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Artificial Intelligence in English Language Education in Iraq: A Review study of Interventions and Perceptions

ABSTRACT

AI in teaching English is reshaping language learning. While interest in AI-supported education is growing worldwide, research in this area is still emerging in Iraq. This review synthesizes empirical AI-based intervention studies to enhance English language learning in Iraqi higher education, and the perceptions of stakeholders regarding AI tools in language instruction. The reviewed intervention studies, comprising studies employed different AI platforms to support grammar instruction, speaking fluency, writing feedback, and pragmatic competence. These interventions yielded improvements in learners' performance, motivation, and communicative confidence. In parallel, perception-focused studies revealed positive attitudes toward AI's potential, and also highlighted persistent challenges, including insufficient infrastructure, limited digital training, and concerns over pedagogical alignment. The synthesis underscores both the promise and limitations of AI integration. It advocates for contextually grounded, methodologically rigorous research while emphasizing the need for investment in digital readiness and educators' support to ensure equitable and sustainable AI adoption in language education.

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الذكاء الاصطناعي في تعليم اللغة الإنجليزية في العراق

: مراجعة للدراسات التطبيقية والانطباعات

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المُستخلص

دمج الذكاء الاصطناعي في تعليم اللغة الإنجليزية يعيد تشكيل طرق تعلم اللغة. وبينما يزداد الاهتمام بالتعليم المدعوم بالذكاء الاصطناعي عالمياً، لا تزال الأبحاث في هذا المجال محدودة في العراق. تستعرض هذه الورقة دراسات تجريبية طبقت أدوات الذكاء الاصطناعي لتحسين تعلم الإنجليزية في التعليم العالي العراقي، إلى جانب تصورات المعنيين حول هذه الأدوات. اشتملت الدراسات على أدوات مختلفة لدعم تعليم القواعد، الطلاقة في التحدث، التغذية الراجعة الكتابية، والكفاءة التداولية، وأسفرت عن تحسن في الأداء والدافعية والثقة التواصلية. كما كشفت دراسات التصورات عن مواقف إيجابية تجاه الذكاء الاصطناعي، لكنها سلطت الضوء أيضاً على تحديات مستمرة مثل ضعف البنية التحتية، وقلة التدريب الرقمي، ومخاوف تتعلق بملاءمة الأدوات للمناهج. تؤكد هذه المراجعة الفرص والقيود المرتبطة بدمج الذكاء الاصطناعي، وتدعو إلى أبحاث أكثر صلة بالسياق المحلي وأكثر صرامة منهجية، مع ضرورة الاستثمار في الجاهزية الرقمية ودعم المعلمين لضمان اعتماد منصف ومستدام لهذه التكنولوجيا.

الكلمات المفتاحية : تصورات المعلمين، تصورات المتعلمين، الذكاء الاصطناعي، اللغة الإنجليزية بوصفها لغة أجنبية(EFL)

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1.Introduction

The integration of Artificial Intelligence (AI) into English language education is transforming how English is taught and learned. As AI technologies continue to advance and become more accessible, they are increasingly shaping English as a Foreign Language (EFL) classrooms (Haristiani, 2019). In this context, AI refers to computer-based systems capable of performing tasks that typically require human intelligence, such as natural language understanding, adaptive feedback, and predictive analytic. The scope of AI in this review focuses on intelligent applications that actively guide or respond to learners, including smart tutors, predictive learning analytics, automated speech recognition tools, and AI-driven feedback systems. These tools support personalized, interactive, and data-informed learning experiences (Wang et al., 2021, 2024; Zhai et al., 2022; Son et al., 2023). Growing research in this area not only explores the capabilities of AI tools but also examines learners' and educators' perceptions, which significantly influence their adoption and effectiveness (Kizilcec, 2024; Vázquez et al., 2024).

Recently, global scholarly interest in the role of artificial intelligence in language education has steadily increased since 1998, with over 5,000 publications by the end of 2025. In Iraq, academic interest in this area

began somewhat recently, in 2021, with approximately 30 studies related to this field; such a stark contrast signifies the relatively recent and developing stage of AI integration into the country's English as a Foreign Language (EFL) paradigm. This study highlights the urgency of systematically mapping existing interventions for their pedagogical and affective outcomes, along with putting forward actionable pathways for ensuring more inclusive, sustainable, and contextually appropriate AI implementation in educational settings in Iraq.

AI in learning ties into basic learning ideas, like sociocultural theory (Vygotsky, 1978), constructivist ideas (Jonassen & Rohrer-Murphy, 1999), and interaction models of learning (Long, 1996). AI tools now reflect these ideas: chatbots mimic talks, writing tools give custom feedback, and speech apps check speaking in real-time. These help students learn on their own, tailor their learning paths, and focus on feedback-based skill growth, fitting with active and student-focused teaching in tech-supported learning (TELL) settings (Tanashchuk et al., 2024; Grace et al., 2023; Woolf et al., 2013).

