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The Impact of AI-Assisted Learning on EFL Speaking Skills: A Mixed-Methods Study in the Iranian Context

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Abstract

The emergence of artificial intelligence has accelerated and fostered the process of language learning. Despite the growing shift towards technology integration, there is a scarcity of empirical research examining the impact of AI-assisted learning activities on the speaking proficiency of Iranian EFL learners. This study investigated the impact of artificial intelligence (AI)-assisted learning activities on the speaking skills of EFL learners in Iran. This research employed a quasi-experimental design with 40 participants divided into a control group and an experimental group that utilised AI-based tools, specifically the Gliglish and Sayra applications. The study was conducted for one academic semester. Both quantitative and qualitative data were gathered using a mixed-methods design. Descriptive statistics, test of normality, paired sample T-test and Mann-Whitney U test were employed. Results from pre-test and post-test comparisons revealed significant improvements in the experimental group's speaking skills, highlighting the effectiveness of AI-based learning interventions. Moreover, qualitative data collected through questionnaires indicated positive perceptions of AI-assisted learning among students, with benefits observed in motivation, engagement, and language proficiency. The findings imply that using AI tools offers a way to address the common challenge of limited classroom time dedicated to speaking practice. In addition, the results provide valuable insights into the potential of AI in language education and contribute to understanding AI's role in language education, suggesting that AI-assisted strategies can enhance EFL speaking development.

Keywords: Artificial Intelligence, EFL Learners, Speaking Skills, AI-Assisted Learning

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Introduction

The rapid advancement of artificial intelligence (AI) has transformed various fields, including education, where it has revolutionised teaching methodologies and learning experiences. In language learning, AI holds great potential to address long-standing challenges, such as providing personalised feedback, enhancing engagement, and fostering communication skills in environments where traditional methods may have limitations (Mayer, 2019). As AI-based applications increasingly integrate into educational settings, understanding their impact on learners' speaking skills is critical, especially for English as a Foreign Language (EFL) learners, who often struggle to master speaking proficiency (Kukulska-Hulme & Viberg, 2018). This research examines the effects of AI-assisted learning activities on the development of speaking skills among Iranian EFL students, focusing on tools like Sayra and Gliglish.

The prominent theoretical framework that informs this study is the socio-cultural theory of learning, pioneered by Vygotsky (1978). According to this perspective, learning is a socially mediated process shaped by interactions with others and the cultural context in which learning occurs. In the context of AI-assisted language learning, socio-cultural theory highlights the importance of collaborative learning environments and the role of technology in mediating social interactions between learners and AI-driven platforms (Gadallah, 2020).

Speaking is an interactive meaning-making process involving producing, receiving, and processing information. Its form and meaning depend on the context in which it occurs, the participants, and the purposes of speaking (Burns & Joyce, 1997). Cameron (2001) says that speaking is the active use of language to express meanings so that other people can understand them. "Speaking skill occupied an important place in foreign language teaching and learning," as Nunan (2003, p. 39) argued. In addition, Nunan claims that "speaking consists of producing systematic verbal utterances to convey meaning" (p. 48).

Speaking development in this study refers to improving learners' ability to communicate effectively in spoken English, as assessed by the Cambridge English Preliminary Speaking Test. This test evaluates proficiency through four key components: grammar, which focuses on the accurate use of grammatical structures, discourse management, which measures the organisation and fluency of speech; pronunciation, which assesses the clarity and intelligibility of spoken English; and interactive communication and which examines conversational skills and responsiveness (Cambridge Assessment English, 2018).

The role of speaking in language acquisition has been extensively documented as one of the most important and challenging skills to develop. Goh and Burns (2012) argued that speaking requires linguistic knowledge and the ability to process information quickly and respond appropriately in real-time. For many EFL learners, the

classroom environment provides limited opportunities for authentic speaking practice, making it difficult to achieve fluency and confidence (Richards, 2015). AI tools, however, offer unique possibilities for overcoming these barriers by enabling learners to engage in interactive, context-rich conversations with AI-based platforms, thus expanding opportunities for practice outside the classroom (Chen, 2021). By simulating real-life speaking situations, AI can contribute significantly to acquiring speaking skills, as learners receive immediate feedback and can repeat exercises at their own pace (Zhang et al., 2020).

