INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

OPEN ACCESS JOURNAL

Vol 14, Issue 2, (2025) E-ISSN: 2226-6348

The Integration of AI in K-12 and University English Language Teaching: A Systematic Literature Review

Dai Jing, Nurfaradilla Mohamad Nasri

Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia

Email: p142736@siswa.ukm.edu.my, nurfaradilla@ukm.edu.my

To Link this Article: http://dx.doi.org/10.6007/IJARPED/v14-i2/25369 DOI:10.6007/IJARPED/v14-i2/25369

Published Online: 15 May 2025

Abstract

AI tools and technologies have proliferated the education sector, leading to improved assessment, learning, and teaching experiences and pedagogical practices, making it significant to assess its impact on educators of English Language. A systematic literature review is conducted to evaluate AI integration in teaching English Language in the university and K-12 setting. 21 articles have been synthesized to gain insight into the pedagogical AI integration, attitude and perception of educators and its influence on educational outcomes. The findings underscore improved pedagogical practices, assessment, content creation and delivery through AI integration. It also enables teachers to address the language learning anxiety among students for enhanced language proficiency using adaptive assessment tools. Nonetheless, educator preparedness, ethical concerns, AI reliability and AI literacy persist as key challenges. Concern over academic integrity, assessment biases, and AI over-reliance is also acknowledged, which emphasizes responsible and ethical AI integration through policies, professional development, and AI-human collaboration. AI should be integrated into English language teaching as a pedagogical support to enhance the teaching and learning outcomes in K-12 and university contexts.

Keywords: Artificial Intelligence, English Language Teaching, Pedagogical Practices, Systematic Literature Review, AI in Education, Teaching-Learning Outcomes

Introduction

Artificial intelligence (AI) has proliferated in the educational sector to assist in the teaching and learning process to provide transformative and enriching experiences. AI can be explained as “making a machine behave in ways that would be called intelligent if a human were so behaving” (Zapata et al., 2024, p. 1). Generative AI (Gen AI) is the third-generation development in AI that centers on empirical datasets, supervised machine learning, unsupervised machine learning, and self-supervised learning. It is widely accessed through diverse platforms and tools like ChatGPT, Gemini, Claude among many others. There is an increased adoption of AI in the education sector as it supports instructional methodologies along with administrative tasks leading to improved management of workload by teachers (Ankitdhamija & Dhamija, 2024). Diverse AI tools are being heralded as instrumental in

improved instructional effectiveness, reducing teacher workload and providing personalized learning experiences.

English language is recognized as a global lingua franca, which emphasizes on the need to understand the integration of AI tools in the teaching process to enhance the teaching and learning outcomes. However, there is a lack of consolidated research on the pedagogical integration of AI, the perception and interaction of teachers with AI tools, and its impact on teaching and learning outcomes. Moreover, the adoption of AI tools for varied purposes in K-12 and university contexts makes it essential to understand the experiences and perceptions of teachers. This SLR will be significant in understanding the experiences of teachers in integrating AI tools in English language teaching to guide the pedagogical practices of teachers and promote the adoption of AI tools. Moreover, it will guide policymakers to make modification that addresses the challenges experienced by teachers and promote AI integration in the teaching process to ensure improved educational outcomes.

The integration of AI in teaching practices has contributed to significant outcomes by providing improved learning experiences and facilitating comprehension of complex concepts. Teachers have developed motivationally supportive mathematics lesson plans using AI tools like ChatGPT to foster positive mathematics engagement, motivation, and emotions (Şimşek, 2025; Rutherford et al., 2025). AI-enabled teachers to include utility-value messages and non-standard examples along with providing specific feedback, resulting in higher learner engagement and comprehension. However, they also perceive self-efficacy, time management, originality and mathematical performance of Gen AI as limiting factors. Teachers are increasingly able to support learners' understanding of concepts and bridge the gap between theory and practice through generative AI-driven games (Trindade, Edirisinghe, and Luo, 2024). It contributes to higher educational outcomes as students demonstrate higher engagement and retention of knowledge. Moreover, ChatGPT as an AI tool has facilitated the teaching of problem-based learning to medical students, leading to improved medical interviewing skills, clinical competence, and clinical judgment compared to traditional teaching practices (Hui et al., 2025; Naseer et al., 2025). Students also responded positively and acknowledged the improved learning outcomes through AI integration in the teaching process. Moreover, Gen AI tools like Claude, Gemini, and ChatGPT have assisted teachers in developing educational resources, enhancing productivity, and supporting lesson planning to improve teaching quality and educational outcomes. However, Cordero, Torres-Zambrano, and Cordero-Castillo (2024) emphasized the need for guiding teachers through prompt development, ethical guidelines, and continuous professional training, which can also address the concerns raised by Şimşek (2025), for responsible and balanced AI integration in higher education. Teachers increasingly use AI for teaching/learning, assessment and administrative activities but also acknowledge the challenges of AI competencies, AI literacy and ethics and school readiness (Cheah, Lu, and Kim, 2025; Ng, Chan, and Lo, 2025). It exemplifies the significant potential that can be leveraged by teachers through effective AI integration along with highlighting the need for continuous support, professional development and policy guidance for attaining higher outcomes.

AI integration in the education sector has also supported learner experiences through personalized learning, immediate feedback and improved learning environment. Gen AI tools like Quillbot and Grammarly has enabled learners to enhance their language skills like

vocabulary, grammar, reading and writing through adaptive and personalized support (Kohnke et al., 2025). Learners acknowledged the creative support and personalized feedback as it helped them understand areas of improvement, leading to increased focus and learning outcomes. Language learning of students is also supported as Gen AI enhances the learning motivation, emotional engagement and well-being of learners by reducing stress and anxiety in an emotionally supportive learning environment (Kohnke & Moorhouse, 2025). Moreover, engagement with ChatGPT has resulted in improved scores for students by providing a less stressful and more effective learning environment, leading to lower physical and cognitive demands (Murtaza et al., 2025). It resulted in improved correctness in answers leading to higher academic scores through alignment with learning preferences and enhanced comprehension of complex concepts and ideas. AI integration in language learning also contributed to enhancing reading comprehension, self-regulated learning and higher learner engagement among students (Rad, 2025). 77% of the students in the study reported enhanced motivation and increased engagement through the use of the AI platform in the language learning journey. AI integration has also supported students through feedback mechanisms leading to enhanced writing skills, higher motivation, trait emotional intelligence, and foreign language peace of mind (Mohammed & Khalid, 2025). It contributed to providing students with a supportive and personalized learning environment to enhance their language abilities and improve their educational outcomes. However, it is also essential to note that AI tools support positive learning outcomes by providing students with calibrated feedback, as the generic feedback is limited and imperfect (Zapata et al., 2024). Students preferred calibrated feedback using AI as it was effective, thereby indicating the need for human-AI collaboration to enhance teaching and learning practices through effective AI integration.

Previous research emphasized the significance of AI integration in education in enhancing teaching practices and learning experiences for improved educational outcomes in higher education. It supports teachers in assessment, administrative, and teaching/learning practices while students benefit from a supportive learning environment, personalized feedback, and improved emotional regulation to enhance their learning performance. However, there is limited analysis of AI integration on the teaching experiences and practices of English language teachers. There is negligible research emphasizing the pedagogical integration, teaching outcomes, and perception of educators concerning diverse AI tools as considerable research emphasis on the learning outcomes of students.