In the MENA (Middle East and North Africa) area, and in Iraq, AI in teaching is still new. Years of underfunding and neglect have severely impacted schools in the area. (Selwyn, 2022. However, there is a shift to digital methods post-pandemic. Some Iraqi schools are trying AI tools in English classes (Al-Ali, 2025), using grammar checkers, writing aids, speech training, and AI-based learning systems (Abdulhussein et al., 2025; Kucuk, 2024; Mohammed & Khalid, 2025). Yet, there is a dearth of studies in this field (Abed et al., 2024; Alfuraiji, 2024). When AI tools are used in schools, how they work and how students and teachers view them are key in how well they are used. Belief in AI, its usefulness, ease, and confidence affects its uses and results (Marshik et al., 2024; Zhou et al., 2024).

Scholars call for deeper, local studies on AI in language teaching. Canagarajah (1999) urged fitting global AI teaching to local needs, examined the way it changed or accepted in many language places. Pennycook (2001) also called for looking at how language teaching fits in social, culture, and political areas. Kern (2014) stressed looking at how AI experience works with local school ways. Studying AI's role in English learning in Iraq is to see how innovations fit into local schooling. Such work is crucial to shape inclusive and apt teaching plans in AI-backed language learning. It ensures AI tools meet students' needs, wants, and goals (Al-Oadah et al., 2024). Till now, no full review shows how AI aids EFL teaching in Iraq, from both intervention and perception-based studies. Without such a look, it ishard to know how schools use AI, what results come, how students and teachers see these tools, or what issues they face in use. A dual view study is key to spot promising methods and shed light on blocks to fix for AI's full use in English teaching.

Therefore, this review addresses these needs by systematically analyzing the body of empirical research on the use of artificial intelligence in English language education in Iraq. The objectives of the study are:

1. Synthesizing the studies that Implementing AI technologies in English language instruction.
2. Examining the studies that have adressed learner perceptions and challenges associated with AI interventions.

Though the preliminary review was undertaken within a limited number of studies' confines, successive searches have reported increased numbers of empirical works.

1.2 Methodology of the Study

The first review was limited in its studies, but an ongoing search and screening brought to light more and more empirical work. A total of thirteen studies were deemed eligible, seven of them dealing with the experimental or quasi-experimental use of AI for improving EFL outcomes while six considered perceptions of AI tools in Iraqi language educational settings from the point of view of the learners and educators. The studies on perception, based on survey data, interviews, and mixed methods, presented evidence on perceived usefulness, motivation, and digital readiness, as well as key constraints, including access, training, and curriculum alignment. The wider coverage strengthens the review's comprehensiveness and allows for more thematic analysis, bringing together both the performance outcome and contextual realizations of implementation.

2.1 Research Design and Methodology

The investigation was conducted by systematically reviewing AI application in teaching English as a second language in Iraq using a thematic synthesis approach. The review is established on structured search processes through numerous academic discovery platforms, including Elicit, Lens.org, Dimensions.ai, as well as manual searches in Google Scholar and Semantic Scholar, ensuring wide and inclusive reach of the peer-reviewed literature.

2.2 Search Strategy and Procedures

Two complementary search strands were developed:

- **Strand 1: AI Implementation in English Language Education**

- **Strand 2: Perceptions and Perceived Challenges Toward AI in Language Learning**

They allowed the review to capture both the **pedagogical applications** and the **attitudinal dimensions** associated with their integration in Iraqi educational contexts. To guide the review a dual-strand search strategy was developed. Each strand was designed to align with one of the objectives and guide the selection of relevant literature. The main search queries were as follows:

- **Strand 1**: *"How does artificial intelligence improve language learning and teaching in Iraq?"*
- **Strand 2**: *"Perceptions of artificial intelligence in language education in Iraq"*

Boolean logic was applied to refine the search scope:

Aspect	Strand 1: Implementation of AI	Strand 2: Perception of AI
Databases	Elicit, Lens.org, Dimensions.ai, Google Scholar	
Period Covered	Not Assigned	
Boolean Structure	"AI" OR "artificial intelligence" AND "English language learning" AND "Iraq"	"perception" OR "attitude" AND "AI" AND "language learning" AND "Iraq"
Search Fields	Titles and abstracts	
Language	English	
Inclusion Type	quantitative, qualitative, or mixed methods	

Studies were selected based on predefined inclusion criteria aligned with the two search strands. For Strand 1 (AI intervention studies), eligible papers were those conducted in Iraq, involving Iraqi learners or institutions; focused on AI tools or intelligent tutoring systems; employed quantitative, qualitative, or mixed methods; and were published in English with direct relevance to English language education. For Strand 2 (perception studies), inclusion required a focus on learners' or educators' perceptions of AI use in English language teaching in Iraq and the use of empirical data collection methods such as surveys or interviews.

2.4 Screening and Selection Process

The screening followed PRISMA principles:

- An initial corpus of approximately 50 records was identified across platforms.
- Title and abstract screening excluded conceptual, non-Iraqi, or non-AI-related studies.