Within the domain of language acquisition, the integration of Artificial Intelligence (AI) has ushered in a new era of innovation, particularly in developing speaking skills. AI-driven language learning platforms harness cutting-edge technologies such as speech recognition and natural language processing to offer tailored experiences for speaking practice (Rusmiyanto et al., 2023). These platforms provide learners with opportunities to engage in speaking exercises and offer real-time feedback on pronunciation, fluency, and grammar, enabling learners to refine their speaking abilities in a supportive and dynamic environment (Brown & Jones, 2021).

What sets AI-powered language learning tools apart is their ability to simulate authentic conversation scenarios, allowing learners to practice speaking in context and develop practical communication skills (Smith et al., 2022). Through interactive dialogues and role-playing exercises, learners can immerse themselves in simulated real-life situations, enhancing their speaking proficiency and building confidence in their language abilities.

Furthermore, AI-driven virtual tutors and chatbots are pivotal in providing learners with continuous opportunities for speaking practice and feedback (Chen et al., 2020). These virtual assistants engage learners in conversational exchanges, offering personalised guidance and support tailored to individual learning needs. By interacting with AI tutors, learners can engage in meaningful dialogues, receive instant feedback on their speaking performance, and track their progress over time.

Several related studies explored the use of AI in language learning, focusing on different skills and applications. For instance, Satar and Akayoğlu (2021) examined the impact of AI-based tools on improving learners' writing skills through automated feedback systems. Hwang et al. (2020) focused on AI-powered chatbots and their effect on enhancing listening and reading comprehension. In another study, Yang and Mei (2019) explored the use of AI in pronunciation practice, employing applications like SpeechAce to assist learners in refining their speaking skills. However, none of these studies specifically investigated the impact of AI tools like Sayra or Gliglish on speaking development, particularly within the Iranian EFL context (Satar & Akayoğlu, 2021; Hwang et al., 2020; Yang & Mei, 2019).

Furthermore, while AI-powered language learning platforms such as Sayra and Gliglish have emerged as popular tools in the global EFL landscape, their effectiveness

and suitability for Iranian learners remain underexplored (LinkedIn, 2023). These platforms offer speech recognition, personalised feedback, and interactive exercises to improve learners' speaking skills. However, the extent to which these features align with the linguistic and cultural needs of Iranian EFL learners, particularly those in Shiraz ninth-grade classrooms, is poorly understood. Therefore, there is a pressing need for empirical research to investigate the efficacy of AI-assisted learning activities within this specific context (Li et al., 2019).

Despite the growing interest in AI's role in language learning, there remains a significant gap in research, particularly in Iran. To the best of the researchers' knowledge, no mixed-methods study has been conducted on the effects of AI-powered language learning platforms such as Sayra and Gliglish, focusing on speaking proficiency among Iranian EFL learners. This gap in the literature is significant because it highlights the need for evidence-based approaches that address local educational contexts and challenges (Darmuki & Hariyadi, 2019). While international studies have explored AI's impact on language skills such as reading, writing, and listening, fewer have concentrated on speaking, which remains a complex and multifaceted skill to measure and develop (Lu, 2020). Moreover, the existing research often focuses on broader regions or populations, leaving Iranian students' specific needs and experiences underexplored (Rahimi & Asadollahi, 2019).

Given Iranian EFL learners' unique challenges, particularly in speaking development, this study sought to fill this gap by examining how AI tools such as Sayra and Gliglish could enhance their speaking proficiency. These AI applications were designed to support learners by offering real-time speaking exercises, personalised feedback, and task-based activities aligned with communicative language teaching principles (Boulton & Cobb, 2017). Previous studies have shown that AI can improve learners' motivation and confidence in using a new language, especially when learners are encouraged to use AI tools in their daily academic routines (Xu et al., 2019). However, these studies were largely centred on other skills, and limited data exists on their application in speaking development (Shadiev & Huang, 2020). Therefore, this research explored the potential of AI to contribute directly to Iranian EFL learners' ability to speak fluently, accurately, and confidently.

