration of AI in education, and English language learning is among the main beneficiaries (Alruwaili & Kianfar, 2025; Al-Smadi et al., 2024).

AI-enabled tools provide personalised learning featuring individual feedback, allow students to learn at their desired pace, lessen teachers' workloads, and encourage student autonomy (Yong, 2020; Liang et al., 2021). Furthermore, in order to maintain the motivation of learners, language software such as Duolingo and Rosetta Stone also offer modules based on AI, gamification and real-time evaluations (Wei, 2023). These facilities also assist in the repetition of tasks such as monitoring attendance in the classroom or in grasping pronunciation and catering for different learning styles (Al-Smadi et al., 2024). Yet embedding AI into language instruction has implications for pedagogical efficacy, ethical implications and equitable access (Crompton et al., 2024).

While AI tools have proliferated in ELT, their benefits are inconclusive and promising evidence are scarce (Sharadgah & Sa'di, 2022). While there is a growing body of studies with promising results in the form of enhanced writing accuracy and more engaged learners, the variety of tools, contexts, and methods makes it hard to draw generalisable conclusions (Crompton et al., 2024). This inconsistency makes it challenging for educators, policy makers, and researchers to make judgments about which AI interventions work the best in given educational environments.

While literature on the applications of AI across domains has recently been reviewed in depth, a gap in systematic evidence for the field of English Language Teaching and Learning (ELT/L) can be observed. Most studies are isolated case reports or exploratory in nature, with limited use of longitudinal or experimental designs. There are similarly less aggregation and synthesis around what the most popular AI tools are, how they are implemented in practical classrooms as well as what particular learning outcomes they have effect on (Sharadgah & Sa'di, 2022). In addition, there has been limited discussion toward the issues of equity, ethics and implementation in low resource or K–12 education environments (Crompton et al., 2024; Daud et al., 2025).

With the emphasis on international English language competence and the increasing penetration of AI into classrooms, a systematic review was needed to understand what we know and bring evidence together to inform future innovation. There is an urgent call for a dependable framework to judge what AI tools work in some way that is meaningful, and in what context. This review is, therefore, convened to offer some form of clarity in a rapidly changing field and advance evidence-based decision making as well as responsible, fair, and effective integration of AI in EFL teaching.

A systematic review in English language learning is, therefore, timely, owing to the influx of AI applications specifically designed for this purpose (Sharadgah & Sa'di, 2022). The purpose of this review is to investigate two research issues:

- (1) What are the popular AI tools used and their specific applications in ELT/L between 2021 and 2025?
- (2) What are the impacts of utilising various AI tools on learner's outcome in ELT/L?

Through the review of studies published in English during this period, we aim to map current trends, describe good practices and locate some gaps that demand further research. The results contribute to the standing both in classroom and research considering AI is able to transform ELT/L.

## LITERATURE REVIEW

### English Language Teaching and Learning (ELT/L)

Historically, ELT has evolved through several key phases, starting with the grammar-translation method in the 19th century, which focused on translating sentences and memorizing grammar rules (Vaishnav, 2024). While this method was outstanding in teaching reading and writing, it did not offer communicative skills which play an essential role in the meaningful conversation at everyday life. As the need for proficiency in speaking the English language is increasing, communicative language teaching (CLT), which prioritized interaction and real-life communication emerged in 1970s (Meniado, 2023). The adoption of CLT launched an effort where various meaningful use of language and its natural functions during everyday life were taken into account (Radosavlevikj, 2021).

In more recent years, the focus has expanded further to incorporate the use of technology in language learning (Dugošija, 2024; Maghamil & Sieras, 2024). Services of tools are provided through the use of digital tools that include software, mobile applications, and online content for language learning advancement by technology-enhanced language learning (TELL) (Pang et al., 2024). The advent of the internet and educational technology has remodelled ELT, where the students can now interact with language learning resources at their convenience, anywhere they may be and using whatever device they have (Chan & Lo, 2024; Ibrahimi et al., 2023). For example, students can engage now in online language courses, form online language-exchange partnerships, take advantage of apps such as those by Duolingo, Babbel, and Memrise, and so on. With those platforms, the learners can modify the speed of their English practicing according to their needs thus increasing the motivation and engagement. (Hidayati et al., 2023; Pérez-Jorge et al., 2025)

Another significant shift in ELT has been the recognition of English as a global language. (Sim & Ismail, 2023). English is taught in different ways over the world as a first and a second language/foreign language. Teaching English to foreign learners in a native English-speaking country is called English as second language (ESL) and in a native non-English-speaking country it is English as foreign language (EFL) (Zhang & Hasim, 2023). The English learning is content-based, hence it is the way that we have to use for teaching. EFL generally apply a more structured natural grammar and vocabulary approach (Crompton et al., 2024; Ulfah et al., 2021), while ESL emphasises immersion and oral communication (Crompton et al., 2024).

### **Artificial Intelligence in Education (AIEd)**

AIEd has rapidly become a disruptive force in the educational landscape and learning ecosystems with the integration of AI technologies within educational fields to enhance learning processes, while disrupting traditional education (Lai et al., 2023). This has generated significant studies on the applications and impact of AI tools across a variety of educational contexts with a focus on ELT (Crompton et al., 2024; Zou et al., 2025).

Several systematic literature reviews have examined the prevalence of AI within ELT as it has evolved substantially since 2017 (Crompton et al., 2024). One of the earliest large-scale systematic reviews of AI in English language teaching/learning was conducted by the British Council which reviewed 43 studies published between 2014 and 2023 across all learner levels (Crompton et al., 2024). The study has provided a first of its kind insight that AI is being used mostly in five categories of speaking skills, writing, reading comprehension, pedagogical and self-regulation. However, it is interesting to note that listening did not emerge from the data as an area where AI is being significantly applied (Crompton et al., 2024).

Sharadgah and Sa'di (2022) have also carried out another systematic review of AI on the present state of affairs of the AI application in ELT by examining 64 studies throughout 2015- 2021. Their study exhibited favorable results in AI because it is useful for the development of English, translation, assessment, recognition, attitude, and satisfaction (Sharadgah and Sa'di, 2022). A meta-analysis by Xu et al. (2025) including 15 studies with 2,156 participants, further supports these claims, revealing a large positive effect for AI-assisted language learning across various contexts.

Krishnan and Zaini (2023) has examined 15 articles published between 2020 and 2024 in their literature review, focusing on AI-driven tools such as intelligent tutoring systems (ITS), game-based apps, and automated assessment tool. Some honourable AI-driven platforms or tools mentioned were WordTrek, CHEN-slate, Kahoot, Quizizz, and Quizalize. Daud et al. (2025)'s research revealed that AI enhances English teaching primarily through tools like grammar checkers, chatbots, and language learning applications. In addition, writing assistance was the most common application, appearing in 54.55% of studies.

As mentioned above, AI tools have shown promising results in improving various English language skills, including speaking, writing, reading, and vocabulary development (Crompton et al., 2024; Sharadgah & Sa'di, 2022). Research findings from Heathco (2025) reported that ESL learners gained much from AI-based learning platforms over the convention means of skill improvement as Generative AI solutions such as chatbots allow learners to learn languages more effectively as AI provide instantaneous translations, support of pronunciation, and fix grammar errors.

A systematic review of studies by Sahli et al. (2024) on AI's impact on university students' writing skills found that AI timely feedback enhances coherence and cohesion, enhances cognitive engagement through reflection-in-action, immediate decision-making, and responsive action. Koraiishi, 2024 focused on evaluating ChatGPT's reliability in grading IELTS Writing Task 2, revealing its impressive capabilities in understanding and evaluating academic writing. The interactive nature of ChatGPT allows students to debate mistakes, ask for clarification, and receive examples or rewritten essays predicted to improve their IELTS scores (Koraiishi, 2024).

Besides, Chen and Chen (2020) also supported that AI-based ITS could improve students' reading comprehension and vocabulary development over traditional teaching methods due to its individualized learning paths which cater for personal learning styles and differences, promoting the increased fluency and language structure accuracy levels (Crompton et al., 2024). In addition, Davoodi (2024) also highlighted the importance of AI in bilingual education, showing how it can achieve enormous language gaps and provide personalised translations and culturally adapted resources. These developments do not only relate to language learning, but they also involve ideas associated with cultural proximity which is advantageous for ESL learners (Davoodi 2024).

Recent studies suggest that AI is beneficial for speaking, especially pronunciation. Crompton et al (2024) found that pitch-flatness and intonation are traits which can be removed through AI systems that rely on visual pitch displays such as spectrograms to support the improving of children's speech. In addition, AI chatbots (e.g., voice assistants, etc.) have been shown to support conversation and language learning (Crompton et al., 2024). Xu et al. (2025), Google Assistant and ELSA Speak were used as well to develop students' conversational skills. One educator highlighted the use of Google Assistant in helping learners to practice conversation functions in terms of fluency, intonation and pronunciation. These AI-driven communication platforms facilitate authentic dialogues for the students, contributing to the development of oral communication skills (Xu et al., 2025).

Another important use case for education is AI's role in automating administrative duties. AI-mediated assessment tools are identified as an emerging area in reviews spanning adaptive placement tests and automatic scoring. Teachers are spending an awful lot of their precious time grading and administering, but not those companies that utilise AIED such as those using Turnitin and Grade scope. These instruments offer quick, unbiased feedback and analyse several language skills at once. Mabuan (2024) explored how AI-based tools such as ChatGPT could enhance grading and provide rapid feedback for language learners. It means that teachers can use all their energy to provide exciting, differentiated lessons, rather than being caught up in the daily administrative side of the system.