- Full-text reviews ensured alignment with the review's inclusion criteria.
- A total of **13 studies** were included: **7 empirical intervention studies** and **6 perception-focused studies.**

2.5 **Analytical Framework**

The analytical approach consisted of **thematic synthesis** to extract insights from the selected studies across both strands. Key themes explored included:

- The types of AI tools implemented;
- Pedagogical settings and learner skill focus (e.g., grammar, speaking, pragmatics);
- Learner and teacher attitudes toward AI;
- Reported challenges to implementation.

Eventually, (30) empirical studies were included in which, seven were situational experiments or quasi-experiments of interventions related to AI for bringing in more effective outcomes in English as a foreign language. The other six were perception studies concerning learners and instructors in Iraq. The latter are based on survey results, interviews, and mixed research designs that provide data on perceived usefulness, motivation, and digital readiness and salient challenges concerning access, training, and alignment to curriculum; and, as such, allows deeper analysis of review and broader thematic analysis that focuses on performing outcomes as well as implementation realities in context.

3. Results

3.2 Thematic Insights from Reviewed Studies

3.2.1 AI Interventional Studies

This section brings together outcomes of seven empirical studies that examined AI interventions in the practice of improving the English language in Iraq. The studies were conducted across various areas and institutions, which speaks to the varied educational contexts and pedagogical strategies. In terms of commonality, interventions are clustered around two thematic concerns: (a) AI for speaking and pronunciation training, and (b) AI-supported grammar, writing, and pragmatics instruction.

3.2.1.1 AI for Speaking and Pronunciation Skill Development

AI-based speech and pronunciation training tools have been proliferated as advanced ways to help students become more fluent speakers. This way of learning is becoming widely adopted in a variety of sites inside Iraq and around the world; learners can now learn organically with all the corrections possible because AI provides real-time feedback in the digital world, which can also include a real native English accent. When combined with the ability to multi-task and freely practice with the speech developments, learners benefits from tools such as Automatic Speech Recognition (ASR) technology. These tools also support video recording and create new pronunciation text recitations using AI tools and having less correction through the AI tool as recording then transcription is possible. The interventions focus on correcting features of prosody, intonation, rhythm, and accent too as many students have difficulties correcting such features in a basic classroom format.

For instance, Abdulhussein et al. (2025) explored the impact of AI-mediated speaking assessment on the speaking performance and Communication Willingness (WTC) of intermediate Iraqi EFL learners. The authors' sample included forty students who were randomly assigned to experimental and control conditions. The experimental learners had ten 60-minute sessions, using ELSA Speech Analyzer, but the control learners had no intervention. A concluding speaking rubric was created from the test/semester rubric that implemented grammar, vocabulary, intonation, pronunciation, and fluency. The results confirmed that the experimental learners made significant alterations in grammar, vocabulary, intonation, and fluency; no noteworthy changes in pronunciation. The predictable finding from the intervention was a remarkable positive difference to the learner's willingness to communicate (WTC) across contexts, with native speakers and non-native speakers, and at school. These findings suggest that AI-mediated speaking assessment has some promise not only to support language development, but also the communicative confidence and motivation of these learners.

In another similar case, Razoqey (2024) implemented Murf AI, an application that can convert written text to natural-sounding speech, for enhancing the speaking skills of third-year Iraqi EFL college students at the University of Diyala. The purposive sample consisted of 68 students who were randomly assigned to either the experimental group (n = 35) who received instruction through Murf AI, or to the control group (n = 33) who received traditional instruction. Pre-tests and post-tests were given, with both the test content and the lesson plans for the experimental group validated by subject-matter experts prior to the intervention. The experimental group took part in ten speaking tutorials using AI in an instructional manner where the students created speech content using Murf's text-to-speech features which gave them access to model pronunciation

and intonation so that they could hear how to speak. There were statistically significant developments on the speaking performance of the experimental group, specifically fluency, rhythm, and pacing. Because of the intervention, the experimental group experienced a reduction in learners' anxieties, and more learner agency and personalized learning experiences occurred. The authors concluded that Murf AI is a flexible and effective tool for developing speaking fluency and learner engagement. However, they called for further research in other stages and across subject areas.

3.2.1.2 AI-Enhanced Grammar, Writing, and Pragmatic Instruction

AI tools have demonstrated significant potential in enhancing grammar acquisition, written expression, and even pragmatic competence in Iraqi EFL contexts. The reviewed studies show that these tools do not only improve test performance but reshape learner motivation and cognitive engagement with language tasks.

Kucuk (2024) investigated the effectiveness of integrating ChatGPT into grammar instruction for EFL learners at Tishk International University. In this quasi-experimental study, students were randomly assigned to control and experimental groups. The control group participated in traditional, teacher-led instruction, while the experimental group experienced seven weeks of grammar learning that was ChatGPT-centering. The results from the post-test, analyzed in SPSS, indicated there was a statistically significant difference in the mean scores, with the control group improving the least and the experimental group improving the most. Focus group interviews indicated that the majority of students were happy that ChatGPT was embedded into the learning, stated that it improved their understanding of grammar and allowed them to engage more effectively. While the focus group raised some concerns, specifically regarding students being inappropriately reliant upon ChatPT or potentially being in an initial period of excitement with the use of the tool, the study's overall finding indicates that the pedagogical support that ChatGPT provides with grammar instruction has far surpassed any potential downsides. These findings corroborated the overall conclusions from this current study that AI-embedded platforms can increase learners' confidence, accuracy, and interaction levels within the classroom.