This study's relevance extends beyond the immediate context of Iranian EFL learners, as it contributes to the broader discourse on how technology can be harnessed to enhance educational outcomes. As the world moves increasingly towards digital learning environments, understanding how AI tools can be optimised to improve student performance is vital (Satar & Wigham, 2020). The findings of this research offer valuable insights for educators, policymakers, and curriculum developers seeking to integrate AI into language education. The use of AI-based applications in this study not only provided practical benefits in speaking development but also introduced new

avenues for autonomous learning, where students could control their learning pace and receive feedback without the constant supervision of a teacher (Van Lier, 2020).

The objectives of this study encompass a multifaceted exploration of the integration of artificial intelligence (AI) in EFL learning contexts in Iran. Firstly, the research assesses the tangible impact of AI-assisted learning activities on developing speaking skills among ninth-grade Iranian EFL learners (Li et al., 2019). Through meticulous data collection methods, including pre-tests, post-tests, and observational analyses, the study seeks to elucidate whether incorporating AI technologies in language learning environments leads to measurable enhancements in students' speaking proficiency. This investigation aims to contribute empirical evidence to the ongoing discourse on the efficacy of AI-driven educational tools in fostering language acquisition, particularly in oral communication skills.

In addition to evaluating the outcomes of AI integration, this study aims to delve into Iranian EFL learners' subjective experiences and perceptions regarding using AI-assisted learning activities (Chen et al., 2017). By employing research methods such as surveys, the research seeks to uncover the nuanced attitudes, preferences, and challenges students encounter when engaging with AI-driven language learning platforms. This exploration is crucial for gaining deeper insights into the socio-cultural, psychological, and pedagogical dimensions of AI adoption in EFL classrooms in Iran.

Furthermore, the objectives of this study extend beyond the confines of individual learner experiences to encompass broader implications for educational practice and policy (Alowais et al., 2023). The research aims to provide actionable recommendations for educators, curriculum developers, and policymakers on the effective integration of AI technologies in EFL pedagogy by synthesising quantitative findings. This comprehensive approach to inquiry underscores the study's commitment to informing evidence-based practices that can optimise language learning outcomes and enhance the overall educational experience for Iranian EFL learners. The present study tries to find answers to the following questions:

> Do artificial intelligence-assisted learning activities impact the speaking development of ninth-grade classes in the Iranian EFL context?
>
> What are the Iranian EFL learners' perceptions about artificial intelligence-assisted learning activities used in the classroom?

Literature Review

Integrating artificial intelligence (AI) into education has become a focal point in modern educational research. AI's potential to personalise learning, provide immediate feedback, and offer interactive experiences makes it particularly promising in language acquisition (Shadiev & Huang, 2020). As EFL learners increasingly turn to digital platforms, AI-based tools are being explored to enhance speaking skills, which remain

one of the most challenging aspects of second language learning. This literature review explores various studies that have investigated the role of AI in language learning, specifically in the development of speaking proficiency.

AI in Language Learning

One of the primary benefits of AI in language education is its ability to provide instant corrective feedback, a key component of language acquisition theories, such as Long's Interaction Hypothesis (Long, 1996). AI has become essential for providing learners with interactive, adaptive, and personalised learning experiences. In another study, Kukulska-Hulme and Viberg (2018) explored the use of mobile AI applications in language learning. They found that mobile platforms allowed learners to engage in language practice outside the classroom, significantly boosting their speaking confidence and autonomy. The study emphasised the importance of interactive, AI-driven applications that simulate real-life communication situations, making the practice more relevant and engaging for learners. Mayer (2019) noted that AI-powered platforms can cater to learners' individual needs by adjusting learning materials and feedback based on real-time data, which has proven effective in various fields of education, including language learning. Several AI-based tools, such as chatbots and speech recognition software, have been developed to improve learners' speaking skills. Xu et al. (2019) and Nguyen and Tran (2020) argued that AI-based language tools help learners stay motivated by offering a gamified, user-friendly environment that aligns with their academic and personal goals, facilitating speaking proficiency.

