2026 كانون 2 مجلة دراسات في الإنسانيات والعلوم التربوية العدد 12
January 2026 Journal of Studies in Humanities and Educational Sciences No. 12
Print ISSN 3006-3256 Online ISSN 3006-3264

The Effect of AI on Iraqi EFL Preparatory School Students' Listening Performance

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Abstract

In the current years, (AI) Artificial Intelligence tools have grown increasingly familiar in language learning processes , especially in developing the most crucial skills like listening.With the growing need of using artificial intelligence in education for achieving progress. And the lack of focusing on listening skill ,which is considered as one of the linguistic abilities ,by the EFL teachers and learners . In addition, its believed that AI can improve students listening abilities better than the conventional methods. However, the current study aims at finding out the effect of AI on Iraqi EFL preparatory school students' listening performance. 64 preparatory school students have randomly been selected (32) students for the experimental and control groups throughout the academic year 2025-2026. The study employed a non-randomized pre-post-test control group experimental design in order to accomplish its goal. To achieve the study aim; one instrument is utilized; a listening test. The data were analyzed statistically through using the instrument and resulted considerable difference between the experimental and control groups. The participants of the empirical group exceeded in performance over the other group by exhibiting enhanced the scores of understanding listening. Moreover, the study has resulted that making use of AI tools can enhance students' listening comprehension learn the target language. Finally, conclusion and recommendations are provided.

Keywords: EFL Listening Skills, Artificial Intelligence (AI), AI-Assisted Learning, Listening performance

أثر الذكاء الاصطناعي على أداء الاستماع لدى طلاب المرحلة الاعدادية دارسي اللغة الإنجليزية كلغة أجنبية في العراق

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ملخص البحث

ازدادت في السنوات الأخيرة استخدام أدوات الذكاء الاصطناعي في عمليات تعلم اللغات، لا سيما في تطوير مهارات الاستماع الأساسية. ومع تزايد الحاجة إلى استخدام الذكاء الاصطناعي في التعليم لتحقيق التقدم، وبسبب قلة التركيز على مهارة الاستماع التي يعتبرها معلمو ومتعلمو اللغة الإنجليزية كلغة أجنبية إحدى

القدرات اللغوية الاساسية في عملية التعلم، يُعتقد أن الذكاء الاصطناعي قادر على تحسين مهارات الاستماع لدى الطلاب بشكل أفضل من الطرق التقليدية. تهدف هذه الدراسة إلى معرفة أثر الذكاء الاصطناعي على أداء الاستماع لدى طلاب المرحلة الإعدادية في اللغة الإنجليزية في العراق. حيث تم اختيار ٦٤ طالبًا من طلاب المرحلة الإعدادية عشوائيًا (٣٢ طالبًا في كل من المجموعة التجريبية والمجموعة الضابطة) خلال العام الدراسي ٢٠٢٥-٢٠٢٦. واستخدمت الدراسة تصميمًا تجريبيًا غير عشوائي مع اختبار قبلي وبعدي ومجموعة ضابطة لتحقيق هدفها. ولتحقيق هذا الهدف، تم استخدام اختبار استماع كأداة واحدة. وقد أظهر التحليل الإحصائي للبيانات التي تم الحصول عليها من الاختبار وجود فروق دالة إحصائيًا بين أداء الاستماع في المجموعة التجريبية وأداء المجموعة الضابطة، حيث أظهر المشاركون في المجموعة التجريبية تفوقًا ملحوظًا على المجموعة الضابطة من خلال تحسن درجاتهم في مهارات الاستماع. علاوة على ذلك، خلصت الدراسة إلى أن استخدام أدوات الذكاء الاصطناعي يُسهم في تعزيز مهارات الاستماع لدى الطلاب في تعلم اللغة المستهدفة. وفي الختام، تم تقديم الاستنتاجات والتوصيات.