Mohammed and Khalid (2025) reported in a mixed-method quasi-experimental study based on the complex influence on AI-generated feedback on English as a Foreign Language (EFL) learners. The focus of the research was based on four main dimensions: writing development, engagement, foreign language peace of mind (FLPoM), and trait emotional intelligence (EI). The study was conducted with 322 EFL learners from

Nawroz University, Iraq, who were randomly divided into two groups. The experimental group received AI-generated feedback via ChatGPT and the control group received traditional instruction. Their findings reflected that AI-generated feedback had a statistically significant positive impact on improving learners' English writing. The authors concluded that integrating AI in educational settings holds substantial promise for linguistic growth among EFL learners.

Vadivel et al. (2024) analyzed the relevance of Artificial Intelligence (AI) in language learning, particularly English language learning, and called attention to its usage in classrooms and improvements in language learning, language comprehension, and language fluency. The three key applications of AI mentioned in their study were: Natural Language Processing (NLP), adaptive learning systems, and gamification. NLP tools (such as a chatbot or virtual tutor) offer Grammar, Vocabulary, and Pronunciation practice interactively, provide instant feedback to learners, and encourage engagement. Adaptive learning systems use machine learning algorithms to produce content and exercises to meet individual learners' language learning proficiency levels. Using gamification and interactive tools is noted as a motivational strategy that uses engagement by incorporating examples like virtual reality and interactive exercises for language learning. The study used a mixed-method approach to combine quantitative data with qualitative data. The study did not present the number of research participants or physically how the study took place in the Iraq context. The quantitative results produced statistically significant differences with improvements in grammar accuracy, vocabulary development, improvements in reading comprehension, speaking fluency and writing fluency. The surveys and interviews produced more qualitative data that included positive perceptions from educators and students regarding AI in language learning, which emphasized AI's ability to create custom-based and stimulating learning experiences. However, challenges such as accessibility to technology and the need for teacher training are identified, underscoring the importance of equitable access and professional development for effective AI integration in language education. Overall, the study underscores AI's potential to revolutionize English learning and offers recommendations for its broader implementation. The Vadivel et al. (2022) study, while it provides useful insights, contains a number of limitations that deserve to be critically considered. First, it does not explicitly state the institution that the study is based on. Importantly, the study lacks specificity regarding the AI tools employed; it discusses AI in general terms rather than explicitly detailing AI-driven platforms or applications. This lack of clarity makes it difficult to assess the intervention's alignment with contemporary AI frameworks. Consequently, while the study contributes to understanding the

broader context of digital learning adoption, its relevance to AI-specific pedagogical interventions is limited and should be interpreted with caution in reviews focused on artificial intelligence in language education.

In a different direction, Alfuraiji (2024) conducted a mixed-methods study evaluating the effectiveness of AI-supported pragmatics instruction among Iraqi university students with intermediate English proficiency. Utilizing a pre-test/post-test design, 100 students were randomly assigned to either an experimental group, which engaged with an AI tool simulating real-life communicative scenarios, or a control group receiving traditional instruction. The AI intervention emphasized interactive practice and personalized feedback in pragmatics, allowing learners to refine their ability to respond appropriately in diverse social contexts. Quantitative results showed a statistically significant improvement in pragmatic competence for the experimental group (mean gain = 16.2) compared to the control group (mean gain = 6.6). Students found value in the use of contextualized knowledge in a low-stakes, simulated environment. Overall, the study indicates the potential of using artificial intelligence to further bridge the gap between theoretical pragmatics instruction and practical competencies in the natural world, while confirming the relevance of design-based and culturally-relevant content in the use of artificial intelligence in language learning. The study does have a major shortcoming in that it was not described clearly enough the AI tool used, which may limit replicability and may not allow readers to consider or assess the technological veracity of the interventions. Future studies should clearly describe which AI systems are used to ensure transparency and comparability across studies.

Al-Ali (2025) also had a focus on translation students using AI tools like DeepL and ChatGPT, with an emphasis on vocabulary development and improvement in reading comprehension, with caveats against reliance on AI. In summary, the studies together demonstrated that systems that use AI are useful for not only structural aspects of language, but also for communicative competence and emotional preparedness.

Table 1 presents a summary of the AI-based studies included in this review, detailing the tools employed, targeted language skills, research designs, sample sizes, institutional contexts, and key findings. The table highlights a range of AI tools, such as ELSA, Murf AI, ChatGPT, and DeepL, used to support language development across different domains including speaking, grammar, writing, translation, and pragmatic competence. Collectively, the studies demonstrate the potential of AI to enhance linguistic performance, learner engagement, and emotional regulation in diverse Iraqi EFL contexts.