Research Objective

Drawing on the research gap identified above, the objective of the current SLR is to examine the integration of AI tools in English Language teaching across the K-12 and university settings based on analysis of empirical research literature between the period of 2020-2025 for guiding future empirical research in this research area.

Research Questions

RQ1: How are AI tools integrated by pedagogical practices by English language teachers in the K-12 and university context?

RQ2: What are the experiences, perceptions, and attitudes of English language teachers concerning the usage and integration of AI tools in their instructional approach?

RQ3: How does AI integration by English language teachers impact the teaching outcomes and language skill development of students?

Methodology

The current study will conduct a systematic literature review by strictly adhering to the PRISMA standards for answering the above research questions. Relevant research literature was identified from two databases, namely Scopus and Web of Science (WoS), for the study based on the process of searching, screening, and evaluating. After collecting relevant empirical research literature that will support the study, the researcher comprehensively analyzed the sources to gain insight into the pedagogical practices, perceptions, and attitudes of educators and the teaching and learning outcomes based on AI integration in English language teaching in the K-12 and university settings. The research process comprising six steps: planning, literature search, evaluating literature quality, extracting data, integrating data, and writing a review was adopted for this study to maintain a rigorous research process for enhancing the reliability of the findings.

Article Selection Process

PRISMA, an acronym for Preferred Reporting Items for Systematic Reviews and Meta-Analyses, provides a statement for standardizing the reporting of systematic reviews and meta-analyses. The process of article screening in the current study is strongly aligned with the PRISMA framework by segregating the process into three stages of identification, screening, and including (Fig. 1). The article screening process is grounded in the PRISMA statement while the flowchart is developed by adapting it from the official PRISMA website document.

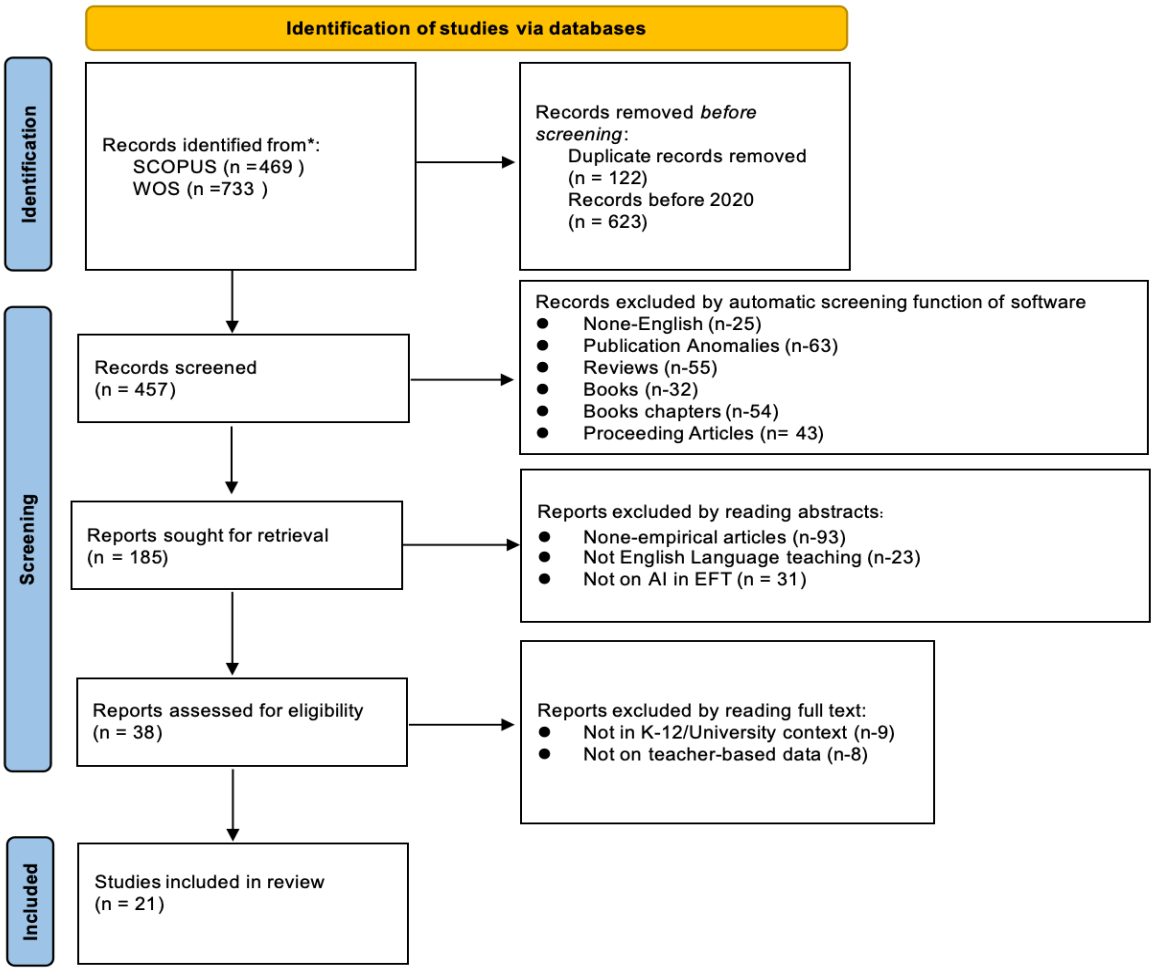

Figure 1: Article Selection Process

Phrase 1: Identification

The screening of the research article for the current study based on two database resources, Scopus and WoS, as both resources provide quality research articles that would enhance the quality of the SLR. The selected databases have strict criteria for selecting journals to maintain high quality and academic impact. It consequently ensures high standard and reliability of the included articles are its content. International recognition is accredited to both databases due to which many researchers globally rely on both sources for conducting systematic reviews.

The literature was searched using carefully selected keywords to identify relevant and valuable empirical articles related to the research area with considerable accuracy. Selection of the databases was followed by a literature search using keywords like “Artificial Intelligence” and “English Language Teaching” along with abbreviations like AI and ELT. The search formula for both the databases are presented in Table 1.

The researcher identified 469 articles from WoS database and 733 articles from the Scopus database in the primary stage of literature search, leading to 1202 articles. It was followed by determining the publication year of the identified articles using the official database website and automated screening function in the identification stage. It was restricted to the last five years, ranging between 2020 to 2025, which resulted in 579 articles as 623 articles were

published before 2020. Moreover, duplicate articles were removed by the researcher using an automated tool, narrowing them down to 457 articles for the screening phase.