Zhang et al. (2020) examined the use of AI-driven tools for enhancing oral proficiency among EFL learners and found that these tools significantly improved learners' speaking accuracy and fluency. This improvement was attributed to the real-time feedback provided by the AI, allowing learners to immediately correct their mistakes and repeat tasks until they achieved better results. Similarly, Lu (2020) highlighted that AI-powered systems can analyse a learner's pronunciation and intonation, offering tailored feedback that traditional classroom settings often cannot provide due to time constraints and larger class sizes. By mimicking natural conversation, AI applications allow learners to practice speaking in authentic contexts, making language use more meaningful and effective (Chen, 2021).

The Role of AI in Speaking Development

Speaking is widely recognised as one of the most difficult skills for language learners to master, particularly in an EFL context where opportunities for spoken interaction in the target language may be limited (Richards, 2015). A study by Boulton and Cobb (2017) demonstrated that EFL learners who used AI-based applications for speaking practice showed marked improvement in their oral proficiency compared to those who relied solely on traditional classroom instruction. These learners benefited from the

interactive nature of AI, which allowed them to practice at their own pace, receive instant feedback, and engage in various communicative tasks designed to enhance fluency, accuracy, and coherence. Importantly, this study highlighted that AI platforms could simulate real-world communication contexts, helping learners develop linguistic competence and pragmatic skills, such as turn-taking and conversation management.

Despite these promising findings, AI's role in developing speaking skills has not been without challenges. Research by Rahimi and Asadollahi (2019) pointed out that while AI tools can provide valuable practice opportunities, they may lack the cultural and contextual nuances in human interaction. Furthermore, some learners may struggle with AI interfaces or feel disconnected from the learning process when interacting with machines rather than human interlocutors. This has led to calls for further research into how AI can be adapted to better meet learners' cultural and social needs.

AI can address this gap by providing learners with interactive speaking tasks and immediate, personalised feedback. Van Lier (2020) argued that speaking development requires frequent practice and exposure to authentic language use, conditions that AI platforms are well-suited to meet. For instance, AI-driven conversation tools like chatbots allow learners to simulate dialogues in a safe, controlled environment, reducing speaking anxiety and fostering fluency development (Shadiev & Huang, 2020). Likewise, Kumar and Patel (2021) examined recent developments in AI-driven personalised learning and emphasised its substantial benefits in language acquisition. They noted that AI-powered systems, such as natural language processing tools and speech recognition software, provided learners opportunities to practice and refine their speaking skills in a low-pressure environment, free from judgment or social anxiety. Additionally, in a quasi-experimental piece of research by Azizimajd (2023), the effect of engagement in voice-based chatbot classroom interactions on sixty EFL learners' oral fluency was investigated. The study results revealed that the students in the experimental group performed significantly better than their counterparts in the control group in terms of oral fluency.

Studies in the Context of Iranian EFL Learners

Research on the use of AI in language learning in Iran remains scarce, particularly in speaking development. While several studies have explored the broader applications of technology in education, few have specifically focused on AI-assisted language learning. One notable exception is a study by Rahimi and Asadollahi (2019), which investigated using AI tools to improve Iranian EFL learners' listening and speaking skills. The study found that learners who used AI-based applications, such as speech recognition tools, significantly improved their listening comprehension and oral fluency. However, the authors emphasised the need for more localised research that considers Iranian learners' unique challenges, particularly regarding access to technology and cultural differences in communication styles.

In another study, Shadiev and Huang (2020) explored the effectiveness of AI in improving EFL learners' speaking skills in a broader Asian context, including Iran. They found that AI platforms like chatbots and voice recognition tools provided learners with valuable opportunities to practice speaking in English, which was particularly beneficial for learners with limited access to native speakers. However, the study also noted that AI tools need to be carefully integrated into the curriculum to complement traditional language teaching methods, as over-reliance on technology can lead to a reduction in face-to-face interaction, which remains crucial for developing communicative competence.