However, along with the benefits, there are some key associated challenges when it comes to the integration of AI in ELT. Crompton et al. (2024) identified few technical barriers consisting of tool breakdown, poor connection and wrong AI. In addition, current limitations of AI systems often differ from the users' expectations with regard to improved performance and natural interaction with humans (Crompton et al., 2024). Also, issues in the usage of AI include academic dishonesty and overreliance on AI tools (Daud et al., 2025). Other issues that may be problematic are classroom management issues and AI-related distractions. Therefore, a cautious and balanced integration will help to eliminate distractions and preserve human engagement (Xu et al., 2025).

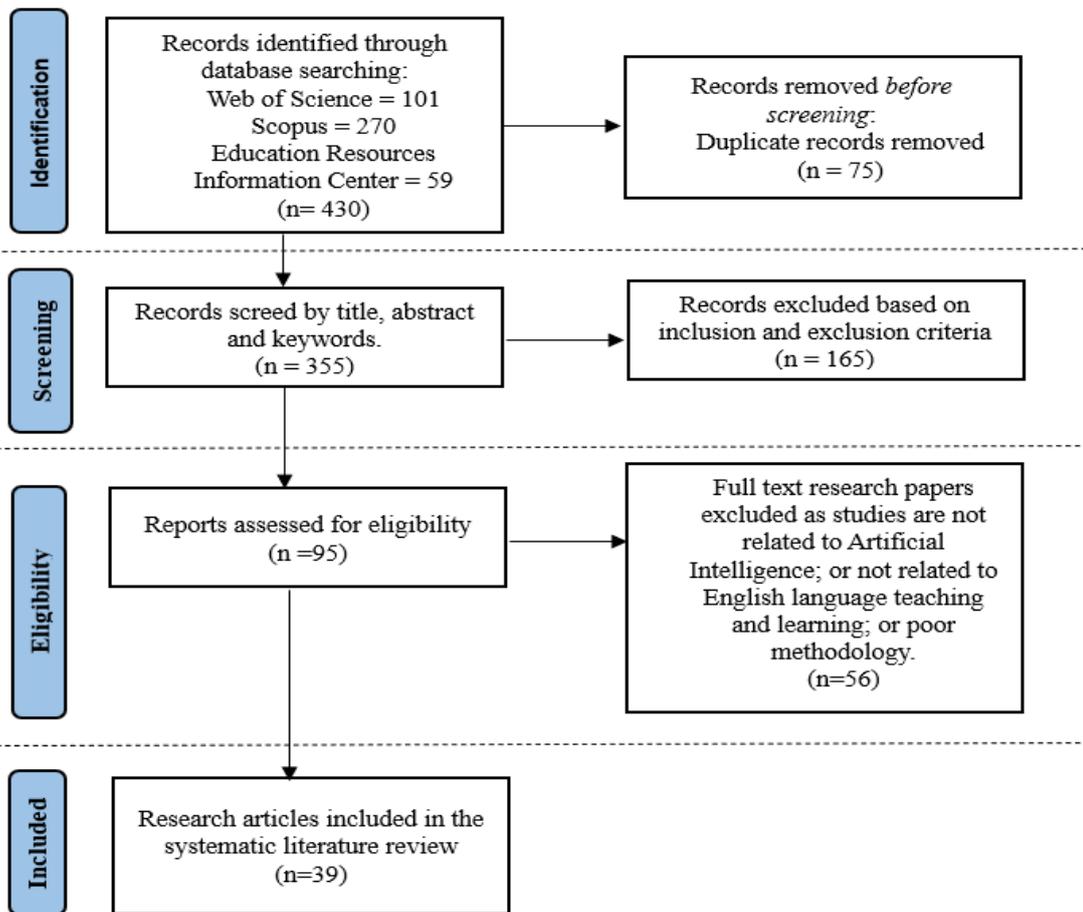
In conclusion, The AIED systems are developed to aid the learning process by increasing the achievement of the student and supporting the teachers through the application of the AI in fulfilling the several needs of the learning process (Lai et al., 2023). Adoption of AI in educational settings is accelerated by its effectiveness at supplying customised learning paths, facilitation of proper administration procedure, instant feedback delivery, all of which improve the overall effectiveness and inclusiveness upon the ordinary educational process (Chan & Tang, 2024; Pang et al., 2024). However, challenges remain regarding technical limitations, ethical considerations, and pedagogical integration (Daud et al., 2025).

## METHODS

As shown in Figure 1, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework was utilised and adapted to report this study. The process was separated into four stages which include identification, screening, eligibility, and inclusion. PRISMA refers to the systematic collection and

synthesis of findings from diverse studies to answer research questions. The following is the procedure for conducting a systematic review.

**Figure 1. Stream Chart of the Research Article Selection Process.**



**Identification**

The initial phase of the systematic review involved the identification process as outlined in the PRISMA guidelines. Three systems were chosen, including Web of Science (WoS), Scopus and the Educational Resources Information Centre (ERIC). The search databases were suitable for the purposes of this review and was selected for its comprehensive compilation of peer-reviewed research in education and applied linguistic, which would guarantee methodological quality and cohesion between included papers. The key terms used for this systematic review were developed to capture the constructs of interest. Terms relating to AI and ELT/L are included. The search string utilised in this study for each database are presented in Table 1.

**Table 1. Keywords Used to Find Related Articles**

Type of database	Search String
WOS	((ALL=("AI")) AND ALL=("ELT")) OR ((ALL=("AI")) AND ALL=("ESL"))
ERIC	("Artificial Intelligence" OR "AI") AND ( "English Language Teaching and Learning" OR "English Language Teaching" OR "English Language Learning" OR "ELT" ) OR ( "English as Second Language" OR "ESL" )
SCOPUS	TITLE-ABS-KEY ( ( "Artificial Intelligence" OR "AI" ) AND ( "English Language Teaching and Learning" OR "English Language Teaching" OR "English Language Learning" OR "ELT" ) OR ( "English as Second Language" OR "ESL" ) ) AND PUBYEAR > 2020 AND PUBYEAR < 2026

## Screening

Following the identification of articles, the screening process takes place, beginning with the exclusion of duplicate articles that appear across multiple databases. Following the initial screening phase, 75 duplicate articles were eliminated, leaving 355 articles that are qualified for additional screening. A total of 355 articles went through screening based on their titles, abstracts, and keywords, with the expectation that they are related to the intersection of artificial intelligence and the teaching and learning of English. Another 260 articles were excluded following screening since they did not fit the criteria of interest for this study. After the exclusion, 95 articles were subjected to screening according to pre-defined inclusion and exclusion criteria described in Table 2.

**Table 2. Inclusion and Exclusion Criteria**

Criteria	Inclusion	Exclusion
Type of Article	Article from Journals	Conference proceedings, Systematic Review, Proceedings, Book Chapters, Report
Language	English	Non-English
Year	2020-2025 (5 years span)	Before the year 2020
Peer Review	Peer-reviewed	Non-Peer-Reviewed
Empirical Data	Has some form of empirical data	No empirical data
Context	Related to Education or linguistic	Not related to education or linguistic

After a comprehensive screening process based on the predefined inclusion and exclusion criteria, 70 studies were retrieved as potentially relevant in this systematic review. The conference proceedings, systematic reviews, book chapters and reports were reviewed but they were not included in the study as they had limited scope.

## Included

The articles included in this systematic review investigated AI in ELT/L. The results presented were recorded on Table 3.

## Data Analysis Procedure

After screening the eligible articles, data of interest in each study were carefully collected. These details included the year of publication, authors and methodology (such as qualitative, quantitative or mixed methods). Critical information concerning AI tools present in each included study (e.g., ChatGPT, Grammarly and Speech Ace) was collected to determine which tools were the most frequently used within a language learning context. Further, the primary aims and questions of the research, which focused on AI applications in teaching English as a second or foreign language were reflected.

This also included recording the results of each study, especially on how AI tools influenced learners' language skills, such as writing, pronunciation listening, and vocabulary. The methodology of each study was examined, including sample size, data collection tools (e.g., surveys, interviews and tests) and analysis methods (e.g., statistical analyses or thematic coding). This organized extraction method guaranteed that key details of each study were well-noted to allow for full comparison among studies in the review analysis. This structured extraction and comparison is consistent with SLR best practices, and facilitates systematic cross-study synthesis, while minimizing researcher interpretational bias.

## FINDINGS

**RQ1:** What are the popular AI tools and their specific applications in English language teaching and learning between 2021 and 2025?

Between 2021 and 2025, various AI tools have gained prominence in ELT/L. Some of the most widely used AI

technologies include ChatGPT, Grammarly, Duolingo, Rosetta Stone, and Speech Ace, each contributing to different aspects of language acquisition. Table 4 is a list of popular AI tools used in ELT/L.