الكلمات المفتاحية: مهارات الاستماع في اللغة الإنجليزية كلغة أجنبية، الذكاء الاصطناعي، التعلم بمساعدة الذكاء الاصطناعي، أداء الاستماع

Introduction

Listening is considered as the most important skill that is needed for communication. Iraqi EFL students suffer from the lack of listening lessons in classrooms due to the inexperience of teachers . Brown and Yule (1983) state that Listening is a complex process of selecting, attending to, constructing meaning from, remembering, and responding to verbal and nonverbal messages”

However, According to Rost (2001), "listening is the most important skill for language learning because it can be used in most everyday situations and develops faster than the other language skills, indicating that it makes the development of the other language skills easier." grammatical structures as well as meaning interpretations that differ according to a person's level of linguistic proficiency. The ability of children to understand and react to spoken language is referred to as listening performance.

Examples of issues that make it difficult for EFL learners to listen include accents, terminology, and culture. The challenges faced by EFL students in developing their listening skills have been extensively documented in the literature. They are not exposed to enough natural language.

Artificial Intelligence (AI) has increasingly incorporated into the educational process, revolutionizing teaching and learning methodologies. The swift advance and incorporation of artificial intelligence (AI) are reshaping the styles students are educated and are expected to own a massive influence in the future. AI is considered as an important driver of progression and innovations in education.

Improving powerful listening skills presents a necessary issue for students learning English as a foreign language (EFL). Traditional classroom environments usually don’t provide learners enough chances to practice this essential communication

skill. Furthermore, many EFL teachers do not employ authentic resources that could allow learners to take part with native speakers' models, their limited ability to develop naturalistic pronunciation and comprehension capabilities. This gap in language instruction forms an urgent need for innovative approaches to improve this important language skill in EFL education.

Moreover, The educational revolution brought about by artificial intelligence (AI) influences learning and teaching. AI-powered tools, because of developing technology, provide enhanced language acquisition capabilities that stress on EFL listening skill. (Li and Yang ,2022)

AIM

The research aims to determining how AI affects the listening skills of Iraqi EFL preparatory school students

LIMITS : The research is restricted to:

- Students at Iraqi preparatory schools
- Listening exercises from the fifth stage required textbook,"English for Iraq"
- The 2025-2026 school year.

Hypothesis : The following null hypotheses have been investigated in order to fulfill the purpose of this study:

1. In the listening performance post-test, there is no statistically significant difference between the mean score of students in the experimental group who are taught listening using AI tools and those in the control group who are taught listening conventionally.

Literature Review: Listening has been characterized by numerous scholars; Thomlison (1984) and Hamouda (2013) described it as the capacity to understand and identify what others are saying. This entails grasping a speaker's vocabulary, syntax, pronunciation, and overall meaning. According to Morley (2001), listening encompasses auditory grammar, hearing discrimination, selecting crucial information, remembering it, and connecting it to the relationship between sounds and forms of meaning. Nonetheless, listening comprehension is an essential component of learning a language. To facilitate communication, learners must be able to understand native speakers. When learning a second or foreign language, listening is a crucial skill to develop (Rost, 2001; Vandergrift, 2007).

According to Rost (2001), the capacity to employ listening as a learning tool is the primary distinction between learners who are successful and those who are not.Since receiving language input is the greatest way to acquire a language, listening skills are particularly interesting when studying a foreign language. Acquisition happens when students receive sufficient understandable input,

according to Krashen et al. (1984). Rost (1994) demonstrated the significance of listening in the language learning process since it provides learners with input and has an intriguing role in the language development of learners.

Based on what Krashen (1985) exposed that listening skill is a vital factor in gaining comprehensible input. If there isn't any input , Learning will not happen. Hasan (2000) showed that through listening comprehension we get the suitable situations for acquisition and extension of another language skill. Rost (2002) asserts that developing speaking competency is linked to listening improvement. When teaching listening skills, listening comprehension might offer helpful insights. Teachers are forced to modify their listening exercises to make them more successful when students struggle with listening comprehension. Because of this, developing listening skills aids students in their language acquisition process, which in turn helps them improve their comprehensible input. Learners would be highly motivated to gain access to spoken English, such as conversations with native speakers, since their self-reliance in listening comprehension may be enhanced (Kurita, 2012).