Table 1
Database and Search Formula

Database	Search Formula
Scopus	(TITLE-ABS-KEY("AI" OR "Artificial Intelligence" OR "Generative AI") AND TITLE-ABS-KEY("English Language Teaching" OR "English Teaching" OR "ELT"))
WoS	TS=("AI" OR "Artificial Intelligence" OR "Generative AI") AND TS=("English Language Teaching" OR "English Teaching" OR "ELTl")

Phrase 2: Screening

Definite criteria were established for the screening of the identified articles, which are presented in Table 2. The researcher used software supporting automatic screening to screen out articles that do not align with the identified critical. Indicators like article type, focus of the article, publication date, publication type, and language were used to include articles during the screening process. It was followed by reviewing the abstract and title of the articles to screen out literature that did not adhere to the criteria of research nature and research scope. Finally, the remaining articles were screened by reading the full text to select articles that align best with the scope of the current study to include in the review.

Table 2
Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion
The focus of the article	Artificial Intelligence in English language teaching in K-12 and university	Articles that did not focus on k-12 or university or Artificial Intelligence
Publication date	From 2020 to 2025	<2020
Publication type	Journal	Book、Proceeding
Article Type	Empirical Article	Review、Concept Paper 、 Conceptual article
Language	English	Other languages

The screening process was conducted by developing a consolidated table using a table file to include information like author, title, publication year, and other information related to the articles through the automatic screening function. It was followed by screening out articles that were in languages other than English (n-25) to support subsequent reading. Moreover, articles with abnormal publications (n-63) were screened out during the process as their publication status was “withdrawn,” “retracted,” or another non-final status. Furthermore, articles under the category of reviews (n-55), conference proceedings (n-43), books (n-32), and book chapters (n-54) were excluded in this phase, leaving 185 articles at the end of the initial screening.

The abstract and title of the 185 articles were downloaded to screen out articles that did not align with the research criteria of the current study. In the process, non-empirical research articles (n-93) like conceptual articles, theory-based articles, and review articles were excluded from the research. Further, articles that did not specifically emphasized on English language teaching were also screened out. Articles focusing on using AI for English language teaching in foreign language courses and programs or articles concerning adult learners who are learning English language informally were excluded from the study. Articles that did not specifically focus on AI integration for teaching the English language were also eliminated, which resulted in 38 articles in this stage. Finally, these articles were read by the researcher in detail to identify articles that did not link AI integration with English language teaching in K-12 or university contexts (n-9), as well as articles that emphasized teaching practices by collecting data from students (n-8).

Phrase 3: Including

After the previous screening, 21 articles were included in the study as the researcher believed that these articles aligned with the purpose and criteria identified for the study. The selected articles were published within the last 5 years by maintaining high-quality empirical research to explore the integration of AI in diverse aspects of English language teaching by K-12 and university teachers. The selected articles provide insight from different regions and countries and range across the educational levels of K-12 and university contexts, focusing on the English Language.

Table 3

Summary of Included Studies

No	Authors	year	Publication	DOI	Region
1	Williyan et al.,	2024	*Teaching English With Technology*	https://doi.org/10.56297/vaca6841/lrdx3699/rzoh5366	Indonesia
2	Hsiao, & Chang,	2023	*Interactive Learning Environments*	https://doi.org/10.1080/10494820.2023.2207187	Taiwan , China
3	Yin & Feng,	2024	*Applied Mathematics and Nonlinear Sciences*	https://doi.org/10.2478/amns-2024-3096	China
4	Pai et al.,	2024	*Journal of Internet Technology*	https://jit.ndhu.edu.tw/article/view/3010	Taiwan , China
5	Zaim et al.,	2024	*Computers and Education Artificial Intelligence*	https://doi.org/10.1016/j.caeai.2024.100335	Indonesia
6	Alsalem,	2024	*Cogent Education*	https://doi.org/10.1080/2331186x.2024.2430865	Saudi Arabia
7	Nugroho et al.,	2024	*Computers in the Schools*	https://doi.org/10.1080/07380569.2024.2441161	Indonesia
8	Aljabr et al.,	2024	*Acta Psychologica*	https://doi.org/10.1016/j.actpsy.2024.104605	Saudi Arabia
9	Abisheva et al.,	2024	*Qubahan Academic Journal*	https://doi.org/10.48161/qaj.v4n4a1256	Kazakhstan
10	Alruwaili et al.,	2025	*Forum for Linguistic Studies*	https://doi.org/10.30564/fls.v7i2.7937	Saudi Arabia
11	Ugli et al.,	2025	*International Journal of Information and*	https://doi.org/10.18178/ijiet.2025.15.2.2238	Uzbekistan

			Education Technology		
12	Mohamed	2023	*Education and Information Technologies*	https://doi.org/10.1007/s10639-023-11917-z	Saudi Arabia
13	Liu & Xiao,	2024	*Education and Information Technologies*	https://doi.org/10.1007/s10639-024-13117-9	China
14	An et al.,	2022	*Education and Information Technologies*	https://doi.org/10.1007/s10639-022-11286-z	China
15	Jomaa et al.,	2024	*World Journal of English Language*	https://doi.org/10.5430/wjel.v15n3p1	Oman
16	Zakarneh et al.,	2025	*World Journal of English Language*	https://doi.org/10.5430/wjel.v15n3p364	UAE, Saudi Arabia
17	Jamshed et al.,	2024	*International Journal of Interactive Mobile Technologies*	https://doi.org/10.3991/ijim.v18i19.50361	India
18	Wiyaka et al.,	2024	*Theory and Practice in Language Studies*	https://doi.org/10.17507/tpls.1412.20	Indonesia
19	Bohórquez et al.,	2024	*Lengua y Sociedad*	https://doi.org/10.15381/lengsoc.v23i2.26999	Coloumbia
20	López-Minotta et al.,	2025	*Multidisciplinary Journal of Educational Research*	https://doi.org/10.17583/remie.16188	Coloumbia
21	Yuan,	2023	*Interactive Learning Environments*	https://doi.org/10.1080/10494820.2023.2282112	China

Results

Overview of Studies Included

The SLR, based on the above-discussed research method, included 21 articles, as shown in Figure 2 below. It comprises 6 articles based on qualitative research, 6 articles based on a quantitative approach, and 9 articles based on a mixed-method approach.

The study also emphasizes on two educational levels, namely K-12 and university level. Among the included articles, 8 articles emphasize on K-12 context while 13 articles focus on the university context.

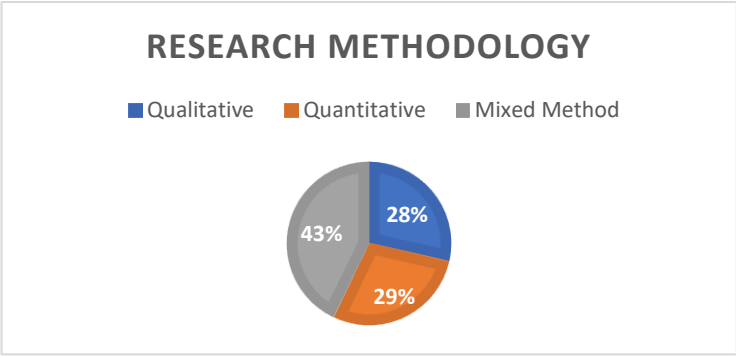

Figure 2: Research Methodology

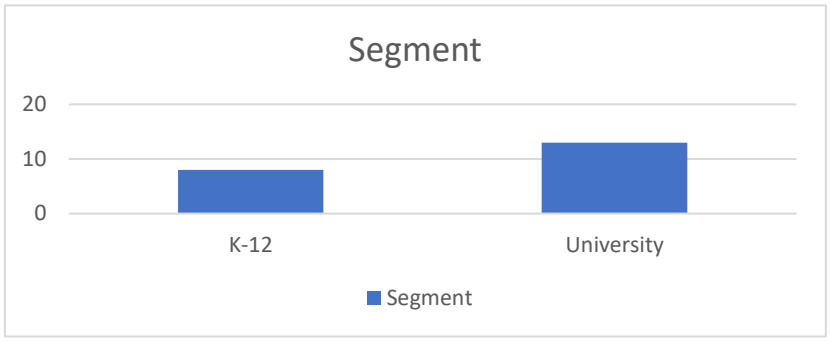

Figure 3: Segments

RQ1: How are AI tools integrated by pedagogical practices by English language teachers in the K-12 and university context?