**Table 4. Popular AI Tools Used in Teaching and Learning of English**

Role of AI	AI Tools	Specific Functions	REFERENCES
AI Teaching Tools	ChatGPT, Copilot, Gemini, Bard	Lesson planning, assessment, content generation	Alqaed, 2024; Davoodi, 2024; ElEbyary & Shabara, 2024; Jomaa et al., 2024a; Kusuma et al., 2024; Mabuan, 2024; Mutammimah et al., 2024; Solak, 2024; Van Horn, 2024; Zhou et al., 2024; Alruwaili & Kianfar, 2025; Zakarneh et al., 2025
AI Writing Assistants	ChatGPT, Grammarly, Hemingway Editor, QuillBot, Wordtune, Textio	Grammar, style, and error correction; writing enhancement	N & Kumar N S, 2023; Alqaed, 2024; Aini et al., 2024; Cheung & Shi, 2024; ElEbyary & Shabara, 2024; Mahapatra, 2024; Milton et al., 2024; Jomaa et al., 2024b; Thanh Khoa & Tran, 2024; Tica & Krsmanović, 2024;
Generative AI Tools	ChatGPT, Copilot, Poe Platform, Stable Diffusion, ParagraphAI	Content generation, image creation, professional writing assistance	Alexander et al., 2023; Ulla et al., 2023; Cheung & Shi, 2024; Qu & Wu, 2024; Rahmi et al., 2024; Zhou et al., 2024; Heathco, 2025
Machine Translation	Google Translate, DeepL, ChatGPT, HeyGen	Translation, vocabulary assistance, multilingual support	Allehyani & Algamdi, 2023; N & Kumar N S, 2023; Aini et al., 2024; Cheung & Shi, 2024; Jomaa et al., 2024a; Jomaa et al., 2024b; Heathco, 2025;

AI-Based Language Apps	Duolingo, ELSA, Rosetta Stone, Quizlet, Memrise, Anki, Speechace, Hellotalk	Vocabulary acquisition, speaking and pronunciation improvement, interactive practice	Aini et al., 2024; Jomaa et al., 2024a; Jomaa et al., 2024b; Kusuma et al., 2024; Rahmi et al., 2024; Zakarneh et al., 2025;
AI Virtual Assistants	Google Assistant, Alexa, Siri, PengTalk, Cake, Smalltalk, Zoom-AI Companion	Conversational practice, vocabulary development, automated content summarization	N & N S, 2023; N & Kumar N S, 2023; Aini et al., 2024; Jeon et al., 2024; Thanh Khoa & Tran, 2024 Koraishi & Karatepe, 2025
AI Detection Tools	Turnitin, OpenAI Detector, GPTZero, Crossplag	Detection of AI-generated writing materials	Alexander et al., 2023;
Learner Perception	N/A	Focus on acceptance, challenges, and effectiveness	Lesia Viktorivna et al., 2022; Jamshed et al., 2024
Teacher Perception	N/A	Focus on acceptance, challenges, effectiveness, and perspectives on professional development	Al-Smadi et al., 2024; Chan & Tang, 2024

**ChatGPT:** As the most widely discussed AI tools, ChatGPT is an excellent tool in assisting teachers to in lesson planning, assessment, content generation (Allehyani & Algamdi, 2023; Davoodi, 2024; ElEbyary & Shabara, 2024; Jomaa et al., 2024a; Kusuma et al., 2024; Mabuan, 2024; Mutammimah et al., 2024; Solak, 2024; Van Horn, 2024; Zhou et al., 2024; Alruwaili & Kianfar, 2025; Zakarneh et al., 2025). In addition, it also widely acts as a conversational practice exercise. AI is applied to get students to engage in interaction with an AI powered chatbot which enhances immediate language practice. This tool helps students to develop their speaking and writing competences with immersive conversations, prompt corrections, and valuable advice on improving the language use. Students also receive help from ChatGPT in creating content (Ulla et al., 2023; Cheung & Shi, 2024; Heathco, 2025), which helps students to improve their writing skills by broadening their vocabulary with relevant suggestions (Aini et al., 2024; Alqaed, 2024; Cheung & Shi, 2024; ElEbyary & Shabara, 2024; Mahapatra, 2024; Milton et al., 2024, Jomaa et al., 2024b; Tica & Krsmanović, 2024).

**Grammarly and Quillbot:** Both applications are intelligent device driven by AI that is helpful in developing stronger writing skills effectively. Grammarly and Quillbot provides an autocorrect with instant feedback on grammar, spelling, style, as well as recommendation for improved sentence stitching and clarity (N & Kumar N S, 2023; Aini et al., 2024; Alqaed, 2024). It is an effective tool beside ChatGPT to upgrade academic and professional writing skills of learners from various skill groups.

**Duolingo:** This app is known for its innovative gamified method to learn a new language while it uses AI to offer a personalized course each learner's progress and successes (Aini et al., 2024, Jomaa et al., 2024a; Jomaa et al., 2024b). The app's AI algorithms use spaced repetition to adjust the difficulty of courses, meaning that learners will get an individualised learning experience, enhance their vocabulary retention, and reinforce grammatical rules (Thanh Khoa & Tran, 2024).

**Speech Ace:** Using its AI system, Speech Ace also assesses the English pronunciation of learners providing them with intonation, stress, and overall speaking feedback. Through the use of advanced speech recognition

functions, Speech Ace assesses the pronunciation of students in comparison with native-accent criteria and presents appropriate corrections (Mirzoyeva et al., 2024).

In conclusion, each of these tools plays a vital role in enhancing specific aspects of language acquisition, from writing and pronunciation to vocabulary building and fluency in speaking.

**RQ 2: What are the impacts of utilizing various AI tools on learner’s outcome in ELT/L.**

The implementation of AI tools in language learning has resulted in relevant improvements in outcomes including improved language skills, heightened learner engagement as well as increased motivation. However, the extent to which AI tools do or do not perform well relies on the learners’ needs, the type of the AI technology and the context in which it is being introduced.

**Table 5. Impacts and Challenges of AI Tools in ELT/L.**

Stakeholder	Outcome	Impact	Article
Learners	Learner’s Attitude	Empowers learners by offering flexible and personalized, learning pathways, boosting learners’ autonomy in learning.	Lesia Viktorivna et al., 2022; N & Kumar N S, 2023; Al Algaithi et al., 2024; Alqaed, 2024; Al-Smadi et al., 2024; Chan & Tang, 2024; Davoodi, 2024; Jamshed et al., 2024; Jomaa et al., 2024a; Kusuma et al., 2024; Mabuan, 2024; Mahapatra, 2024; Mirzoyeva et al., 2024; Thanh Khoa & Tran, 2024; Van Horn, 2024
		Increases learners’ engagement and motivation with instant feedback and corrections.	Alsadoon, 2021; N & N S, 2023; Aini et al., 2024; Al-Smadi et al., 2024; Jamshed et al., 2024; Jomaa et al., 2024b; Milton et al., 2024; Mirzoyeva et al., 2024; Qu & Wu, 2024; Rahmi et al., 2024; Zhou et al., 2024; Zakarneh et al., 2025
	Writing Skills	Provides instant writing feedback, enhancing grammatical accuracy.	Wu et al., 2021; Lesia Viktorivna et al., 2022; Alqaed, 2024; Al-Smadi et al., 2024; ElEbyary & Shabara, 2024; Mabuan, 2024; Mahapatra, 2024; Milton et al., 2024; Thanh Khoa & Tran, 2024; Tica & Krsmanović, 2024; Van Horn, 2024;

		Supports content creation, allowing learners to generate ideas more freely.	Alqaed, 2024; Al-Smadi et al., 2024; Mahapatra, 2024; Milton et al., 2024; Mirzoyeva et al., 2024; Rahmi et al., 2024
		Reduces plagiarism by encouraging originality.	Alexander et al., 2023; Jeon et al., 2024
	Speaking and Listening Skills	Provides conversation practice to enhance speaking confidence.	Aini et al., 2024; Bouchhioua, 2024; Jeon et al., 2024; Thanh Khoa & Tran, 2024;
		Refines pronunciation with real-time feedback.	Bouchhioua, 2024; Mirzoyeva et al., 2024; Thanh Khoa & Tran, 2024
		Improves listening comprehension through tailored audio materials.	Bouchhioua, 2024; Mirzoyeva et al., 2024
	Reading and Vocabulary Learning	Bridges language gaps with contextual learning.	Al-Smadi et al., 2024; Jomaa et al., 2024b Qu & Wu, 2024
		Boosts vocabulary retention by adapting lessons to the learner's progress.	Aini et al., 2024; Jomaa et al., 2024a; Thanh Khoa & Tran, 2024
		Strengthens reading comprehension by adjusting difficulty levels.	Lesia Viktorivna et al., 2022; Solak, 2024
Teachers	Improve Efficiency	Automates administrative tasks, reducing teacher workload.	Davoodi, 2024; Mabuan, 2024; Alruwaili & Kianfar, 2025; Koraishi & Karatepe, 2025
		Assists in grading and provides consistent, objective feedback.	Allehyani & Algamdi, 2023; ElEbyary & Shabara, 2024; Lesia Viktorivna et al., 2022; Koraishi & Karatepe, 2025
Challenges for Both	Ethical Considerations and Challenges	Overreliance on AI tools can reduce critical thinking in learners.	Wu et al., 2021; Lesia Viktorivna et al., 2022; Ulla et al., 2023; Alqaed, 2024; Bouchhioua, 2024 Davoodi, 2024; Jomaa et al., 2024b; Mabuan, 2024; Mahapatra, 2024; Milton et al., 2024; Rahmi et al., 2024; Van Horn, 2024 Alruwaili & Kianfar, 2025
		Technological proficiency is essential for effective tool use.	Wu et al., 2021; Allehyani & Algamdi, 2023; Cheung & Shi, 2024; Jamshed et al., 2024; Jomaa et al., 2024a; Mabuan, 2024; Mahapatra, 2024; Rahmi et al., 2024;

		Privacy concerns arise with AI tool usage and personal data collection.	Lesia Viktorivna et al., 2022; Allehyani & Algamdi, 2023; Al-Smadi et al., 2024; Jamshed et al., 2024; Mabuan, 2024; Solak, 2024; Thanh Khoa & Tran, 2024;
		Potential for academic dishonesty, with students using AI to generate content.	Ulla et al., 2023; Alqaed, 2024; Mabuan, 2024; Solak, 2024; Thanh Khoa & Tran, 2024; Alruwaili & Kianfar, 2025
		High costs for premium AI tools limit accessibility in some areas.	N & N S, 2023; N & Kumar N S, 2023; Alqaed, 2024; Jamshed et al., 2024