3.2.1.3 Distribution of AI Tools in Reviewed Intervention Studies

The reviewed intervention studies on AI in English language learning in Iraq reveal a strong inclination toward generative and assistive technologies, particularly those that facilitate feedback, fluency development, and learner engagement. ChatGPT emerged as the most widely adopted tool, appearing in half of the studies, where it was used for grammar instruction, personalized feedback on writing, and enhancing vocabulary and translation capabilities. Tools like ELSA Speech Analyzer and Murf AI were employed to improve speaking skills, ELSA through automated feedback on pronunciation and fluency, and Murf AI through text-to-speech functionalities that helped reduce learners' speaking anxiety. Translation-focused tools such as DeepL and Gemini were integrated to support vocabulary development and reading comprehension, particularly within academic and technical English. Additionally, NLP-based systems were used in adaptive instruction across various language skills, contributing to enhanced learner autonomy and performance outcomes. These findings highlight the increasing diversity and strategic use of AI in Iraqi EFL contexts, particularly in response to learners' needs for personalized, interactive, and context-sensitive language support. See Figure 2.
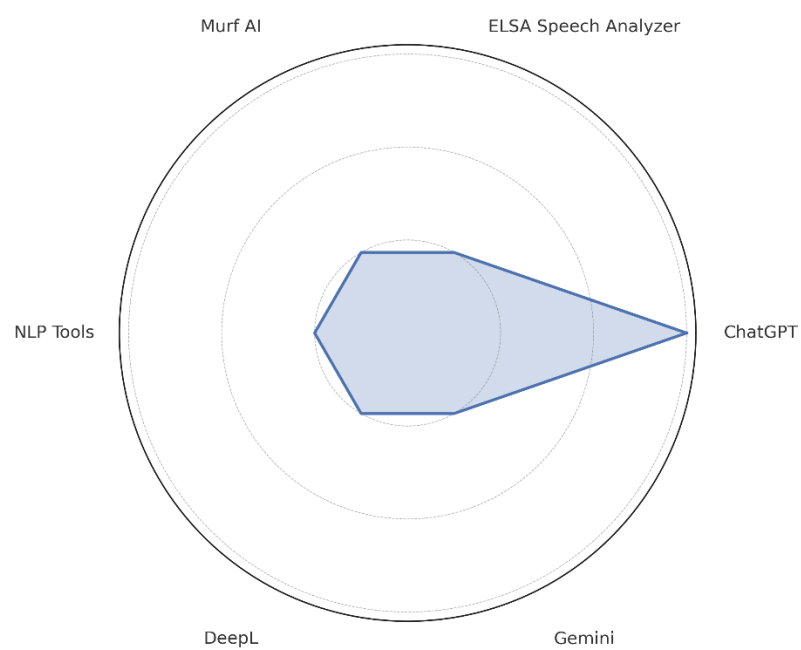
Figure 2: AI Tools in Reviewed Intervention Studies

Table 1. Summary of AI Interventions in the Reviewed Studies

Study	AI Tool Used	Language Skill Focus	Study Design	Sample	Institution	Main Outcomes
Abdulhussein et al. (2025)	ELSA Speech Analyzer	Speaking (vocabulary, grammar, pronunciation, and fluency)	Experimental	40 students	Kufa University	Improved grammar, fluency, WTC; no significant change in pronunciation
Razoqey (2024)	Murf AI	Speaking (fluency)	Experimental	68 students	University of Diyala	Improved oral fluency, reduced anxiety, enhanced engagement
Kucuk (2024)	ChatGPT	Grammar	Quasi-experimental	60 students	Tishk International University	Significant grammar improvement, high student satisfaction
Mohammed & Khalid (2025)	ChatGPT	Writing, motivation, foreign language peace of mind (FLPoM), trait emotional intelligence (EI).	Quasi-experimental	322 students	Nawroz University	Enhanced writing performance and emotional regulation
Vadivel et al (2024)	NLP	Grammar, reading, vocabulary	Mixed-methods	N/A	N/A	Improved language skills and learner autonomy
Alfuraiji (2024)	N/A	Pragmatic competence	Experimental	100 students	Kufa University	Significant gains in pragmatic usage and communication accuracy
Al-Ali (2025)	DeepL, Gemini, ChatGPT	Translation, vocabulary, reading	Descriptive analytical	313 students	University of Basrah	Vocabulary expansion, improved reading comprehension

3.2.2 Perceptions and Reported Challenges in Applying AI in English Language Education in Iraq

3.2.2.1 Learners' and Educator Perceptions of AI Integration

In addition to the measurable outcomes of AI, it is also important to consider how educators and learners understand AI in English language education, and what barriers they face in its use so as to help contextualize its adoption and impact. In Iraq, there is a growing amount of more contemporary research examining not only perceptions of AI but importantly the barriers to its implementation in practice and at a systematic level. Integrating these perspectives, here we can begin to see the dynamism of optimism and apprehensions, potentiality and ongoing barriers presented by AI usage in Iraq.