The educational sector is witnessing increased usage of AI tools as a key resource in teaching the English language, thereby enhancing pedagogical practices in the university and K-12 context. Teachers are integrating AI tools to streamline and enhance the lesson planning and design process, content development, assessment measures, and instructional support (Nugroho et al., 2024; Williyan et al., 2024). Educators are transitioning from traditional instructional materials and pedagogical practices to AI-based interactive resources by using tools like you.com, ChatGPT and magicschool.ai. It contributes to developing culturally sensitive and engaging learning content, personalized support, enhanced administrative efficiency and positive classroom interactions. Moreover, instructional frameworks also reflect the integration of specialized AI platforms and software like Linggle search tools, Linggle Read, and Linggle Write to provide students with structured learning experiences (Hsiao & Chang, 2024). These AI tools enable teachers to develop interactive and student-centered activities in the synchronous and online setting, leading to enhanced learner engagement and autonomy, resulting in improved writing and reading skills among high school students. Generative AI has also proved beneficial in university context through integration in pedagogical frameworks grounded in Activity theory and UTAUT. It provides teachers with opportunities to create customized instructional materials and content based on unique learning needs and contexts but Zaim et al. (2024) acknowledges the struggle faced in integrating AI technology in coherence with existing learning materials.

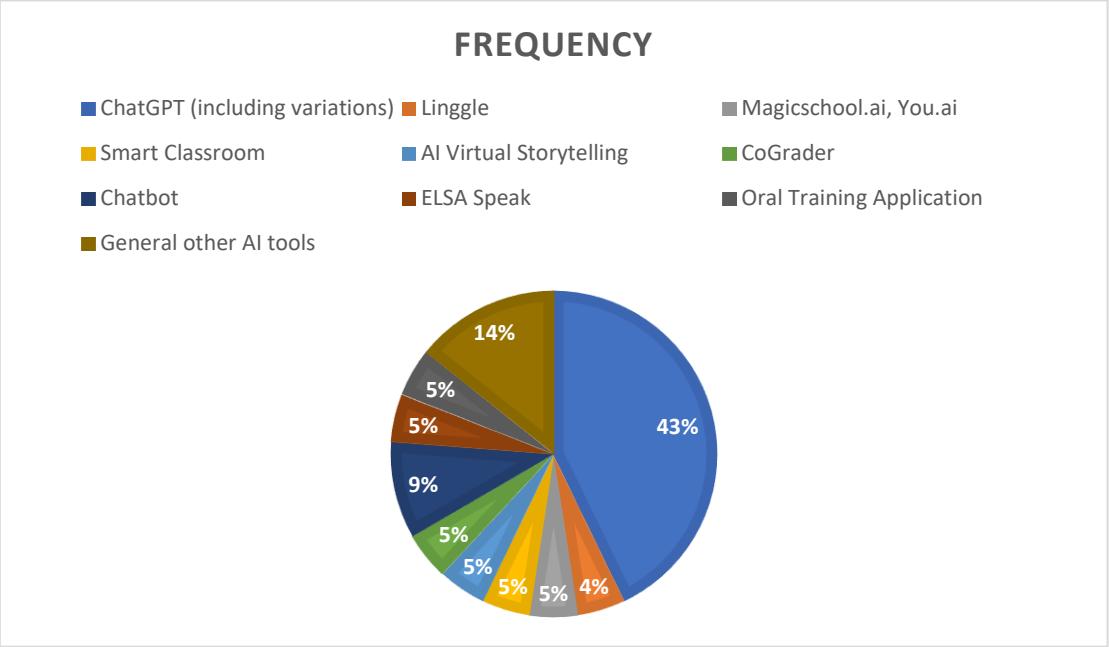

Figure 4: AI tools used in English Language Teaching

Table 4
Purpose of AI tools used

No	Authors	AI tool	Purpose
1	Williyan et al., 2024	ChatGPT, Magicschool.ai, You.com	Improving lesson planning and content development
2	Hsiao, & Chang, 2023	Linggle Write, Linggle Read, Linggle Search	Promoting the development of autonomous writing and reading
3	Yin & Feng, 2024	IoT-based Smart Classrooms	Monitoring learning behaviour and regulating teaching strategies
4	Pai et al., 2024	AI Virtual Storytelling System	Improving oral language skills using interactive role-play
5	Zaim et al., 2024	Generative AI (e.g., ChatGPT)	Facilitating content personalization and lesson development
6	Alsalem, 2024	CoGrader	Automating feedback and assessment
7	Nugroho et al., 2024	ChatGPT	Aiding educators in content development, lesson planning and assessment.
8	Aljabr et al., 2024	General AI-based tools	Evaluating pedagogical and ethical issues associated with AI in pedagogical practices
9	Abisheva et al., 2024	Various AI-assisted learning tools	Evaluating ethical competencies of educators in AI usage
10	Alruwaili et al., 2025	ChatGPT	Evaluating perception of educators on integrating ChatGPT in teaching EFL
11	Ugli et al., 2025	ChatGPT	Evaluating the impact of ChatGPT on student autonomy and EFL teaching
12	Mohamed, 2023	ChatGPT	Exploring the role of ChatGPT in language learning
13	Liu & Xiao, 2024	Generative AI (ChatGPT and others)	Assessing integration of AI at diverse instructional phases
14	An et al., 2022	AI-supported language learning tools	Exploring teachers attitude in K-12 concerning AI in classrooms

15	Jomaa et al., 2024	ChatGPT, Kahoot, Duolingo, Quizlet, Google Translate	Improving vocabulary using AI apps
16	Zakarneh et al., 2025	ChatGPT	Evaluating role of ChatGPT in enhancing proficiency and engagement
17	Jamshed et al., 2024	ChatGPT	Comparative analysis of teacher and AI feedback on enhancing writing abilities
18	Wiyaka et al., 2024	AI Chatbot	Evaluating reading assessment based on Chatbot integration
19	Bohórquez et al., 2024	ELSA Speak, ASR Technology	Improving fluency and pronunciation using AI integrated phonetics training
20	López-Minotta et al., 2025	AI-powered Oral Training Application	Facilitating development of oral proficiency
21	Yuan, 2023	AI Chatbot	Examining effectiveness of AI chatbot in enhancing oral fluency.