Pourhosein and Ahmadi (2011) assert that listening plays a significant part in communication. According to research by Ferris (1998), Murphy (1987), Vogely (1998), and Hamouda (2013), listening is the most practiced ability in schools. Since hearing is utilized as a learning tool at every level of instruction, it is evident that listening is highly engaging for students' lives. Despite this, listening comprehension training has been overlooked in EFL classes.

Oxford (1990) states that listening improves more quickly than the other three language skills and may facilitate the development of the other skills. According to Brown (2007), there are four different forms of listening performance: intensive, responsive, selective, and extensive.

1. Intensive: this style of hearing involves perceiving the phonemes, words, and intonation of a longer language segment. identifying morphological and phonological components.

2. Responsive: Listening to a brief passage of language in order to provide a brief response (such as a greeting, a query, an order, a comprehension test, etc.).

3.Selective: Listening to improve a bottom-up technique. Certain information can be scanned in order to pinpoint a whole meaning or specific one.

4.Extensive: Listening to enhance a top-down technique, general comprehension of spoken language. Listening for the gist, main idea and inferences are parts of extensive listening.

Listening skills : Micro and Macro

Microskills:

1.Distinguish between various English sounds.

2.Keep a portion of the text in the short-term memory.

3. Identify English stress patterns (articulation, rhythm)

4.Identify shortened word forms.

5. Recognize the importance of word boundaries and word cores.
6.Process speech at various delivery speeds

7.Handle speech that has pauses, mistakes, adjustments , etc.

8. Identify systems, forms, patterns, rules, and word classes in grammar.
9.Identify the components of sentences.

10. Acknowledge that many grammatical forms can convey a specific meaning.
11. Identify coherent devices in spoken language.

Macroskills

1. Acknowledge the roles that utterances have in communication.
2. Draw conclusions about participants, circumstances, and objectives based on actualknowledge.
3. Make predictions, determine causes and effects, identify relationships, and learn new information from various circumstances and events.

4. Differentiate between implicit and actual meanings.

5. Interpret meanings using body language, kinesics, facial expressions, and other nonverbal cues.

6. Learning listening techniques include identifying important words or inferring a word's meaning from its context.

Artificial Intelligence

Artificial Intelligence usage (AI) keeps hundreds of studies for developing language acquisition specially among English Foreign Language (EFL) learners when improving their listening capabilities. Studies have also investigated how AI systems including speech recognitions and adaptive listening platform along with AI powered chat bots help improve listening skills by personalized experiences and real-time feedbacks and interactive moments. The research has assured that AI technologies deliver customized listening instructions through content adjustment

which correspond to EFL student's language capabilities. In an attempt to investigate how AI technologies are reshaping language teaching and learning practices, many researchers, such as Wang and Liu (2019) and Zou et al. (2023), Popenici and Kerr (2017), have shed light that AI provides personalized teaching style and learning experiences and improves engagements and learning outputs. The development of AI in teaching and learning is part of a broader movement away from traditional computer-assisted language learning systems and toward more sophisticated AI platforms that analyze speech, provide interactive feedback, and customize lessons for each student (Sharifi et al., 2018). Numerous research, such as Zhao's (2013), have demonstrated that technology generally has a favorable impact on language acquisition.

According to Holmes et al. (2019), "artificial intelligence is a technique for teaching a computer, a robot operated by a computer, or software to think critically and creatively like a human mind. AI is achieved by examining the cognitive process and researching the patterns of the human brain.". Zhou & Wang, (2021) pointed out that The AI-enabled speech recognition software, with chat bots and automated listening programs, provides students personalized experiences they were not able to access before conventional classes ended EFL students build all their skills from basic listening capabilities because listening makes the necessary basics required to achieve progress in the four skills : speaking, reading, and writing skills. According to Goh (2017), Strange accents, rapid speaking rates, and complex vocabulary make language acquisition more difficult for listeners. By providing students with real-time feedback, the benefits of AI-integrated listening techniques with intelligent tutoring systems outweigh traditional instruction (Sun & Xu, 2020). Students find it easier to practice listening because AI apps allow them to guide their learning at any desired level. In addition to improving students' listening skills, natural language processing (NLP) and machine learning algorithms leverage technology to improve students' pronunciation and listening comprehension (Kim, 2023).