### Impact on Learners

AI tools have shown a positive impact on language acquisition. Studies have found improvements in students' writing, speaking, and listening skills, as well as an increase in learner motivation and engagement. For example, in terms of the impact on Writing Skills. AI writing tools like Grammarly and Quill Bot help students improve their academic writing by suggesting grammatical corrections and rephrasing sentences (Wu et al., 2021; Lesia Viktorivna et al., 2022; Alqaed, 2024; ElEbyary & Shabara, 2024; Mabuan, 2024; Mahapatra, 2024; Milton et al., 2024; Thanh Khoa & Tran, 2024; Tica & Krsmanović, 2024; Van Horn, 2024). With regards to speaking ability, AI can assist learners in honing their pronunciation where AI-powered pronunciation tools such as Rosetta Stone and Speech Ace supply practice conversations and instant feedback that results in more accurate intonation (N & N S, 2023; Bouchhioua, 2024; Jeon et al., 2024; Mirzoyeva et al., 2024; Thanh Khoa & Tran, 2024). Effects on vocabulary learning is also being reported where AI applications such as Memrise and Duolingo also incorporate spaced repetition algorithms worth learning to assist users with retaining vocabulary in the long term (N & N S, 2023; Jomaa et al., 2024a; Thanh Khoa & Tran, 2024).

### Impact on Teachers

AI tools have many advantages for educators, such as easing the workload of administrative tasks and gaining insights into learners' development (Ulla et al., 2023; Davoodi, 2024; Alruwaili & Kianfar, 2025; Koraishi & Karatepe, 2025). Automatización de la calificación, control y tareas de retroalimentación hacen que los docentes permuten más tiempo dedicado a la enseñanza interactiva y tratamiento individual con los estudiantes. AI tools also permit teachers to keep an eye on the students' progress and notice places in which learners may require more aid (Lesia Viktorivna et al., 2022; Allehyani & Algamdi, 2023; ElEbyary & Shabara, 2024; Koraishi & Karatepe, 2025). Mabuan (2024) reported that teachers in facebook using AI applications like ChatGPT have made helping out students after and before class hours easier. AI tools assist in better and more frequent assessment, which in turn enables teachers to maintain quality feedback even for large classes.

### Challenges for Both

Although there are many advantages, integrating AI applications in ELT creates certain challenges for both students and teachers. One of the main challenges for learners is possible dependence on AI tools, leading to passive learning if they use those tools without critically engaging with content (Wu et al., 2021; Lesia Viktorivna et al., 2022; Ulla et al., 2023; Aini et al., 2024; Alqaed, 2024; Bouchhioua, 2024; Davoodi, 2024; Jomaa et al., 2024b Mabuan, 2024 Mahapatra,24 Milton..Van Horn. Another concern is accessibility, where not all students have high speed internet or modern devices, which are the requisites for many AI tools (N & N S, 2023; N & Kumar N S, 2023; Alqaed, 2024; Jamshed et al., 2024). Teachers often face challenges when it comes to using AI-based tools in their teaching methods. As things stand, professional development is essential for teachers to

effectively harness AI's power and incorporate it into their teaching (Allehyani & Algamdi, 2023; Jomaa et al., 2024a; Mabuan, 2024).

## DISCUSSION

This analysis reconfirms the increasing significance of AI in ELT/L from 2021 through to 2025, with many existing studies highlighting their pedagogical gains. For example, the study of Pang et al. (2024); Alruwaili and Kianfar (2025); Al-Smadi et al. (2024) resonate with our results that AI-powered tools such as ChatGPT, Grammarly, Duolingo significantly improve learners' engagement and performance. In addition, tools like Duolingo, Rosetta Stone, and Speech Ace continue to show strong alignment with earlier claims about AI's adaptive learning capabilities (Mirzoyeva et al., 2024).

### RQ 1

Among the results, there is a greater traction in ELT of many AI tools from 2021 through 2025. Each of the tools concentrates on a separate aspect of language acquisition calling attention to the grammar, pronunciation, vocabulary, and writing. A great number of educators and learners depend on AI tools such as ChatGPT, Grammarly, Duolingo, Rosetta Stone, and Speech Ace (Alexander et al., 2023; Ulla et al., 2023; Aini et al., 2024; Alqaed, 2024; Chan & Tang, 2024; Cheung & Shi, 2024; Davoodi, 2024; ElEbyary & Shabara, 2024; Jomaa et al., 2024a; Jomaa et al., 2024b; Mabuan, 2024; Mahapatra, 2024; Milton et al., 2024; Mirzoyeva et al., 2024; Mutammimah et al., 2024; Qu & Wu, 2024; Solak, 2024; Tica & Krsmanović, 2024; Van Horn, 2024; Thanh Khoa & Tran, 2024; Heathco, 2025; Koraishi & Karatepe, 2025; Zakarneh et al., 2025).

ChatGPT proves to be the most popular source among teachers and learners where learners can improve both spoken and written communication through actual practical work with communicating with an interactive AI. The tool can assist in learning via instant recommendations, feedback, and writing (Aini et al., 2024; Alqaed, 2024; Cheung & Shi, 2024; ElEbyary & Shabara, 2024; Jomaa et al., 2024b; Mahapatra, 2024; Milton et al.,

2024; Tica & Krsmanović, 2024). On top of that, using an established writing help, called Grammarly and Quillbot, learners receive immediate assistance regarding the use of grammar, spelling and syntax, which comes in handy for more effective written communication (N & Kumar N S, 2023; Aini et al., 2024; Alqaed, 2024; Thanh Khoa & Tran, 2024). The frequent usage of ChatGPT, Grammarly and Quillbot further supports Daud et al. (2025)'s findings that writing assistance remained the most common application of AI.

Besides using voice assistants like Alexa to encourage meaningful conversations and language learning or Google Assistant to enhance speaking skills, Duolingo and Rosetta Stone's platforms and application have risen as popular tools that can produce adaptive learning routes that adjust the complexity based on learners' engagement, which increases interest and effectiveness broadly in learning (Bouchhioua, 2024; Mirzoyeva et al., 2024). In combination with these resources, learners can accumulate a more diverse set of language capabilities enjoying adaptive and motivating lessons.

### RQ2

Similarly to the previous report, the impacts of AI tools on learners' outcomes has been overwhelmingly positive, particularly in writing, pronunciation, and vocabulary retention (Crompton et al., 2024; Sharadgah & Sa'di, 2022). Popular AI tools such as ChatGPT, Grammarly, and Quillbot have shown that it is possible to significantly enhance the writing skills of learners through benefits of a real time strategic and valuable feedback for perfecting written expression, which mirror previous reports about its ability to provide writing support, confirming consistent improvement in grammar and vocabulary acquisition (Sharadgah & Sa'di, 2022; N & Kumar N S, 2023; Aini et al., 2024; Alqaed, 2024; Thanh Khoa & Tran, 2024).

It is reported that bespoke programs of Duolingo and Rosetta Stone allow better retention of vocabulary by varying the contents to suit each individual's unique speed at which they learn and the level of proficiency. Research by Thanh Khoa & Tran (2024) specified that Duolingo can improve vocabulary by utilizing spaced repetition algorithms and smart flashcard features. Furthermore, tools like Speech Ace have contributed to more effective pronunciation practice, providing learners with real-time feedback and helping them overcome

pronunciation challenges (Mirzoyeva et al., 2024). Learners have gained from enhanced communication skills in most significant cases where timely response is essential. Furthermore, AI tools increase the learners' motivation and participation because of the use of stimulating games and immediate feedback (Al-Smadi et al.; Solak, 2024)

Notably, listening skills continued to receive less attention in AI applications. Although there is no specific research that solely focuses on using AI to improve listening, research by Mirzoyeva et al. (2024) stated that application like Speech Ace not only offers immediate pronunciation correction and diagnostic feedback to improve learners' speaking skills, learners can also enhance their listening comprehension skills and develop an ear for natural English pronunciation and intonation patterns by repeatedly listening to audio recordings of native speakers' users.

## Benefits

The incorporation of AI into English language training provides various advantages. First, personalized learning stands out as one of the key advantages. AI tools customize lessons for individual students' needs so they can progress according to their pace. The flexibility (which traditional education fails to provide) behind better learning outcomes is associated with the fact that students can re-enter complex areas and get feedback about them in their own time (Al Gaithi et al., 2024; Mahapatra, 2024; Van Horn, 2024; Zakarneh et al., 2025).

The ability to work efficiently and broadly is one of the greatest advantages provided by AI tools (N & Kumar N S, 2023; Ulla et al., 2023; Aini et al., 2024; Davoodi, 2024; Rahmi et al., 2024; Alruwaili & Kianfar, 2025; Koraiishi & Karatepe, 2025). The automation of operations such as grading, monitoring progress and providing feedback eases the teachers' work. This allows the teachers to spend more time on student-centered and diverse instruction finally increasing teaching effectiveness (Ulla et al., 2023; Alqaed, 2024; Heathco, 2025). In addition to that, learners reported that with the use of AI, they can be more efficient by reducing thinking time, making their task easier and faster (Mahapatra, 2024; Mirzoyeva et al., 2024).