Overall, the literature highlights the growing role of AI in language education, particularly in enhancing speaking skills. AI tools such as chatbots, speech recognition software, and interactive applications have proven effective in providing learners with personalised feedback, opportunities for authentic practice, and greater autonomy in their learning. However, research on the use of AI in speaking development among Iranian EFL learners remains limited, underscoring the need for more localised studies that consider this learner population's specific needs and challenges. As the use of AI in education continues to expand, future research should explore how these tools can be optimised to support learners in developing linguistic competence and the pragmatic and cultural skills necessary for effective communication in a globalised world.

Method

Design

A quasi-experimental mixed-methods research design was employed to investigate the impact of artificial intelligence-assisted learning activities on Iranian EFL learners' speaking development. Two intact classes formed the experimental and control groups. Concerning the types of data used in the current study, this study benefited from a mixed-methods design since data collection included both quantitative and qualitative data.

Participants

The study involved 40 ninth-grade female students aged 14-15 from a middle school in Shiraz. These participants were selected through purposive sampling to create a homogeneous sample, allowing for relevant findings in similar educational contexts. Using two intact classes, maintaining consistency in the educational environment, and minimising external variables could influence the outcomes. Non-random selection was deemed suitable for the quasi-experimental design and aligned with the practical constraints of educational research. The participants' demographic information ensured the sample was appropriate for achieving the study's objectives.

Instruments and Materials

This study employed various instruments and materials to assess and support the enhancement of ninth-grade students' speaking skills through artificial intelligence-assisted learning activities.

Quick Placement Test (QPT)

Key instruments included the Oxford Quick Placement Test (OQPT) and the Cambridge English Preliminary Speaking Test. The OQPT was used to determine participants' initial English proficiency levels, ensuring a baseline for comparing pre- and post-intervention speaking development. This test, developed by Oxford University Press and Cambridge ESOL, features a two-part structure evaluating grammar, vocabulary, and comprehension. It demonstrated high reliability with a Cronbach's alpha coefficient of 0.90.

The Cambridge English Preliminary Speaking Test

This test is a comprehensive tool for evaluating speaking skills and assessing learners' grammar, vocabulary, discourse management, pronunciation, and interactive communication. The total test duration is approximately 14 minutes, during which two candidates interact with two examiners. One examiner acts as an interlocutor and assessor, guiding the candidates and engaging in conversation, while the other acts solely as an evaluator, observing and assessing without participating in the dialogue. The test begins with a two-minute conversation between the interlocutor and each candidate. This section focuses on general social language, where candidates are expected to answer questions and engage in a brief exchange. The second part involves a one-minute individual-long turn for each candidate. The third part of the test is a collaborative task, where both candidates work together on a given prompt. They must discuss the prompt, exchange ideas, and reach a conclusion or decision.

The final part of the test is a discussion based on the collaborative task. Candidates are asked to elaborate further on the topic, offer their opinions, justify their views, and respond to follow-up questions from the interlocutor. The Cambridge English Preliminary Speaking Test scores range from 0 to 5 and are reported on a scale of 0 to 100 for research purposes. This test also exhibited high reliability, supported by interrater evaluations with a coefficient of 0.88 and robust validity measures, ensuring its effectiveness in assessing speaking proficiency.

The Cambridge English Preliminary Speaking Band Descriptors

This instrument is a standardised tool for assessing speaking performance in this study's pre-test and post-test phases. Developed by the University of Cambridge Local Examinations Syndicate (UCLES) in 2019, these descriptors offer a structured framework for evaluating multiple spoken language proficiency dimensions. The

Speaking Band Descriptors consist of four main categories: Grammar and Vocabulary, Discourse Management, Pronunciation, and Interactive Communication. Each category is rated on a scale from 0 to 5, providing a detailed and nuanced evaluation of the candidate's speaking skills.