According to Huang & Lin (2022), AI-powered virtual assistants with language learning platforms like Duolingo and ELSA Speak, which offer interactive, captivating content, significantly improve EFL learners' listening skills.

AI platforms consist of chatbots and virtual tutoring machines , students realistic-life dialogues and face different accents and speech samples, which improve their listening skills,(Zhao and Morgan,2022). Assessing these tools by educators will give information that they may use to form novel educational methods that to their students' needs. Zhao with the other researchers commenced a study testing ESL

students' use of AI speech recognition soft wares about evaluating pronunciations and intonations and stressed patterns thus supporting instant feedback.

Li and Wang (2023) recorded the influences that AI-based adjusted learning systems generate for EFL learners to improve their listening abilities. Students who made use of AI-customized listening platforms which automatically adjusted exercises according to their performance outputs outperformed and surpassed the traditional curriculum learners in comprehension improvement. Zhao Synchronized AI feedback systems permit students to improve their listening capabilities and speech processing capability at a faster range in terms of experimental data.

According to a study by Evers and Chen (2022), devices like Apple's Siri and Google's speech-to-text feature provide quick feedback on pronunciation accuracy, helping students identify mispronounced words and improve their speech. These technologies provide learners with remedial recommendations by analyzing the phonetic characteristics of spoken language and comparing it with models of native speakers.

Kim and Park (2020) stated that Students who made use of AI generated feedback means during their listening practices performed better when recognizing English accent phonetic differences compared to students who received teacher-led or delayed feedback Research investigations demonstrate that AI-based interactive platforms deliver improved ESL listening abilities to students.

Jones and Smith (2021) had a study about AI conversational tools to find out their capability in participating in real-time conversations with humans. The authors explained through their researches that students that interacted with AI-powered virtual tutors enhanced a developed comprehension of authentic vocal models together with speeches pausing and contextualized elements. Additionally Wang and Chen (2022) stated that AI chat bots system instigate listeners to process the targeted information before replying .

The relatively new and emerging stage of AI integration into the country's English as a Foreign Language (EFL) paradigm is indicated by the fact that academic interest in this topic just started in Iraq in 2021, with about 30 papers pertaining to this discipline.

However , there are problems that show up when using AI -based listening methods in classrooms instruction. Brown and Lee (2020) had an interesting study about an accurate AI speeches recognition and set up a fact about its capability but identified problems with different accents and unconventional pronunciation that may give results about misinterpretations.

Seo et al. (2021) stated that students have concerns about responsibility, especially when AI systems generate unreliable responses that lead to negative results.

Three key AI tools contributed significantly to listening comprehension improvements:

1. Speech Recognition Software : Students were able to recognize pronunciation mistakes, stress patterns, and intonation differences with the aid of AI-driven speech recognition technologies. Real-time speech recognition feedback significantly increases listening accuracy, according to studies like Zhao & Morgan (2022). Students in this study stated that speech recognition technology improved their ability to process spoken words, especially when it came to differentiating words and phrases that sounded similar.

2. Virtual Tutors and Chatbots Students' comprehension of various dialects and natural speech variations was enhanced by AI-powered virtual tutors that mimicked real-life discussions. Virtual tutors expose students to a variety of linguistic inputs, strengthening their capacity to interpret spoken language in context(Jones & Smith ,2021). Students in the experimental group stated that using AI chatbots increased their confidence in their ability to comprehend spoken English from different speakers.