AI increases engagement and motivation by turning learning into a "fun process" through gamification (Aini et al., 2024), even specifically for the tools such as Duolingo and Rosetta Stone that provide playful elements (rewards, quests, levels) that can attract the learner in the process of learning (Jomaa et al., 2024a; Jomaa et al., 2024b; Mirzoyeva et al., 2024; Thanh Khoa & Tran, 2024). Besides that, Wu et al., 2021 stated that learners also felt more comfortable and enjoyable when interacting with AI chatbots where they don't need to be afraid of being judged by others, thus making them more eager to learn. However, a study by Tica & Krsmanović, 2024 found no significant correlation between students' motivation to learn English and their use of ChatGPT for writing assignments, suggesting that motivation levels and technology adoption may be independent.

## Challenges

Despite the possibilities of AI tool to largely improve the English language System, there are still significant challenges of implementing it. Accessibility remains a primary concern. Unlike previous studies which underplayed the accessibility challenges, Chan & Tang (2024) and Jomaa et al., (2024a) emphasise the digital divide caused by unequal access to devices and reliable internet, particularly in low-resource settings (Al-Smadi et al., 2024). In addition to that, another reason would be the expensive subscription fees of some AI-driven platforms (N & N S, 2023; N & Kumar N S, 2023; Jamshed et al., 2024; Thanh Khoa & Tran, 2024). However, ElEbyary & Shabara, 2024 did highlight that there are AI-driven platforms frequently offer cost-effective or free alternatives, which helps to ease the financial burden.

Some articles also highlight the rising concerns over learner over-dependence on AI, which were underexplored in past studies. While AI gives an instant response, learner's reliance on such a tool may not sharpen them in the required critical thinking and problem-solving skill in learning language (Ulla et al., 2023; Alqaed, 2024; Chan & Tang, 2024; Mabuan, 2024; Alruwaili & Kianfar, 2025). Therefore, some articles recommend using AI in moderation, having human guidance, and establishing related guidelines and standard which needs to be further discussed in future research (Ulla et al., 2023; Alqaed, 2024; Chan & Tang, 2024; Jomaa et al., 2024b; Milton et al., 2024;).

Although AI supports teacher professional development by offering new pedagogical approaches and resources, some articles highlight the fact that teachers need sufficient training and resources to effectively integrate AI into their teaching practices. A portion of teachers may lack the knowledge necessary to effectively utilise AI tools or to integrate them into their teaching environments (Chan & Tang, 2024; Davoodi, 2024; Jomaa et al., 2024a). Because of a lack of understanding, educators may not implement these tools in the way they were designed to, so educators are not able to assist and increase the instructional success (Allehyani & Algamdi, 2023; Jomaa et al., 2024a; Mabuan, 2024).

Finally, there are ethical questions that must eventually be answered regarding the use of student data (Lesia Viktorivna et al., 2022; Allehyani & Algamdi, 2023; Al-Smadi et al., 2024; Jamshed et al., 2024; Jomaa et al., 2024a; Mabuan, 2024; Solak, 2024; Thanh Khoa & Tran, 2024). Collection of personal data is pre-requisite to many AI tools to provide customized learning and open discussion on privacy and data security. Compliance with data protection regulations regarding these tools is the secret to protecting the privacy of students and gaining their confidence.

### **Practical and Theoretical Implications**

Practically, this review provides educators an integrated model for choosing AI tools according to the different language skill required, such as writing accuracy, pronunciation and vocabulary retention. Previous research shows that AI-supported tools, such as ChatGPT, Grammarly, and adaptive language apps, can promote learner autonomy as well as engagement and skill development when purposefully embedded in the curriculum design (Aini et al., 2024; Alqaed, 2024; Van Horn :2024). Furthermore, the classification of AI tools presented in this review can help educators make explicit pedagogical decisions and consider ethical implementation of AI content as a complementary instructional resource rather than a substitute for teacher expertise (Al-Smadi et al., 2024; Ulla et al., 2023). The institutional level, such findings could provide for professional development and equitable AI adoption strategies especially in the low resourced or diverse educational contexts (Chan & Tang, 2024; Davoodi, 2024).

Theoretically, the review can add to an expanding literature of AIEd by synthesising disconnected empirical findings into systematic evidence base tailored to ELT/L, and in turn support learner-centred and process-focused theoretical viewpoints, particularly those that highlight personalized feedback, self-regulated learning, and adaptive instructional facilitation. Furthermore, relating categories of AI tools to learning outcomes highlights the continued lack of longitudinal, experimental and ethical studies on making a case for theory-driven research around sustainable and socially responsible integration of IA in language education.

### **LIMITATIONS AND RECOMMENDATIONS**

Although the integration of AI tools in ELT has shown promising results, several limitations of this review should be acknowledged. As a systematic literature review, this study deliberately employed a single, structured methodological approach guided by the PRISMA framework to ensure transparency and replicability while synthesising available evidence rigorously. This design restricts statistical generalisation but is sufficient for recognizing patterns, predominant categories of tools, and common pedagogical results across contexts. Thus, the results should be seen as an integrated evidence map and not causal claims.

The scope of the review was limited to studies published between 2021 and 2025, and it focused primarily on tools used in higher education and general language learning contexts. Future research could examine the application of AI tools across various educational levels (e.g., K-12) and in non-English language contexts to broaden our understanding of their impact. In addition to that, future studies may adopt mixed-method, and classroom interaction pattern that are beyond the scope of systematic review methodologies.

To maximise the role of AI tools in ELT/L, the emphasis should be placed on widening the availability of these tools, especially in areas with scarce resources, through cooperation with technology providers, who should present cheaper or even free alternatives. For this reason, continuous professional development programs should encourage teachers to acquire the skills for implementing AI tools into their teaching so that they could refine techniques and measure student improvement. Considering that artificial intelligence tools collect massive data, educational institutions should prioritise data protection and ethical governance to safeguard learner privacy and maintain trust.

## CONCLUSION

This systematic literature review has shown that AI is increasingly important in ELT/L, providing personalised learning that leads to better writing accuracy, improved pronunciation, student motivation, and increased engagement. AI-driven tools, such as, ChatGPT, Grammarly, Duolingo, Rosetta Stone, and Speech Ace, have significant potential for supporting language acquisition. These instruments offer motivational strategies and adaptive feedback, and they are effective in supporting a number of language skills, especially writing and speaking.

However, the review also presents some ongoing difficulties. Accessibility remains an issue as students in low-income or rural areas may have limited tools and consistent internet access to effectively utilise AI-driven tech, and over-dependency on AI-endorsed technology threatens to stunt young minds in the development of independent reasoning and problem-solving skills. Additionally, there is a lack of access to, and familiarity with, AI tools among many educators, as well as insufficient training and support for educators to make good use of AI in the learning process. Last but not least, the huge personal data collected by AI systems, also raises important ethical questions including data privacy and security.

The results suggest several significant interpretations. Prioritising equitable access to AI technology could be instrumental in averting growing educational inequalities. Teacher lifelong learning with pedagogical and technical responsible use of pre-trained AI for subject-matter teaching will be crucial. In addition, schools and universities must develop strong data security policies to protect student data and build user confidence in the use of AI.

In addition to the higher education level and EFL context of this study, there is a need for more studies on AI's impact at different educational levels and languages. Longitudinal investigations of how AI technologies mediate learning outcomes and participant engagement over time would also be valuable. Moreover, it should also explore when and how AI support should be balanced with promoting students' autonomy and their critically behaviours.

**Table 3. Summary of the Selected Studies.**

No	Database	Authors	Aim	Sample	Research Design	Country
[1]	WOS, SCOPUS	(Heathco, 2025)	To explore the use of GenAI to translate English-language task setup into students' L1 and compare the performance of students using translated instructions with those using English instructions.	Two cohorts of university students in English-led classrooms with diverse nationalities and native languages (L2 speakers).	Randomized controlled experiment.	South Korea
[2]	WOS, SCOPUS	(Davoodi, 2024)	Discuss AI's role, opportunities, and challenges in bilingual education and teacher professional development.	30 elementary teachers and administrators from various schools in West Texas	Phenomenological study.	West Texas
[3]	WOS, SCOPUS	(Milton et al., 2024)	Examine the impact of AI-PWT on the independent writing skills of health science graduates.	309 Health Science graduates from a South Indian private Medical University	Descriptive survey.	South India
[4]	WOS, SCOPUS	(Mahapatra, 2024)	Investigate the impact of ChatGPT on ESL students' academic writing skills.	134 undergraduate ESL students at an elite private-run university in India	Mixed methods intervention study.	India