AI tools are being integrated by teachers for evaluating language proficiency and providing quality feedback. CoGrader, as an AI software focusing on grading, has shaped the pedagogical practices of teachers by automating the grading of written assessments (Alsalem, 2024). Educators feel that CoGrader has high efficiency and usefulness in developing an AI-based grading system to provide detailed, objective and timely feedback to students. However, it also sheds skepticism concerning completely relying on AI tools for assessing students' language proficiency, emphasizing the need for human judgment in analyzing the nuanced writing skills of students. In addition to AI integration for assessment and resource development, teachers are also integrating it in developing Internet of Things (IoT) smart classrooms to obtain real-time analytics and accordingly adopt pedagogical instructions simultaneously for English language teaching. Teachers are able to collect continuous data using smart technologies, which leads to customized teaching practices and approaches for optimizing learning outcomes at the K-12 level (Yin & Feng, 2024). Similarly, at the university level, pedagogical practices have been enhanced through interactive AI systems like Virtual Avatar Interactive Live Streaming System (VAILSS) as it provides interactive and multimodal language learning experiences to students (Pai et al., 2024). These AI-based systems assist teachers in developing communicative competence and learner engagement through role-play and immersive storytelling activities leading to rich and meaningful instructions.

RQ2: What are the experiences, perceptions, and attitudes of English language teachers concerning the usage and integration of AI tools in their instructional approach?

Educators are divided on the integration of AI in English language teaching. Their perceptions range from considerable enthusiasm to considerable skepticism concerning its pedagogical and learning implications. Although there is a collective consensus concerning the potential benefit of AI integration, educators are also concerned about ethical practices, pedagogical integration, and over-reliance on tools (Alruwaili & Kianfar, 2025; Abisheva et al., 2024). Many research demonstrates positive perception of educators concerning AI integration to assist in designing personalized learning experiences, automate assessment and improve lesson planning. AI tools like ChatGPT and Natural Language Processing (NLP) applications enable teachers to develop dynamic classroom activities, provide real-time feedback and enhance student engagement (Alruwaili & Kianfar, 2025; Ugli, 2025). Teachers in Saudi Arabia reported the ease of streamlining lesson preparation and providing students with differentiated instructions aligned with unique learner needs through the positive integration of AI tools (Mohamed, 2023).

Instructors in a Chinese university believed that AI has significant potential to enhance resource curation and content creation and develop an adaptive learning environment by using structured frameworks like the ADDIE model (Liu & Xiao, 2024). Teachers are also positive towards AI integration as it provides students with a valuable language partner to provide quality and meaningful opportunities for self-regulated learning and language interactions. Moreover, teachers in Uzbekistan perceive AI tools as integral in enhancing autonomous engagement and learning among students to develop their fluency, grammar, and pronunciation through one-on-one interaction with chatbots (Ugli, 2025).

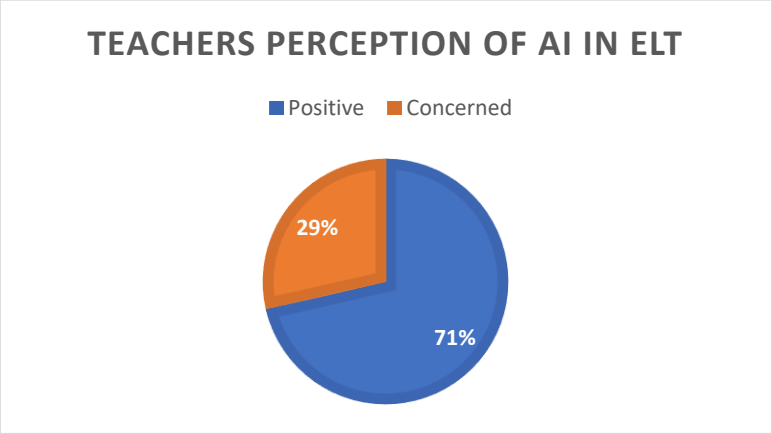

Figure 5: Teacher Perception of AI in ELT

Table 5
Perception of Teachers towards AI integration

No	Authors	AI tool	Perception and Attitude
1	Williyan et al., 2024	ChatGPT, Magicschool.ai, You.com	Improved resource generation and personalized lesson planning
2	Hsiao, & Chang, 2023	Linggle Write, Linggle Read, Linggle Search	Enhanced synchronous online course design
3	Yin & Feng, 2024	IoT-based Smart Classrooms	Data-driven lesson adaptation and personalized feedback
4	Pai et al., 2024	AI Virtual Storytelling System	Improved multimodal learning strategies
5	Zaim et al., 2024	Generative AI (e.g., ChatGPT)	More efficient instructional design
6	Alsalem, 2024	CoGrader	Reduced grading workload and increased consistency
7	Nugroho et al., 2024	ChatGPT	Teachers gained efficiency in preparing materials
8	Aljabr et al., 2024	General AI-based tools	Enhanced awareness of AI ethics, better understanding of AI-integrated pedagogy
9	Abisheva et al., 2024	Various AI-assisted learning tools	Need for developing AI literacy and responsible AI usage
10	Alruwaili et al., 2025	ChatGPT	Enhanced engagement and efficiency in learning but concerns over-dependency
11	Ugli et al., 2025	ChatGPT	Improved autonomous learning, grammar checking, and real-time feedback
12	Mohamed, 2023	ChatGPT	Facilitated personalized learning but raised concerns over academic integrity

13	Liu & Xiao, 2024	Generative AI (ChatGPT and others)	AI improved student engagement but lacked deep curriculum integration
14	An et al., 2022	AI-supported language learning tools	Improved engagement, but concerns over AI replacing traditional pedagogy
15	Jomaa et al., 2024	ChatGPT, Kahoot, Duolingo, Quizlet, Google Translate	Increased vocabulary retention and self-efficacy
16	Zakarneh et al., 2025	ChatGPT	Enhanced writing fluency and accuracy
17	Jamshed et al., 2024	ChatGPT	Significant reduction in grammatical errors
18	Wiyaka et al., 2024	AI Chatbot	Improved reading comprehension
19	Bohórquez et al., 2024	ELSA Speak, ASR Technology	Improved pronunciation, fluency, and stress pattern recognition
20	López-Minotta et al., 2025	AI-powered Oral Training Application	Improved speaking fluency and conversation skills
21	Yuan, 2023	AI Chatbot	Enhanced oral English skills

Although there is considerable positive perception among English language teachers concerning AI integration in pedagogical practices, there is still educators who resist its integration based on ethical and pedagogical challenges. Some educators believe that increased AI reliance can affect learner ability to think critically and meaningfully engage in complex problem-solving activities (Mohamed, 2023). For example, students may develop passive learning behaviour through consistent reliance on responses generated by ChatGPT (Alruwaili & Kianfar, 2025; Mohamed, 2023). While teachers in Kazakhstan have a negative perception due to ethical dilemmas, algorithmic biases and data privacy in the absence of established AI policies guiding its usage in educational institutions (Abisheva et al., 2024). Moreover, negative attitude and perception of teachers can also be attributed to their limited digital preparedness and literacy. Despite the innovative pedagogical affordances supported by AI tools, educators in Kazakhstan and China acknowledge lack of professional training and knowledge to support effective AI integration into instructional design (Abisheva et al., 2024; Liu & Xiao, 2024). Even in the context of K-12, Chinese teachers reported instructional barriers and curricular inflexibility as key factors restricting their approach toward AI integration into teaching practices (An et al., 2022). Moreover, there is a collective consensus among teachers that AI should be used as an assistive tool instead of replacing human instruction to ensure quality teaching and learning processes (Abisheva et al., 2024; Mohamed, 2023; An et al., 2022). Teachers are cautiously optimistic about AI integration but emphasize its responsible use through ethical consideration and professional development.