3. Text-to-Speech (TTS) Systems AI-powered text-to-speech programs offered synthetic voice models that improved learners' listening flexibility by enabling them to modify clarity, speed, and pitch. According to research by Wang & Chen (2022), TTS systems greatly enhance students' capacity to efficiently process spoken input. The results of this study demonstrate that students who utilized AI-based TTS technologies were more adept at identifying contextual meaning and speech changes in spoken dialogues.

Research Methodology

Research Design

The current study employed a non randomized pre-post test control group design to find out the effect of the AI application on students' listening skills. This kind of design necessitates two sets of equivalency in terms of the independent variable, according to Isaac and Michael (1997).

Hence, the control group (CG), used the traditional teaching method and the experimental group (EG) used AI- powered listening training lessons.

Considering several important factors, the two groups (experimental and control) are equal. While the control group receives instruction using conventional means,

the experimental group receives instruction using AI-powered listening exercises and virtual teaching resources.

The post-test is given to both groups to wrap up the trial. Examine table 3.1.

Table 1: Design of the Experiment

Group	Tests	Independent Variables	Tests
E.G	Pre-test	AI-Powered tools such as ELSA, ChatGPT	Post test
C.G	Pre test	Conventional procedures	Post test

Population and Sample Selection:

According to Best and Khan (2006), Population is any group of persons who partake one or more qualities Whereas Sampling, According to Gay et al. (2010), it is the process of choosing a number of people to represent the broader group from which they were chosen. Iraqi male students enrolled in preparatory schools for the 2025–2026 academic year, with the exception of the Kurdistan area, make up the study's population. The sample is obtained from the AD Dewanyah General Directorate of Education. Boys in Dewanyah's Al-Oloum Preparatory School are chosen at random from the fifth preparatory class. The fact that fifth-grade students are old enough to learn and do not have ministerial exams is the rationale behind their selection. The experimental and control groups are represented by Sections A and C, which are chosen at random. There are sixty-four students involved. Please refer to table (3.2):

Table 2 population

Study Groups	Sections	No. of students
EG	A	32
CG	C	32

StudyInstrument

According to Brown (2001), a test can include a series of statements or questions to which participants could respond by selecting from the available options. According to Stacks (2010), a scale is a measurement tool that consists of items related to attitudes or beliefs that show an intriguing structure toward an attitude or belief object.

.For achieving the study aim and to verify the hypotheses, a standardized listening comprehension posttest is employed; a test adopted from Brown (2004) a dialogue and multiple-choice comprehension items test. The participants are required to

recognize phonetics in addition to segment speech and understanding accents and contextual meanings according to the conversations of the test.

Application of the experiment

A lesson plan is prepared for both the experimental group (using AI-assisted tools) and the control group (using the methods outlined in the teacher's guide).

To ensure the validity and reliability of the listening comprehension test, experts validation was conducted and proved . Besides, the test was piloted with a group of EFL learners (N=20) before implementing the experiment. Consequently, feedback was received for adjustments issues. Cronbach's Alpha was used to measure The reliability coefficient of the test resulted 0.85, which refers to a high internal consistency.

The experiment began on October 1st, 2025, and ran for twelve weeks throughout the 2025–2026 school year, ending on January 5th, 2026.Throughout the experiment, both groups get the identical daily lessons.

Final result

In the listening comprehension posttest, the experimental and control groups' mean scores were 90.031 and 64.125, respectively, with standard deviations (SD) of 30.692 and 22.588. The calculated t-test value is 3.846, which is greater than the crucial value of 2.000. According to table (3),

Table (3) shows the students' listening comprehension posttest t-value

Group	Number	Mean	SD	t-value		DF	Results
				Computed	critical		
Experimental	32	90.031	30.692	3.846	2.000	0.05	**Significant For the Exp. group**
Control	32	64.125	22.588				

For this reason, the Cohen formula is employed to confirm the effect size of the independent variable (AI tools). If the effect size falls below 0.41, it is considered weak; if it falls between 0.70 and 0.41, it is considered medium; if it exceeds 0.70, it is considered high. The outcome demonstrates that the independent variable's effect size reaches (1.146), indicating a large effect size (Table 3). The initial null hypothesis in this investigation is rejected based on the obtained results.