A key study by Abed et al (2024) examined English language teachers' perceptions of AI usage by teachers in the context of Iraq's public school system as a qualitative case study. They utilized interviews, classroom observations, and surveys as data collection methods and found that 75% of teachers recognised that AI tools improved student engagement while 70% reported an improvement in students' language proficiency. However, they also documented considerable barriers to implementation; 63% of participants identified a lack of access to technology, and 58% noted that a lack of training was a barrier to implementing AI tools effectively. This study demonstrates a dual reality, with teachers being receptive to AI integration but some infrastructural issues and connected professional learning issues limiting the use of AI.

Similarly, Shareef (2024) examined the perceptions of 118 Kurdish EFL students at Salahaddin University regarding AI-powered platforms for grammar learning. While students praised the tools for accuracy and immediate feedback, they also expressed skepticism about relying on AI alone. Many preferred a blended approach that combines AI with traditional instruction, revealing a perception that AI should support, not replace, human-mediated teaching.

A broader international perspective, which included Iraq, is offered by Pikhart et al. (2024), who surveyed EFL students on their use of digital resources such as ChatGPT and Duolingo. The participants confirmed that such tools aided vocabulary development and learner engagement. Still, challenges like inconsistent internet connectivity and limited tool content were highlighted. These issues reflect infrastructural and content-based barriers that can hinder the sustained use of AI in educational settings. Al-Ibadi 2022 and Albadri et al. (2025) also echoed similar concerns.

At the University of Duhok, Abdulah et al. (2024) surveyed 674 postgraduate students, faculty, and alumni, finding that only 36.94% had used AI tools, primarily for paraphrasing and information retrieval. Awareness and familiarity with AI tools were generally low, though younger and postgraduate respondents showed more interest. Despite their limited experience, nearly half of participants recommended broader AI adoption. These findings emphasize the need for targeted awareness campaigns and training to address knowledge gaps.

Alfuraiji (2024) investigated learners' perceptions. Alfuraiji (2024) found evidence of positive learner perceptions of the interactivity and practical nature of the AI tool and stated that students found the personalized feedback and simulations of real-life scenarios to be valuable to their learning experiences. However, those positive perceptions also included requests for larger cultural and contextual adaptations, alongside the notion that AI tools should be relevant to the local community to be used in a meaningful way.

Lastly, Abdulhussein et al. (2025) investigated the potential for AI-mediated speaking assessment to impact learners' willingness to communicate. ELSA Speech Analyzer was seen to enhance speaking performance and communication confidence. Learners identified ELSA Speech Analyzer as easy to use and motivating because of its real-time feedback and supporting interface. This aligns with the earlier notion of perceptions being shaped by the usability of the tool and the relevance to the student's immediate academic outcomes.

Table 2 outlines key perceptions and challenges reported in studies exploring stakeholders' views on AI integration in English language education. It captures insights from both students and teachers across various Iraqi universities and public schools, reflecting generally positive attitudes toward AI's role in enhancing language proficiency, motivation, and personalized learning. However, recurring challenges such as limited technological infrastructure, lack of training, internet issues, and insufficient contextual customization indicate the need for more supportive implementation strategies and localized AI adaptation.

Table 2. Summary of AI Perception in the Reviewed Studies

Study	Population	Key Perceptions	Reported Challenges
Abed et al. (2024)	EFL Teachers in public schools	AI improves engagement and language proficiency	Limited tech access, lack of training
Shareef (2024)	EFL Students at Salahaddin University	Positive view on AI grammar tools	AI alone insufficient; prefers blended learning
Pikhart et al. (2024)	EFL Students (Iraq, Taiwan, Czech Republic)	Digital tools enhance vocabulary and engagement	Internet issues; limited content availability
Abdulah et al. (2024)	UoD faculty, students, alumni	Low awareness but strong interest in AI use	Minimal exposure to AI; limited training/infrastructure
Alfuraiji (2024)	University students (pragmatics)	Positive feedback on real-life simulation, personalization	Need for more cultural/context customization
Abdulhussein et al. (2025)	University students (speaking skills)	Increased confidence, ease of use of AI tools	No major barriers reported

3.2.2.2 Reported Challenges and Barriers to AI Integration

While the integration of artificial intelligence (AI) in English language education holds transformative potential, its implementation in the Iraqi context faces numerous barriers. The reviewed studies consistently highlighted a range of challenges that impede the effective and equitable adoption of AI technologies, spanning infrastructural, pedagogical, and attitudinal domains.

One of the most frequently cited obstacles is limited technological infrastructure. In a qualitative study conducted in Iraqi public schools, Abed et al (2024) found that 63% of English language teachers reported inadequate access to technology, and 58% cited insufficient training as major challenges. Teachers expressed positive perceptions toward AI's role in student engagement and language proficiency but emphasized that a lack of digital resources and support structures hindered implementation.