RQ3: How does AI integration by English language teachers impact the teaching outcomes and language skill development of students?

AI integration in English language teaching has influenced teaching outcomes through targeted feedback, AI-driven training, and personalized learning experiences to attain enhanced learning outcomes like improved language fluency, higher engagement, and emotional regulation. Researchers emphasize that AI tools like chatbot tutors, speech recognition applications, AI-powered feedback systems, and ChatGPT as part of teaching assistance support improved learning outcomes despite posing challenges concerning student dependency, digital literacy, and ethical concerns (Jamshed et al., 2024; Jomaa et al., 2024; Wiyaka et al., 2024; Zakarneh et al., 2025). Automated assessment and feedback using AI tools has enabled teachers to improve the speaking and writing skills of students. Combined feedback from AI and teacher

input contribute to improved grammatical and composition accuracy among students, thereby enriching the support providing by educators (Jamshed et al., 2024). AI integration in phonetic training also enabled Colombian teachers to recognize stress patterns and accordingly adjust teaching practices to enhance the pronunciation and fluency of students (Bohórquez et al., 2024). Teachers are also including AI chatbots as assistants to provide primary school students with opportunities to engage in one-on-one language practice to enhance their oral proficiency (Yuan, 2023). It emphasizes the influence of AI tools on pedagogical practices, leading to adaptive learning paths, personalized learning, and immediate feedback to enhance language learning outcomes.

AI integration for gamification of learning has enabled teachers to develop higher motivation, learner engagement and autonomous learning. Educators use Kahoot, Duolingo, Quizlet and ChatGPT to foster learner autonomy and support vocabulary development for higher self-efficacy and positive attitude towards language learning (Jomaa et al., 2024). Additionally, AI chatbots are being integrated into the teaching-learning process, which enables teachers to reduce anxiety among learners. Educators' integration of AI through chatbots in reading comprehension exercises contributed to reducing reading anxiety among students and enhanced their language confidence in solving texts and language questions (Wiyaka et al., 2024). While speaking-related anxiety were addressed through AI integration in the oral training programs in a primary school in Colombia. Teachers were able to provide students with the judgement-free environment with the help of chatbots to exercise language skills and obtain immediate feedback, leading to corrective measures and improved language proficiency (López-Minotta et al., 2025). However, teaching outcomes are also restricted as teachers are concerned about issues related to overreliance on AI, inaccurate information provided by AI, and data privacy (Bohórquez et al., 2024; Zakarneh et al., 2025). It emphasizes the need to provide educators with professional training to support the ethical and meaningful integration of AI tools in teaching the English language. It will ensure a balance between AI and human interaction for regulating pedagogical implications and enhancing language proficiency, learning autonomy, and student engagement (Jomaa et al., 2024; Wiyaka et al., 2024; Zakarneh et al., 2025).

Discussion

AI tools are instrumental in assisting teachers in content development, lesson planning and assessment at both university and K-12 levels (Nugroho et al., 2024; Williyan et al., 2024). It has contributed to a shift from conventional instructional resources to AI- powered learning materials through diverse platforms and tools like Magicschool.ai, ChatGPT and You.com to develop engaging and culturally sensitive lessons. It resonates with literature supporting AI-based lesson planning for enhancing understanding of difficult concepts and improving student motivation (Şimşek, 2025; Rutherford et al., 2025). Learner autonomy and engagement is also enhanced through structured writing and reading experiences using Linggle Write and Linggle Read (Hsiao & Chang, 2024). It emphasizes the need for an AI-based adaptive learning environment to enhance self-regulation and retention among students (Rad, 2025).

Teachers are developing personalized learning materials aligned with learner needs through AI integration in pedagogical models (Zaim et al., 2024). It aligned with research reflecting the use of AI in teaching problem-based learning to students to enhance their clinical judgment

and competency (Naseer et al., 2025; Hui et al., 2025). Nonetheless, the role of AI in grading and assessment is arguable as CoGrader does provide objective and timely feedback but considerable skepticism exists concerning its ability to evaluate nuanced writing skills (Alsalem, 2024). It reinforces that AI-based feedback lacks depth when not moderated by human instructors (Zapata et al., 2024). Moreover, AI is being integrated into instructional practices and learning environments through VAILSS and IoT Smart classrooms, respectively, to obtain real-time analytics to enhance instructional practices and provide students with multimodal learning experiences (Pai et al., 2024; Yin & Feng, 2024). Literature also emphasise that AI integration can provide personalized support and emotional regulation during language learning but educators need improved professional training and AI literacy to align current curricula with the AI-based resources and practices (Kohnke & Moorhouse, 2025; Ng et al., 2025).

English language teachers are divided in their perception and attitude concerning AI integration in their teaching practices. Although acknowledged by some as instrumental for student engagement, assessment automation, and lesson planning (Ugli, 2025; Alruwaili & Kianfar, 2025), a considerable number of teachers are skeptical based on reliability, ethical and pedagogical concerns (Mohamed, 2023; Abisheva et al., 2024). It emphasizes the contested integration of AI as teachers acknowledge its efficiency but question its influence on the originality and critical thinking skills of students (Cordero et al., 2024). Teachers believe that AI tools enable them to develop personalized learning experiences and support lesson planning and differentiation to enhance student engagement and outcomes aligned with their needs (Alruwaili & Kianfar, 2025; Mohamed, 2023). Moreover, some teachers believe that AI has significant potential to support adaptive learning and resource curation, along with assisting in autonomous language practice and self-regulated learning to enhance learner language proficiency using chatbots (Liu & Xiao, 2024; Ugli, 2025). It resonates with wider literature on AI supporting learning engagement and reducing learner anxiety through personalized learning experiences (Murtaza et al., 2025). Despite the positive perception among teachers, concern and critical approaches are reported by teachers concerning passive learning habits among learners, poor independent thinking, and increased AI reliance that can affect the learning outcomes of students (Mohamed, 2023; Alruwaili & Kianfar, 2025). Ethical concerns like the absence of regulatory policies, data privacy, and AI bias, along with the professional competency of teachers based on AI literacy, emphasize the need for professional training to promote responsible and ethical AI integration (Abisheva et al., 2024; An et al., 2022; Ng et al., 2025; Liu & Xiao, 2024). However, all educators agree that AI tools should complement human instruction to improve learning outcomes (Abisheva et al., 2024; An et al., 2022; Liu & Xiao, 2024; Mohamed, 2023).