[5]	WOS, ERIC	(Mabuan, 2024)	To explore teachers' voices and perspectives on the use of ChatGPT in English Language Teaching (ELT)	115 English Language teachers from elementary school, high school, and college.	Mixed methods	Philippines
[6]	WOS, ERIC	(Jeon et al., 2024)	To examine how the use of AI technology in the CALL context influences students' attitudes toward English through the lens of Global Englishes (GE)	38 students aged 11 to 12 from one public elementary school in South Korea	Mixed methods	South Korea
[7]	SCOPUS, ERIC	(Qu & Wu, 2024)	To study the adoption of ChatGPT as a Computer-Assisted Language Learning (CALL) tool in English learning environments, using hedonic motivation adoption models.	189 Chinese international students who were currently enrolled in British universities	Quantitative survey research	United Kingdom
[8]	SCOPUS, ERIC	(Van Horn, 2024)	Explore perceptions of ChatGPT and promote autonomy in a university EFL context.	120 participants, who were university students in South Korea taking compulsory intermediate-level English conversation courses.	Instrumental case study approach	South Korea
[9]	SCOPUS, ERIC	(Mirzoyeva et al., 2024)	Explore the role of neural network technologies in the development of auditory perception and speech production competencies in English language learning from a psycholinguistic perspective.	180 university students	Mixed methods	South Kazakhstan
[10]	SCOPUS, ERIC	(Jamshed et al., 2024)	investigate the attitudes, opinions, and challenges of AI-powered learning and teaching in EFL classrooms in Saudi Arabia from the students' perspective.	258 Saudi EFL university learners.	Descriptive quantitative design.	Saudi Arabia
[11]	SCOPUS	(Ulla et al., 2023)	Explore EFL teachers' perspectives on ChatGPT in Thailand.	17 EFL teachers teaching in universities in Thailand	Qualitative descriptive (QD) research paradigm	Thailand
[12]	SCOPUS	(Alqaed, 2024)	Investigate Saudi learners' usage of AI applications in their writings and their perceptions towards AI	68 undergraduate English language learners from a public university in Saudi Arabi	Mixed methods	Saudi Arabia

			for English language learning.			
[13]	SCOPUS	(Thanh Khoa & Tran, 2024)	Explore the use and gratifications of AI-assisted learning applications in English language courses in Vietnam.	407 University students in Vietnam	Quantitative cross-sectional survey.	Vietnam
[14]	SCOPUS	(Al-Smadi et al., 2024)	To explore the affordance of AI to English language learning and teaching, focusing on its alignment with the UN's Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education) and SDG 10 (Reduced Inequalities)	18 English teachers	Qualitative research design using semi-structured interviews	Not mentioned  Authors are from Malaysia
[15]	SCOPUS	(Zakarneh et al., 2025)	To investigate the impact of ChatGPT technology on current pedagogical strategies and student language proficiency	301 participants, who were English language students from higher education.	Cross-sectional survey design	United Arab Emirates and Saudi Arabia
[16]	SCOPUS	(ElEbyary & Shabara, 2024)	To investigate how ChatGPT-generated analytical feedback on writing compares to teacher-moderated feedback in terms of feedback quality (adequacy, guidance, comprehensibility, and polarity)	32 cause-effect essays written by Egyptian EFL undergraduates (aged 18-19, native Arabic speakers, CEFR B1 English proficiency)	Mixed-methods	United Kingdom
[17]	SCOPUS	(Cheung & Shi, 2024)	To explore the roles of English and Generative AI in a service-learning subject focused on co-creating stories, and how students embraced or resisted GenAI in the story creation process with service recipients	9 undergraduate students in Hong Kong'	Qualitative case study.	Hong Kong
[18]	SCOPUS	(Allehyani & Algamdi, 2023)	To investigate early childhood (EC) teachers' beliefs and perceptions about using ChatGPT to improve ESL learning for young children.	543 early childhood (EC) teachers from the city of Mecca, Saudi Arabia	Quantitative descriptive survey.	Saudi Arabia
[19]	SCOPUS	(Rahmi et al., 2024)	Evaluate the impact and effectiveness of ParagraphAI on L2 learners' writing skills.	4 seventh-semester EFL undergraduate students in Banda Aceh, Indonesia	Descriptive qualitative method	Not mentioned  Authors are from Indonesia

[20]	SCOPUS	(Chan & Tang, 2024)	Evaluate English teachers' readiness to integrate AI into their teaching practices and identify their training needs.	16 preservice English teachers in Hong Kong.	Quantitative survey study	Hong Kong
[21]	SCOPUS	(Bouchhoua, 2024)	Focus on the potential interplay between acoustic phonetics and AI-powered tools for pronunciation learning.	20 female master's students in linguistics at a Tunisian public university	Action research	Tunisia
[22]	SCOPUS	(N & N S, 2023)	To emphasize ESL learners' perceptions of using AI-powered Google Assistant for learning English and their problems related to its utilization	250 first-year students from various engineering streams	Descriptive survey.	India
[23]	SCOPUS	(Aini et al., 2024)	Explore Indonesian university students' perspectives on integrating various AIED tools into their English language learning.	285 Indonesian university students	Quantitative survey	Indonesia
[24]	SCOPUS	(Alruwaili & Kianfar, 2025)	Investigate the attitudes of EFL female Saudi teachers towards the use of ChatGPT in English language teaching.	13 female EFL Saudi teachers	Qualitative interpretive study.	Saudi Arabia
[25]	SCOPUS	(N & Kumar N S, 2023)	Investigate ESL learners' perceptions and problems concerning AI-assisted English language learning and teaching, focusing on challenges in adopting and utilizing AI technology.	81 second-year engineering stream students from Vellore Institute of Technology.	Descriptive survey	India
[26]	SCOPUS	(Koraishi & Karatepe, 2025)	Compare the characteristics and quality of AI-generated (using Zoom-AI) and human-generated summaries of an ELT lesson.	10 human EFL educators and the Zoom-AI companion	Qualitative case study	Turkey
[27]	SCOPUS	(Tica & Krsmanović, 2024)	To explore university students' perspectives on using ChatGPT as a writing assistance tool in English for Specific Purposes (ESP) and to investigate the relationship between their motivation to learn English and their engagement with ChatGPT	79 university students enrolled in an English Language for IT course	Mixed-method	Not mentioned  Authors are from Serbia.

[28]	SCOPUS	(Kusuma et al., 2024)	To explore the potential of ChatGPT for English language teaching and professional development from the perspective of EFL preservice teachers (PSTs) during their teaching practicum	8 preservice EFL teachers at an Indonesian public university	Phenomenological study	Indonesia
[29]	SCOPUS	(Zhou et al., 2024)	To understand the role of ChatGPT in English language learning from a hedonic motivation perspective on student adoption in Chinese universities	266 Undergraduate and graduate students in China	Quantitative descriptive survey	China
[30]	SCOPUS	(Jomaa et al., 2024a)	Examine the perspectives of English instructors in Oman on the use of AI tools in teaching English vocabulary, their current teaching practices involving AI, and the challenges they face.	56 participants, who were English instructors teaching at a public university in the Sultanate of Oman.	Mixed-method	Oman
[31]	SCOPUS	(Jomaa et al., 2024b)	Investigate the most common AI tools employed by EFL Omani students for vocabulary learning and examine their attitudes towards using these tools, considering the effects of age, gender, and level of study.	236 EFL Omani university students	Mixed-method	Oman
[32]	SCOPUS	(Alexander et al., 2023)	Investigate the challenges faced by ESL lecturers in identifying AI-generated texts and evaluate the effectiveness of several AI detection tools.	6 ESL lecturers working in a higher educational institution in Cyprus	Qualitative case study.	Not mentioned  Authors are from Nicosia.
[33]	ERIC	(Lesia Viktorivna et al., 2022)	To examine the role and effectiveness of AI in English language learning and explore what concerns learners have about its use	418 English language learners at Ukrainian Universities	Descriptive survey	Ukraine
[34]	ERIC	(Alsadoon, 2021)	To investigate Arabic EFL learners' vocabulary learning using an interactive storytelling chatterbot, identify the most used and effective vocabulary tools, and determine which tool aids most in vocabulary learning and retention	20 EFL Saudi students at a high-beginner to low-intermediate level (IELTS 4-4.5) at the British Council in Riyadh, Saudi Arabia	Mixed methods	Saudi Arabia.

[35]	ERIC	(Wu et al., 2021)	To integrate L2 learner cognitive psychology (perceptions, noticing, uptake, initiative, retention, emotion) with AI technology in writing corrective feedback. It also compares AI-based grammar checkers with human raters.	1952 undergraduates in AUFE (Anhui University of Foreign Languages)	Mixed methods	China
[36]	ERIC	(Solak, 2024)	To investigate the experiences of language learners and teachers in using ChatGPT during the language learning and teaching process	8 English language learners with 3 English Language teachers	Phenomenological study	Not mentioned Authors are from Nicosia
[37]	ERIC	(Al Algaithi et al., 2024)	Investigate the effect of using a WhatsApp Bot on English vocabulary learning.	150 Omani EFL learners, with 50 participants	Quasi-experimental design with pre and post-test control group	Oman
[38]	ERIC	(Senowar sito, 2023)	To investigate the effects of autonomous pronunciation learning using AI and the experiences of higher-level students with this method	32 first-year students from Universitas PGRI Semarang	Explanatory sequential mixed methods design.	Indonesia
[39]	ERIC	(Mutam mimah et al., 2024)	To understand teachers' perspectives towards ChatGPT acceptance in English language teaching	114 teachers from Indonesia	Quantitative cross-sectional research design.	Indonesia

## REFERENCES

1. Aini, N., Kurniarahman, I., Widiati, U., Cahyono, B. Y., & Basthomi, Y. (2024). Indonesian university students' perspectives on integrating AIEd into English language learning. *Issues in Educational Research*, 34(3), 803-824.
2. Al-Smadi, O. A., Rashid, R. A., Saad, H., Zrekat, Y. H., Kamal, S. S. L. A., & Uktamovich, G. I. (2024). Artificial Intelligence for English Language Learning and Teaching: Advancing Sustainable Development Goals. *Journal of Language Teaching and Research*, 15(6), 1835-1844. <https://doi.org/10.17507/jltr.1506.09>
3. Al Algaithi, A., Behforouz, B., & Isyaku, H. (2024). The effect of using Whatsapp bot on English vocabulary learning. *Turkish Online Journal of Distance Education*, 25(2), 208-227.
4. Alexander, K., Savvidou, C., & Alexander, C. (2023). Who Wrote This Essay? Detecting Ai-Generated Writing in Second Language Education in Higher Education. *Teaching English With Technology*, 2023(2). <https://doi.org/10.56297/buka4060/xhld5365>
5. Allehyani, S. H., & Algamdi, M. A. (2023). Digital Competences: Early Childhood Teachers' Beliefs and Perceptions of ChatGPT Application in Teaching English as a Second Language (ESL). *International Journal of Learning, Teaching and Educational Research*, 22(11), 343-363. <https://doi.org/10.26803/ijlter.22.11.18>
6. Alqaed, M. A. (2024). Ai in English Language Learning: Saudi Learners' Perspectives and Usage. *Advanced Education*, 12(25), 125-142. <https://doi.org/10.20535/2410-8286.318972>