Similarly, Shareef (2024) surveyed Kurdish EFL students at Salahaddin University and found that while learners had favorable attitudes toward AI-powered grammar tools, many questioned the sufficiency of AI-based platforms as standalone solutions. Students stressed the importance of integrating AI with traditional instruction, suggesting a gap in pedagogical design and technological familiarity.

In their investigation of AI-mediated pragmatic instruction, Alfuraiji (2024) described practical issues with the fit of the tool and design features. While participants perceived the AI tool as providing

interactive and personalized feedback, they also suggested the addition of situational and cultural variations, indicating limitations of local adaptation and contextuality in current AI platforms. From a user experience lens, Pikhart et al (2024) found connection and content diversity were several continuing challenges identified by Iraqi EFL learners who used various AI tools (e.g., Duolingo, ChatGPT, and Google Translate). Although their research was transnational, they noted a need for better digital infrastructure and for content that was culturally relevant, especially for learners in under-resourced areas. Abdulah et al. (2024) surveyed 674 students studying at a postgraduate level, graduates, and faculty at the University of Duhok. They discovered only 36.94% of the respondents had used AI tools. Their research showed that knowledge of AI tools was transferred informally through conversations with friends or social media, as well as limited institutional support for AI use. Participants wanted to see more use of AI, while noting issues of limited formal engagement, generational gaps in users, and limited knowledge of AI tools.

Taken together, these studies reveal a nuanced picture of AI adoption in Iraqi English language education, one where enthusiasm about AI's potential is tempered by systemic barriers and contextual challenges. While learners and educators are generally receptive to AI's role in enhancing feedback, engagement, and personalized learning, infrastructure gaps, inadequate training, pedagogical misalignment, and cultural mismatch pose significant limitations.

These results provide an important takeaway: positive perception by stakeholders is not sufficient in providing an ongoing integration of educational AI. In different cultural contexts, beyond positive perception, there must also be the necessary technology readiness, curriculum changes, adaptation of tools for context, or implementation to foster educational change. Additionally, use of educational AI will only be possible for the transformation of learning and the English language learning process in these contexts.

4.Discussion

This section provides a broad analysis of the key findings from the studies examined and these are organized into two main themes: (1) AI-based intervention studies in English language education, and (2) Perceptions of integrating and the reported challenges of effective AI implementation in relation to the Iraqi context. These findings will also be situated within the context of global developments and

literature in order to provide a comprehensive understanding of how AI is changing the English language education landscape in Iraq.

4.1 AI-Based Interventions in English Language Education

The identified intervention studies provide strong support for the pedagogical affordances of AI technologies in teaching English language in a variety of domains, including grammar, writing, speaking and pragmatics. Technologies such as ChatGPT, ELSA, Murf AI and adaptive NLP offered measurable gains for learners for parts of fluency, grammatical accuracy, writing quality, and confidence when communicating. These outcomes align with emerging trends worldwide focusing on AI's ability to provide feedback in real time, individually tailored instruction, and personalized learning pathways (Wang et al., 2021; Zhai et al., 2022).

The reviewed studies (Abdulhussein et al., 2025; and Razoqey, 2024) used speech-based AI technologies and both reported learner engagement and speaking fluency, with the caveat that they are only part of the development in pronouncing fluency reflected in the limited iterations of teaching whether ASR has made the shift assessing prosodic features. Likewise, grammar instruction using ChatGPT (Kucuk, 2024) and automated writing assessment tools (Mohammed & Khalid, 2025), also evidenced learner's engagement; however, both developed learner motivation, which corresponds to both constructivism and sociocultural language learning perspectives. Other studies (Alfuraiji, 2024; Vadivel, 2024) also suggested that AI tools may help bridge the gap between theoretical instruction and authentic language use, especially in pragmatic contexts. These findings point to the capacity of AI to scaffold communicative competence, an area often neglected in traditional EFL classrooms.

Regarding the reviewed studies, notably absent is the use of discourse-level analysis or real-time interactional assessment, which are critical to evaluating how AI tools shape authentic communicative practices. Future research would benefit from incorporating conversation analysis or discourse analytic methods to trace learners' pragmatic and interactional development in naturalistic exchanges. To advance the field, future research must prioritize longitudinal designs, cross-institutional comparisons, and mixed-methods approaches that capture both quantitative gains and qualitative learner experiences.

4.2 Learners' and Educators Perceptions of AI

The perception-focused studies provide critical insight into the experiential and affective dimensions of AI integration in English language education in Iraq. Overall, the evidence reflects a cautiously optimistic reception of AI tools among both learners and educators. Learners particularly valued features such as immediate and adaptive feedback, interactive interfaces, and increased learning autonomy, especially in grammar and writing-focused applications (Shareef, 2024; Mohammed et al., 2023). Educators, meanwhile, recognized the potential of AI to enhance student motivation and support personalized learning, especially in large or mixed-ability classrooms (Abed et al., 2024).