The integration of AI by English language teachers at K—12 and university levels has positively influenced learning autonomy, engagement, and language proficiency through personalized tutoring, gamified learning, and AI-driven assessments (Jamshed et al., 2024; Jomaa et al., 2024). Chatbots and writing assistants powered by AI enable teachers to provide students with targeted feedback to enhance their composition quality and grammatical accuracy while also reducing learners' speaking and reading anxiety (Jamshed et al., 2024; López-Minotta et al., 2025; Wiyaka et al., 2024). It aligns with wider literature that acknowledges improved writing proficiency among students through AI-assisted feedback supplemented by teacher input (Zapata et al., 2024). AI is also being integrated in phonetic training and Chatbots to

provide students with one-on-one opportunities to practice language skills leading to enhanced speech accuracy, language proficiency and willingness to communicate (Bohórquez et al., 2024; Yuan, 2023). It exemplifies that AI is instrumental in developing communicative competence by addressing language learning anxiety (Kohnke & Moorhouse, 2025). Educators are also integrating AI to gamify the teaching and learning process leading to improved engagement and student motivation. Diverse platforms like Kahoot and Quizlet are used by teachers to enhance self-efficacy and vocabulary retention among students (Jomaa et al., 2024). Existing research also corroborates that learning experiences using gamified AI tools contribute to sustained engagement and intrinsic motivation (Rad, 2025).

Limitations

Although this SLR provides considerable insight considering the integration of AI tools in English Language teaching at K-12 and in the university context, it has its own limitations. Primarily, the study did not consider the institutional policies and educational systems that can influence teachers' perception and adoption of AI tools. Moreover, the study chiefly focused on teacher experiences and expertise, which prevented exploring student perceptions and concerns that also influence teaching practices.

Future Research

Future research can be conducted through primary research to understand the experiences and perceptions of teachers regarding AI integration, along with understanding student engagement and the effectiveness of AI tools. Moreover, longitudinal research can be conducted to understand the sustained influence of AI toll integration on enhancing teaching and learning proficiency and provide insight into lasting benefits attained through AI. Research should also be conducted in assessing the ethical and pedagogical challenges experienced by teachers in the AI integration so that viable and relevant measures can be identified for addressing them.

Conclusion

The integration of AI in English language teaching is transforming pedagogical integration, perception, and attitudes of teachers along with teaching and learning outcomes. Teachers integrate AI tools for developing interactive learning, personalized instruction, lesson planning, and automated assessments from K-12 to university levels, resulting in reduced learning anxiety, improved proficiency, and higher learner engagement. Although a considerable number of teachers demonstrate a positive perception towards AI tool integration, some teachers are also concerned and skeptical regarding AI literacy gaps, ethical risks, over-reliance, and AI reliability. It emphasizes the need for professional training and improved AI literacy among teachers to promote responsible and ethical leveraging of AI tools. Moreover. AI integration has supported language learning, but there is still a need for effective collaboration between humans and AI to enhance teaching and learning outcomes.

Theoretical Significance

The research is instrumental in developing a theoretical understanding of the pedagogical integration of AI for teachers with reference to frameworks like the ADDIE model, UTAUT and Activity Theory to examine the influence of AI on instructional design in ELT. It systematically categorises the usage of AI tools for lesson planning, learner engagement and assessment automation to deepen scholarly knowledge and bridge the gap between theoretical models

and practical classroom application. It also emphasizes the nuanced tensions in teacher attitudes by balancing AI affordances with concerns about ethical integrity and over-reliance to foreground the need for a holistic and theory-informed teacher development. The synthesis of 21 empirical articles in university and K-12 context reviews the role of AI as a technological intervention as well as a catalyst for re-evaluating conventional pedagogical paradigms to redefine the evolving role of teachers in an educational context that is increasingly being driven by algorithms.

Contextual Significance

The study is relevant contextually given the increasing adoption of generative AI in the global education system post-pandemic. It emphasises on ELT in university and K-12 contexts to provide a comparative understanding of AI integration across varied educational levels and regions. The findings present real-world limitations like low AI literacy, institutional unpreparedness and ethical ambiguity. Moreover, it also highlights AI's potential to mitigate persistent challenges like workload reduction, content personalization and learner anxiety. The study synthesises varied attitudes and experiences of teachers between 2020-2025 to provide actionable evidence for curriculum designers, educational leaders and policymakers. It underlines the significance of context-sensitive AI training, the need for regulatory frameworks and infrastructure readiness to ensure sustainable, responsible and equitable AI integration in ELT classrooms.

References

Abisheva, C., Aykenova, R., Idrissova, M., Umirzakova, L., Irgebaeva, N., Koldasbaeva, Z., Nossiyeva, N., Aipova, A., Doldinova, S., & Smoilov, S. (2024). Formation of ethical competences for AI use in English foreign language teachings. *Qubahan Academic Journal, 4*(4), 191–205. https://doi.org/10.48161/qaj.v4n4a1256

Aljabr, F. S., & Al-Ahdal, A. A. M. H. (2024). Ethical and pedagogical implications of AI in language education: An empirical study at Ha'il University. *Acta Psychologica, 251*, 104605. https://doi.org/10.1016/j.actpsy.2024.104605

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

Alsalem, M. S. (2024). EFL teachers' perceptions of the use of an AI grading tool (CoGrader) in English writing assessment at Saudi universities: An activity theory perspective. *Cogent Education, 11*(1). https://doi.org/10.1080/2331186x.2024.2430865

An, X., Chai, C. S., Li, Y., Zhou, Y., Shen, X., Zheng, C., & Chen, M. (2022). Modeling English teachers' behavioral intention to use artificial intelligence in middle schools. *Education and Information Technologies, 28*(5), 5187–5208. https://doi.org/10.1007/s10639-022-11286-z

Bohórquez, V., Jung, H., & Sandoval, A. (2024). Unlocking English proficiency: Transforming the English learning curriculum for Colombian middle schoolers with IPT powered by ELSA's AI-assisted app & ASR1. *Lengua y Sociedad, 23*(2), 985–1020. https://doi.org/10.15381/lengsoc.v23i2.26999

Cheah, Y. H., Lu, J., & Kim, J. (2025). Integrating generative artificial intelligence in K-12 education: Examining teachers' preparedness, practices, and barriers. *Computers and Education: Artificial Intelligence*, *6*, 100363. https://doi.org/10.1016/j.caeai.2025.100363

Cordero, J., Torres-Zambrano, J., & Cordero-Castillo, A. (2024). Integration of generative artificial intelligence in higher education: Best practices. *Education Sciences, 15*(1), 32. https://doi.org/10.3390/educsci15010032

Dhamija, A., & Dhamija, D. (2024). Understanding teachers' perspectives on ChatGPT-generated assignments in higher education. *Journal of Interdisciplinary Studies in Education, 13*(2). https://doi.org/10.32674/ptf9yd75

Hsiao, J.-C., & Chang, J. S. (2023). Enhancing EFL reading and writing through AI-powered tools: Design, implementation, and evaluation of an online course. *Interactive Learning Environments, 32*(9), 4934–4949. https://doi.org/10.1080/10494820.2023.2207187

Hui, Z., Zewu, Z., Jiao, H., & Yu, C. (2025). Application of ChatGPT-assisted problem-based learning teaching method in clinical medical education. *BMC Medical Education, 25*(1). https://doi.org/10.1186/s12909-024-06321-1