7. Alruwaili, A. R., & Kianfar, Z. (2025). Investigating EFL Female Saudi Teachers' Attitudes Toward the Use of ChatGPT in English Language Teaching. *Forum for Linguistic Studies*, 7(2). <https://doi.org/10.30564/fls.v7i2.7937>
8. Alsadoon, R. (2021). Chatting with AI Bot: Vocabulary Learning Assistant for Saudi EFL Learners. *English Language Teaching*, 14(6). <https://doi.org/10.5539/elt.v14n6p135>
9. Bouchhioua, N. (2024). Fostering the Interplay Between Acoustic Phonetics and AI-Powered Pronunciation Learning: A Teacher-Action Research. *Teaching English With Technology*, 2024(3). <https://doi.org/10.56297/vaca6841//BFFO7057/YGDQ5334>
10. Brown, T., Mann, B. F., Ryder, N., Subbiah, M., Kaplan, J., Prafulla Dhariwal, Arvind Neelakantan, Pranav Shyam, Sastry, G., Askell, A., Agarwal, S., Herbert-Voss, A., Krueger, G., Henighan, T., Child, R., Ramesh, A., Ziegler, D. M., Jeffrey C.S. Wu, Winter, C., & Hesse, C. (2020). Language Models Are Few-Shot Learners. *ArXiv (Cornell University)*, 4. <https://doi.org/10.48550/arxiv.2005.14165>
11. Chan, K. K.-W., & Tang, W. K.-W. (2024). Evaluating English Teachers' Artificial Intelligence Readiness and Training Needs with a TPACK-Based Model. *World Journal of English Language*, 15(1). <https://doi.org/10.5430/wjel.v15n1p129>
12. Chan, S., & Lo, N. (2024). Enhancing EFL/ESL instruction through gamification: a comprehensive review of empirical evidence [Review of Enhancing EFL/ESL instruction through gamification: a comprehensive review of empirical evidence]. *Frontiers in Education*, 9. *Frontiers Media*. <https://doi.org/10.3389/feduc.2024.1395155>
13. Chen, & Chen, W. 2020. Intelligent tutoring systems and their application in English language learning. *Journal of Educational Technology & Society* 23(4): 45-57.
14. Cheung, L. M. E., & Shi, H. (2024). Co-creating stories with generative AI. *Australian Review of Applied Linguistics*, 47(3), 259-283. <https://doi.org/10.1075/aral.24101.che>
15. Crompton, H., Edmett, A., Ichaporia, N., & Burke, D. (2024). AI and English language teaching: Affordances and challenges. *British Journal of Educational Technology*, 55(6), 2503-2529.
16. Daud, A., Aulia, A. F., Harfal, Z., Nabilla, O., & Ali, H. S. (2025). Integrating Artificial Intelligence Into English Language Teaching: A Systematic Review. *European Journal of Educational Research*, 14(2).
17. Davoodi, A. (2024). Crafting innovative paths in non-linear professional learning for bilingual education: the role of connectivism in the age of AI. *Professional Development in Education*, 1-17. <https://doi.org/10.1080/19415257.2024.2421492>
18. Dugošija, T. (2024). BENEFITS AND CHALLENGES OF ARTIFICIAL INTELLIGENCE IN ENGLISH LANGUAGE TEACHING.
19. Elebyary, K., & Shabara, R. (2024). ChatGPT-Generated Corrective Feedback: Does It Do What It Says on the Tin? *Teaching English With Technology*, 2024(3). <https://doi.org/10.56297/vaca6841//BFFO7057/MYEH4562>
20. Gautam, P. (2022). Major English Students' Perceptions on English Language Learning at University Level. *English Language Teaching Perspectives*, 7, 24. <https://doi.org/10.3126/elt.v7i1-2.47405>
21. Heathco, G. J. (2025). AI translated task setup for non-native English speaking students. *Communication Teacher*, 39(1), 26-32.
22. Hidayati, T., Diana, S., Husna, F., & Perrodin, D. D. (2023). Factors affecting English performance between students residing in tourist and non-tourist areas. *Deleted Journal*, 10(2), 704. <https://doi.org/10.24815/siele.v10i2.27237>
23. Huertas-Abril, C. A., & Palacios-Hidalgo, F. J. (2023). New Possibilities of Artificial Intelligence-Assisted Language Learning (AIALL): Comparing Visions from the East and the West. *Education Sciences*, 13(12), 1234. <https://doi.org/10.3390/educsci13121234>
24. Iberahim, A., Yunus, M. M., & Sulaiman, N. A. (2023). A Review on Technology Enhanced Language Learning (TELL) [Review of A Review on Technology Enhanced Language Learning (TELL)]. *International Journal of Academic Research in Business and Social Sciences*, 13(2). <https://doi.org/10.6007/ijarbss/v13-i2/16496>
25. Ibrahim, K. (2023). Using AI-based detectors to control AI-assisted plagiarism in ESL writing: "The Terminator Versus the Machines". *Language Testing in Asia*, 13(1). <https://doi.org/10.1186/s40468-02300260-2>
26. Jamshed, M., Alam, I., Sultan, S. A., & Banu, S. (2024). Using artificial intelligence for English language learning: Saudi EFL learners' opinions, attitudes and challenges. *Journal of Education and e-Learning Research*, 11(1), 135-141. <https://doi.org/10.20448/jeelr.v11i1.5397>

27. Jeon, J., Lee, S., & Coronel-Molina, S. M. (2024). Rethinking AI: bias in speech-recognition chatbots for ELT. *ELT Journal*, 78(4), 435-445. <https://doi.org/10.1093/elt/ccae035>
28. Jomaa, N., Attamimi, R., & Al Mahri, M. (2024a). The Use of Artificial Intelligence (AI) in Teaching English Vocabulary in Oman: Perspectives, Teaching Practices, and Challenges. *World Journal of English Language*, 15(3). <https://doi.org/10.5430/wjel.v15n3p1>
29. Jomaa, N., Attamimi, R., & Al Mahri, M. (2024b). Utilising Artificial Intelligence (AI) in Vocabulary Learning by EFL Omani Students: The Effect of Age, Gender, and Level of Study. *Forum for Linguistic Studies*, 6(5), 171-186. <https://doi.org/10.30564/fls.v6i5.6968>
30. Jose, J. and Jose, B.J. (2024) 'Educators' Academic Insights on Artificial Intelligence: Challenges and Opportunities', *Electronic Journal of e-Learning*, 22(2), pp. 59–77. Available at: <https://doi.org/10.34190/ejel.21.5.3272>.
31. Koraishi, O. (2024). The Intersection of AI and Language Assessment: A Study on the Reliability of ChatGPT in Grading IELTS Writing Task 2. *Language Teaching Research Quarterly*, 43, 22-42.
32. Koraishi, O., & Karatepe, Ç. (2025). Minds vs machines: A comparative study of AI and teacher-generated summaries in ELT. *Technology in Language Teaching & Learning*, 7(1). <https://doi.org/10.29140/tl.tl.v7n1.1796>
33. Krishnan, V., & Zaini, H. (2025). A Systematic Literature Review on Artificial Intelligence in English Language Education. *International Journal of Research and Innovation in Social Science*, 9(3s), 17-27.
34. Kusuma, I. P. I., Roni, M., Dewi, K. S., & Mahendrayana, G. (2024). Revealing the potential of ChatGPT for English language teaching: EFL preservice teachers' teaching practicum experience. *Studies in English Language and Education*, 11(2), 650-670. <https://doi.org/10.24815/siele.v11i2.34748>
35. Lai, T., Zeng, X., Xu, B., Xie, C., Liu, Y., Wang, Z., Lu, H., & Fu, S. (2023). The application of artificial intelligence technology in education influences Chinese adolescent's emotional perception. *Current Psychology*, 43(6), 5309. <https://doi.org/10.1007/s12144-023-04727-6>
36. Liang, J.-C., Hwang, G.-J., & Chen, M.-R. A. (2021). Roles and research foci of artificial intelligence in language education: An integrated bibliographic analysis and systematic review approach. *Interactive Learning Environments*, 31(7), 4270-4296. <https://doi.org/10.1080/10494820.2021.1958346>
37. Lesia Viktorivna, K.I. in L.L.W.A.W.A. of et al. (2022) 'Artificial Intelligence in Language Learning: What Are We Afraid of', *Arab World English Journal*, (8), pp. 262–273. Available at: <https://doi.org/10.24093/awej/call8.18>.
38. Lee, D., Kim, H. H., & Sung, S. H. (2023). Development research on an AI English learning support system to facilitate learner-generated-context-based learning. *Educ Technol Res Dev*, 71(2), 629-666. <https://doi.org/10.1007/s11423-022-10172-2>
39. Mabuan, R. A. (2024). ChatGPT and ELT: Exploring Teachers' Voices. *International Journal of Technology in Education*, 7(1), 128-153. <https://doi.org/10.46328/ijte.523>
40. Maghamil, M., & Sieras, S. G. (2024). Impact of ChatGPT on the Academic Writing Quality of Senior High School Students. *Journal of English Language Teaching and Applied Linguistics*, 6(2), 115. <https://doi.org/10.32996/jeltal.2024.6.2.14>
41. Mahapatra, S. (2024). Impact of ChatGPT on ESL students' academic writing skills: a mixed methods intervention study. *Smart Learning Environments*, 11(1). <https://doi.org/10.1186/s40561-024-00295-9>
42. Meniado, J. C. (2023). *Digital Language Teaching 5.0: Technologies, Trends and Competencies*.
43. Milton, C., Vidhya, L., & Thiruvengadam, G. (2024). Examining the Impact of Ai-Powered Writing Tools on Independent Writing Skills of Health Science Graduates. *Advanced Education*, 12(25), 143-161. <https://doi.org/10.20535/2410-8286.315068>
44. Mirzoyeva, L., Makhanova, Z., Ibrahim, M. K., & Snezhko, Z. (2024). Formation of auditory and speech competences in learning English based on neural network technologies: psycholinguistic aspect. *Cogent Education*, 11(1). <https://doi.org/10.1080/2331186x.2024.2404264>
45. Mutammimah, H., Rejeki, S., Kustini, S., & Amelia, R. (2024). Understanding Teachers' Perspective toward ChatGPT Acceptance in English Language Teaching. *International Journal of Technology in Education*, 7(2), 290-307. <https://doi.org/10.46328/ijte.656>
46. Moulieswaran, N., & S, P. K. N. (2023). Investigating ESL Learners' Perception and Problem towards Artificial Intelligence (AI) -Assisted English Language Learning and Teaching. *World Journal of English Language*, 13(5), 290. <https://doi.org/10.5430/wjel.v13n5p290>