Nevertheless, these positive attitudes were often coupled with ambivalence and anxiety. Students worried about potential over-dependency on AI because of a concern for "shallow" learning and a lack of human mediation. Educators frequently expressed anxiety over lack of experience and the inconsistency of AI tools with their curricular and assessment models. These tensions echo global discussions in the literature because it is common for excitement about the potential of AI and learning to be moderated by doubts about pedagogy, ethics, and epistemology (Selwyn, 2022; Holmes et al., 2022). Shareef (2024) reported that Kurdish EFL students were more interested in AI as an adjunct resource than a replacement for face-to-face learning. Similarly, Abdulah et al. (2024) found factors such as age, academic discipline, and digital familiarity were equally significant factors when determining attitudes toward the implementation of AI among both faculty and students at the University of Duhok. Such findings underscore the critical need for context-aware AI implementation strategies that consider not only technological affordances but also the sociocultural fabric of the educational environment.

In conclusion, although learners and educators in Iraq are open to AI-supported language learning, their success is contingent on not only being functional, but being developed in a pedagogically sound, culturally relevant, and ethically acceptable means. Future studies should focus on longitudinal perception studies, involving and cooperating with end-users, and evaluations of teacher training models in order to ensure teachers do not remain just conceptual figures to ensure that AI are adopted in a sustainable manner.

4.3 Reported Challenges and Barriers to AI Integration

Despite AI's promise, its use in Iraqi language education faces many issues. Studies show constant problems with systems, rules, and teaching methods. Limited access to AI tools, and lack of teacher training are big hurdles (Abed et al., 2024; Shareef, 2024). Also, there is a major issue which is the lack of clear plans and rules for AI use. Teachers and students say AI is used randomly, without support, set lesson plans, or ongoing teacher training (Abdulah et al., 2024; Alfuraiji, 2024). These issues highlight the need for a plan to bring AI into learning. This plan should not only put money into tools and teaching but also make sure local content is made and everyone involved takes part. Studies worldwide back this idea. They show that real change in AI for schools needs to focus on fairness, giving teachers a voice, and being aware of culture (Luckin et al., 2016; Holmes et al., 2022). In Iraq, where digital learning setups are still new, these steps are key to making AI truly help with teaching and learning.

4.4 Implications and Future Directions

Synthesizing the findings from the reviewed intervention studies, perception-based analyses, and reported barriers, a more comprehensive picture emerges of AI's evolving role in English language education in Iraq. While the pedagogical benefits of AI, ranging from enhanced feedback mechanisms to increased learner autonomy, are clearly supported by the evidence, their successful deployment hinges on addressing a complex web of infrastructural, pedagogical, and socio-cultural factors.

For policy makers, the review underscores the urgent need to invest in robust digital infrastructure, equitable access to AI technologies, and the development of culturally and linguistically localized AI tools. National policy frameworks must go beyond rhetorical advocacy and provide actionable strategies that link AI integration to curriculum reform, teacher training, and data ethics.

For educators and practitioners, the findings emphasize the importance of continuous professional development and the cultivation of digital pedagogical literacy. AI tools should be viewed not as replacements for human instruction, but as augmentative instruments that support differentiated instruction, multimodal engagement, and context-responsive feedback. Participatory models, where teachers are actively involved in the adaptation and evaluation of AI tools, are especially vital in ensuring classroom-level success.

For the research community, the field would benefit from more longitudinal, ecologically valid studies that assess the sustained impact of AI tools across diverse educational settings. Mixed-methods research designs should be employed to capture not only quantifiable learning gains but also affective, cognitive, and socio-cultural dimensions of AI-mediated language learning. Further, the integration of critical frameworks, such as discourse analysis and sociocultural theory, could help uncover how AI reshapes classroom dynamics, learner identity, and knowledge production.

5. Conclusions

This review critically examined the role of artificial intelligence (AI) in English language education within the Iraqi context, offering insights into both empirical interventions and stakeholder perceptions. The findings have demonstrated that AI tools, ranging from generative platforms like ChatGPT to specialized pronunciation and feedback applications, yielded measurable improvements in learner performance across speaking, grammar, writing, and pragmatic competence. Furthermore, perception-focused studies have revealed a cautiously optimistic attitude among both educators and learners, tempered by concerns about digital access, training, and curricular alignment.

Despite these promising outcomes, the review also has highlighted significant limitations in the current research landscape. Most studies have remaind small-scale, institutionally bounded, and short in duration, limiting the generalizability of their findings. Moreover, while many studies have reported on performance metrics, fewer engage with the complexities of real-time learner interaction, socio-cultural factors, or the ethical dimensions of AI use. The lack of large-scale, longitudinal, and critically engaged research has underscoreed the need for more contextually grounded studies that consider not just whether AI works, but how, for whom, and under what conditions.

As Iraq continues to navigate the challenges of educational reform, AI holds considerable potential to bridge gaps in access, equity, and quality, particularly in English language education (Luckin et al., 2016; Holmes et al., 2022). However, this potential can only be realized through coordinated efforts that align policy, pedagogy, and technology. Future research should focus on building participatory, interdisciplinary frameworks that incorporate teacher voices, learner needs, and institutional realities, ensuring that AI becomes a tool not just of innovation, but of inclusion and transformation.

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