Jamshed, M., Ahmed, A. S. M. M., Sarfaraj, M., & Warda, W. U. (2024). The impact of ChatGPT on English language learners' writing skills. *International Journal of Interactive Mobile Technologies, 18*(19), 18–36. https://doi.org/10.3991/ijim.v18i19.50361

Jomaa, N., Attamimi, R., & Al Mahri, M. (2024). The use of artificial intelligence (AI) in teaching English vocabulary in Oman: Perspectives, teaching practices, and challenges. *World Journal of English Language, 15*(3), 1. https://doi.org/10.5430/wjel.v15n3p1

Kohnke, L., & Moorhouse, B. L. (2025). Enhancing the emotional aspects of language education through generative artificial intelligence (GenAI): A qualitative investigation. *Computers in Human Behavior, 139*, 108600. https://doi.org/10.1016/j.chb.2025.108600

Kohnke, L., Zou, D., & Su, F. (2025). Exploring the potential of GenAI for personalised English teaching: Learners' experiences and perceptions. *Computers and Education: Artificial Intelligence,* 100371. https://doi.org/10.1016/j.caeai.2025.100371

Liu, X., & Xiao, Y. (2024). Chinese university teachers' engagement with generative AI in different stages of foreign language teaching: A qualitative enquiry through the prism of ADDIE. *Education and Information Technologies*. https://doi.org/10.1007/s10639-024-13117-9

López-Minotta, K. L., Chiappe, A., & Mella-Norambuena, J. (2025). Implementation of artificial intelligence to improve English oral expression. *Multidisciplinary Journal of Educational Research, 15*(1), 43–71. https://doi.org/10.17583/remie.16188

Mohamed, A. M. (2023). Exploring the potential of an AI-based chatbot (ChatGPT) in enhancing English as a foreign language (EFL) teaching: Perceptions of EFL faculty members. *Education and Information Technologies, 29*(3), 3195–3217. https://doi.org/10.1007/s10639-023-11917-z

Mohammed, S. J., & Khalid, M. W. (2025). Under the world of AI-generated feedback on writing: Mirroring motivation, foreign language peace of mind, trait emotional intelligence, and writing development. *Language Testing in Asia, 15*(1). https://doi.org/10.1186/s40468-025-00343-2

Murtaza, M., Cheng, C.-T., Albahlal, B. M., Muslam, M. M. A., & Raza, M. S. (2025). The impact of LLM chatbots on learning outcomes in advanced driver assistance systems education. *Scientific Reports, 15*(1). https://doi.org/10.1038/s41598-025-91330-3

Naseer, M. A., Saeed, S., Afzal, A., Ali, S., & Malik, M. G. R. (2025). Navigating the integration of artificial intelligence in the medical education curriculum: A mixed-methods study exploring the perspectives of medical students and faculty in Pakistan. *BMC Medical Education, 25*(1). https://doi.org/10.1186/s12909-024-06552-2

Ng, D. T. K., Chan, E. K. C., & Lo, C. K. (2025). Opportunities, challenges and school strategies for integrating generative AI in education. *Computers and Education: Artificial Intelligence,* 100373. https://doi.org/10.1016/j.caeai.2025.100373

Nugroho, A., Putro, N. H. P. S., Syamsi, K., Mutiaraningrum, I., & Wulandari, F. D. (2024). Teacher's experience using ChatGPT in language teaching: An exploratory study. *Computers in the Schools*, 1–20. https://doi.org/10.1080/07380569.2024.2441161

Pai, H.-Y., Wang, C.-H., & Lai, Y.-C. (2024). Development of an interactive live streaming system for language learning. *Journal of Internet Technology*. https://jit.ndhu.edu.tw/article/view/3010

Rad, H. S. (2025). Reinforcing L2 reading comprehension through artificial intelligence intervention: Refining engagement to foster self-regulated learning. *Smart Learning Environments, 12*(1). https://doi.org/10.1186/s40561-025-00377-2

Rutherford, T., Rodrigues, A., Duque-Baird, S., Veng, S., Mykyta-Chomsky, R., Cao, Y., Chisholm, K., & Bergwall, E. (2025). "I just think it is the way of the future": Teachers' use of ChatGPT to develop motivationally-supportive math lessons. *Computers and Education: Artificial Intelligence, 6*, 100367. https://doi.org/10.1016/j.caeai.2025.100367

Şimşek, N. (2025). Integration of ChatGPT in mathematical story-focused 5E lesson planning: Teachers and pre-service teachers' interactions with ChatGPT. *Education and Information Technologies*. https://doi.org/10.1007/s10639-024-13258-x

Trindade, M. A. M., Edirisinghe, G. S., & Luo, L. (2024). Teaching mathematical concepts in management with generative artificial intelligence: The power of human oversight in AI-driven learning. *The International Journal of Management Education, 23*(2), 101104. https://doi.org/10.1016/j.ijme.2024.101104

Ugli, A. M. B. (2025). Understanding Uzbekistan university EFL teachers' perceptions of ChatGPT: From benefits to ethical challenges. *International Journal of Information and Education Technology, 15*(2), 246–254. https://doi.org/10.18178/ijiet.2025.15.2.2238

Williyan, A., Fitriati, S. W., Pratama, H., & Sakhiyya, Z. (2024). AI as co-creator: Exploring Indonesian EFL teachers' collaboration with AI in content development. *Teaching English with Technology*. https://doi.org/10.56297/vaca6841/lrdx3699/rzoh5366

Wiyaka, W., Silitonga, L. M., Sunardi, S., & Pramudi, Y. T. C. (2024). From nervous to fluent: The impact of AI chatbot-assisted assessment on English reading anxiety and performance in Indonesia. *Theory and Practice in Language Studies, 14*(12), 3851–3860. https://doi.org/10.17507/tpls.1412.20

Yin, Y., & Feng, H. (2024). Intelligent IoT devices and data analytics as a guide to enhancing the effectiveness of English language teaching and learning. *Applied Mathematics and Nonlinear Sciences, 9*(1). https://doi.org/10.2478/amns-2024-3096

Yuan, Y. (2023). An empirical study of the efficacy of AI chatbots for English as a foreign language learning in primary education. *Interactive Learning Environments*, 1–16. https://doi.org/10.1080/10494820.2023.2282112

Zaim, M., Arsyad, S., Waluyo, B., Ardi, H., Al Hafizh, M., Zakiyah, M., Syafitri, W., Nusi, A., & Hardiah, M. (2024). AI-powered EFL pedagogy: Integrating generative AI into university teaching preparation through UTAUT and activity theory. *Computers and Education: Artificial Intelligence, 7*, 100335. https://doi.org/10.1016/j.caeai.2024.100335

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), 364. https://doi.org/10.5430/wjel.v15n3p364

Zapata, G. C., Saini, A., Tzirides, A.-O., Cope, W., & Kalantzis, M. (2024). The role of AI feedback in university students' learning experiences: An exploration grounded in activity theory. *Ubiquitous Learning: An International Journal, 18*(2), 1–30. https://doi.org/10.18848/1835-9795/cgp/v18i02/1-30