47. N, M., & Kumar N S, P. (2023). Investigating ESL Learners' Perception and Problem towards Artificial Intelligence (AI) -Assisted English Language Learning and Teaching. *World Journal of English Language*, 13(5). <https://doi.org/10.5430/wjel.v13n5p290>
48. N, M., & N S, P. K. (2023). Google Assistant Assisted Language Learning (GAALL): ESL Learners' Perception and Problem towards AI-powered Google Assistant-Assisted English Language Learning. *Studies in Media and Communication*, 11(4). <https://doi.org/10.11114/smc.v11i4.5977>
49. Oke, O. A., Jamil, D. I., & Çavuş, N. (2023). THE IMPACT OF ARTIFICIAL INTELLIGENCE IN FOREIGN LANGUAGE LEARNING USING LEARNING MANAGEMENT SYSTEMS: A SYSTEMATIC LITERATURE REVIEW. *Information Technologies and Learning Tools*, 95(3), 215. <https://doi.org/10.33407/itlt.v95i3.5233>
50. Pang, K. S., Nol, E., & Heng, K. (2024). Generative AI as a personal tutor for English language learning: A review of benefits and concerns [Review of Generative AI as a personal tutor for English language learning: A review of benefits and concerns]. *SSRN Electronic Journal*. RELX Group (Netherlands). <https://doi.org/10.2139/ssrn.4865398>
51. Pathippallil Mathew, B. (2024). Affordances and Challenges of Integrating Artificial Intelligence into English Language Education: A Critical Analysis.
52. Pérez-Jorge, D., Olmos-Raya, E., Contreras, A. I. G., & Pérez, I. P. (2025). Technologies applied to education in the learning of English as a second language. *Frontiers in Education*, 10. <https://doi.org/10.3389/educ.2025.1481708>
53. Qu, K., & Wu, X. (2024). ChatGPT as a CALL tool in language education: A study of hedonic motivation adoption models in English learning environments. *Education and Information Technologies*, 29(15), 19471-19503. <https://doi.org/10.1007/s10639-024-12598-y>
54. Radosavlevikj, N. (2021). TEACHERS' AND STUDENTS' PERCEPTIONS AND CHALLENGES IN COMMUNICATIVE LANGUAGE TEACHING. *Journal of Teaching English for Specific and Academic Purposes*, 307. <https://doi.org/10.22190/jtesap2003307r>
55. Rahmi, R., Amalina, Z., Andriansyah, A., & Rodgers, A. (2024). Does it really help? Exploring the impact of AI-Generated writing assistant on the students' English writing. *Studies in English Language and Education*, 11(2), 998-1012. <https://doi.org/10.24815/siele.v11i2.35875>
56. Rice, M.F., 2021. Reconceptualizing teacher professional learning about technology integration as intra-57. active entanglements. *Professional development in education*, 47 (2-3), 524-537. doi:10.1080/19415257.2021.1891953.
58. Sahli, N., Boughena, K., & Abdelhadi, A. (2024). A SYSTEMATIC REVIEW OF EMPIRICAL STUDIES ON THE IMPACT OF ARTIFICIAL INTELLIGENCE ON UNIVERSITY STUDENTS' WRITING SKILLS. *Annals of the University of Craiova, Series Psychology, Pedagogy*, 46(2), 285-297.
59. Sharadgah, T. A., & Sa'di, R. A. (2022). A systematic review of research on the use of artificial intelligence in English language teaching and learning (2015-2021): What are the current effects? *Journal of Information Technology Education: Research*, 21. <https://doi.org/10.28945/4999>
60. Sengkey, V. G. (2022). The Relationship Between Students' Anxiety in Learning English and Their English Achievement. *Deleted Journal*, 1, 207. <https://doi.org/10.33654/iseta.v1i0.1695>
61. Senowarsito, S. N. A. (2023). The Use of Artificial Intelligence to Promote Autonomous Pronunciation Learning: Segmental and Suprasegmental Features Perspective. *Indonesian Journal of English Language Teaching and Applied Linguistics*, 8(2), 133-147.
62. Sim, J. S. E., & Ismail, H. H. (2023). Using Digital Tools in Teaching and Learning English: Delving into English Language Teachers' Perspectives. *Creative Education*, 14(10), 2021. <https://doi.org/10.4236/ce.2023.1410129>
63. Solak, E. (2024). Revolutionizing Language Learning: How ChatGPT and AI are changing the Way We Learn Languages. *International Journal of Technology in Education*, 7(2), 353-372. <https://doi.org/10.46328/ijte.732>
64. Thanh Khoa, B., & Tran, A. (2024). AI-assisted learning applications in English courses in Vietnam. *Journal of Applied Learning & Teaching*. <https://doi.org/10.37074/jalt.2024.7.2.34>
65. Tica, L., & Krsmanović, I. (2024). Overcoming the Writer's Block? Exploring Students' Motivation and Perspectives on Using ChatGPT as a Writing Assistance Tool in ESP. *ELOPE: English Language Overseas Perspectives and Enquiries*, 21(1), 129-149. <https://doi.org/10.4312/elope.21.1.129-149>

66. Timpe-Laughlin, V., Dombi, J., Sydorenko, T., & Sasayama, S. (2023). L2 learners' pragmatic output in a face-to-face vs. a computer-guided role-play task: Implications for TBLT. *Language Teaching Research*. <https://doi.org/10.1177/13621688231188310>
67. Ulfah, N. M., Tsuraya, A. S., & Risal, R. (2021). THE USE OF CODE-SWITCHING BY ENGLISH TEACHERS IN FOREIGN LANGUAGE CLASSROOM. *English Language Linguistics and Culture International Journal*, 1(1), 11. <https://doi.org/10.24252/elstic-ij.v1i1.22001>
68. Ulla, M. B., Perales, W. F., & Busbus, S. O. (2023). To generate or stop generating response : Exploring EFL teachers' perspectives on ChatGPT in English language teaching in Thailand. *Learning: Research and Practice*, 9(2), 168-182. <https://doi.org/10.1080/23735082.2023.2257252>
69. Vaishnav, P. (2024). Current Trends and Future Prospects in English Language Teaching (ELT). *Asian Journal of Education and Social Studies*, 50(7), 1. <https://doi.org/10.9734/ajess/2024/v50i71438>
70. Van Horn, K. (2024). ChatGPT in English Language Learning: Exploring Perceptions and Promoting Autonomy in a University EFL Context. *Teaching English as a Second or Foreign Language--TESL-EJ*, 28(1). <https://doi.org/10.55593/ej.28109a8>
71. Wei, L. (2023). Artificial intelligence in language instruction: impact on English learning achievement, L2 motivation, and self-regulated learning. *Frontiers in Psychology*, 14, 1261955. <https://doi.org/10.3389/fpsyg.2023.1261955>
72. Wu, L., Wu, Y., & Zhang, X. (2021). L2 Learner Cognitive Psychological Factors About Artificial Intelligence Writing Corrective Feedback. *English Language Teaching*, 14(10). <https://doi.org/10.5539/elt.v14n10p70>
73. Xiaofan, W., & Annamalai, N. (2025). Investigating the Use of AI Tools in English Language Learning: A Phenomenological Approach. *Contemporary Educational Technology*, 17(2).
74. Xu, G., Yu, A. & Liu, L. (2025). A meta-analysis examining AI-assisted L2 learning. *International Review of Applied Linguistics in Language Teaching*. <https://doi.org/10.1515/iral-2024-0213>
75. Yong, Q. (2020). Application of artificial intelligence to higher vocational English Teaching in the Information Environment. *Journal of Physics: Conference Series*. <https://doi.org/10.1088/17426596/1533/3/032030>
76. Zakarneh, B. I., Aljabr, F., Al Said, N., & Jlassi, M. (2025). Assessing Pedagogical Strategies Integrating ChatGPT in English Language Teaching: A Structural Equation Modelling-Based Study. *World Journal of English Language*, 15(3). <https://doi.org/10.5430/wjel.v15n3p364>
77. Zhang, S., & Hasim, Z. (2023). Gamification in EFL/ESL instruction: A systematic review of empirical research [Review of Gamification in EFL/ESL instruction: A systematic review of empirical research]. *Frontiers in Psychology*, 13. *Frontiers Media*. <https://doi.org/10.3389/fpsyg.2022.1030790>