Table (4): The Size of Effect

Experimental Group Mean Score	ControlGroup Mean Score	SD	Effect Size

90.031	64.125	22.588	1.146

DISCUSSION OF RESULTS

The present study results are consistent with the earlier studies examined earlier. The aforementioned study illustrates the success of the AI-powered tools in promoting students' listening comprehension .

Based on this study, the following factors contribute to the advantageous outcomes of the technique under investigations:

1. The results refer to the fact that the experimental group, which got AI-assisted listening instructions, demonstrated a crystal clear improvement in listening comprehension,

2. In contrast, the control group, that followed conventional listening instruction, showed only a modest simple improvement

3.Students' listening comprehension is facilitated by using AI-tools.

4. It makes sure that students understand what they need to complete the listening comprehension work.

5. Students are motivated to exercise the activities in real-world scenarios.

6. students made use of the AI in their feedback and repeating practice.

7.Students become aware of their mistakes in pronunciation and speech recognition via AI-powered tools frequent usage.

8.AI tools like chat GPT present authentic engaging atmosphere.

9.AI-powered tools foster a secure , friendly, and encouraging learning atmospheres. In this sense, students are required to be encouraged to try new things and take opportunities.

10. While the findings refer to the reality that AI-driven tools noticeably enhanced listening skills, A few difficulties were identified. Sometimes verbal input was misinterpreted due to technical issues including poor speech recognition and a lack of contextual awareness. These difficulties align with those noted by Brown & Lee (2020), who discovered that complex language variants are difficult for speech recognition technology to handle. Additionally, some students became overly dependent on AI-generated feedback, as noted by Patel & Singh (2023), which may impair their ability to develop independent listening strategies.

Conclusion

This study resulted ,due to the empirical evidence, the following inferred deductions:

- The listening comprehension of Iraqi EFL preparatory school students are improved by the AI language learning technologies.

- AI leads to a better oral language processing, pattern recognition capabilities, in addition to accent comprehension among learners.

- students' interest increased along with the AI applications used for listening.

benefit EFL students' listening abilities.

- AI tools strengthen EFL listening education by giving students flexible and independent language practice chances to improve their performance.

- AI chatbots frees students from pressure through fostering an environment that inspires, stimulates, and motivates everyone to take part.

- Using AI-powered tools give the students the privilege of authentic learning materials.

Recommendations

The following suggestions are made for educators and researchers in light of the study's findings:

1. teachers of English as should understand the impact of AI and be able to apply it in the classroom to help students improve their listening skills.

1.Educators have to use AI-tools along with their usual conventional teaching methods in order to improve students listening proficiency.

2. Feedback tools and speech recognition systems should be used in EFL language classroom so as to help students improve their pronunciation , stress and intonation.

3. AI chatbots and virtual tutors should be displayed for the learners in EFL classrooms in order to create real language input which in turn assist them in developing their listening comprehension throughout the entire educational process.

4. There should a frequent training for students to help them master AI tools ,which lead to build independent listening approaches. .

5.Using AI analysis in order to make a new developed teaching methods through the data presented by AI analytic results.

6. Curriculum plans should be created by the educational institutions which synchronize AI systems of learning along with teaching advices for EFL students in the period of listening exercises.

7- There should be an ease of access and affordability for AI platforms ,which can help students make use of properly.

8. Schools should be supplied with enough computers and the access to the internet to make use of AI applications.

9. There should be enough time allocated for students to practice listening individually and in groups.

10.EFL teachers should be well trained and educated regrading AI applications and employing them in teaching process.

11. AI-powered learning materials should be included within the curriculum by curriculum designers and decision makers in order to heighten EFL teaching level.

12. It's highly recommended to make use of AI in teaching EFL because it has improved students' listening performance according to the findings of the current study.

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