Grammar and Vocabulary assesses the candidate's control over grammatical structures and the appropriateness of their vocabulary within specific contexts. Discourse Management evaluates the coherence and cohesion of the candidate's speech. This involves the logical flow and organisation of ideas, including using cohesive devices such as conjunctions and transitions. Pronunciation focuses on the clarity and intelligibility of the candidate's spoken language. This includes accurate production of sounds, appropriate stress and intonation patterns, and overall fluency. Interactive Communication assesses the candidate's ability to participate effectively in conversations. This includes initiating and responding appropriately, supporting interlocutors, and demonstrating turn-taking skills.

Questionnaire on Learners' Perceptions

A questionnaire developed by Pacheco-Mendoza et al. (2023), based on the studies conducted by Flores and Sanchez (2023), Hamoud et al. (2018), and Mensah et al. (2023), was utilised to evaluate to understand students' perceptions of AI-assisted learning activities. Experts further validated it and gathered feedback on participants' familiarity with AI and its impact on their academic experience. The questionnaire featured a 5-point Likert scale focused on AI's benefits, challenges, and ethical implications. With a Cronbach's alpha of 0.92, the questionnaire displayed high reliability and was essential in evaluating learners' views on AI in education. The questionnaire measured various dimensions, such as familiarity with AI, perceived effectiveness, ethical considerations, and its influence on academic performance. Each item in the questionnaire was analysed to provide a detailed understanding of how students perceive the integration of AI tools in their educational context.

Sayra and Gliglish Platforms

Two AI-based platforms, Sayra and Gliglish, were integral to the intervention's materials. The Sayra application was a forward-thinking platform designed to help students overcome the challenges of conversing in a foreign language. The application facilitated communication between students and fluent or native speakers by organising video sessions that provided a practical and engaging environment for improving speaking abilities. Sayra's features included real-time video interactions, enabling students to practice speaking in a natural context, receive immediate feedback, and engage in meaningful conversations with experienced speakers.

Gliglish, powered by ChatGPT technology, offered an AI-driven conversational platform allowing students to practice and receive feedback on their speaking skills. It enabled students to practice speaking and listening in various languages, offering a cost-effective and time-saving alternative to traditional language learning methods. Gliglish allowed users to improve their fluency and build confidence through regular practice, leveraging features such as multilingual speech recognition, adjustable speed, feedback on grammar, translations, and suggestions. Both tools were rigorously validated for content and construct validity by language education experts, confirming their alignment with the study's objectives. Through their reliability and user-friendly design, these AI applications provided an interactive and effective medium for students to develop their speaking skills, marking a significant step in integrating AI with language education.

Interview

As a qualitative phase of this study, the primary objective was to investigate students' perceptions of the artificial intelligence-assisted learning activities integrated into the classroom environment. The existing literature pertinent to the study's variables, objectives, and questionnaire items were considered to construct a structured interview comprising four targeted questions. The interviews were conducted face-to-face, with each student interviewed individually, ensuring they addressed the same four questions sequentially. Notably, the interview process continued until data saturation was achieved, meaning that no new information could be added. Three experts in the field further corroborated the validity of the interview, and the reliability was assessed through intra-rater reliability.

Procedures

The study was conducted over one academic semester and involved 40 students divided into two groups: an experimental group (20 students) and a control group (20 students). The experimental group engaged in AI-based learning activities using the Sayra application and Gliglish website, while the control group received traditional speaking instruction without using AI tools. Both groups completed pre-test and post-test assessments using the Cambridge English Preliminary Speaking Test to measure their speaking proficiency. Additionally, the Oxford Quick Placement Test was administered at the beginning of the study to assess participants' proficiency levels and ensure homogeneity between the groups.

Data collection included both quantitative and qualitative methods. Pre-test and post-test results were analysed using statistical tests to determine any significant differences in speaking development between the experimental and control groups. A questionnaire, including both Likert-scale and open-ended questions, was also administered to the experimental group to gather their perceptions of AI-assisted

learning activities. The validity and reliability of the instruments were ensured through expert checks and statistical measures, such as Cronbach's alpha, which yielded satisfactory values. The data analysis provided insights into how AI tools influence speaking proficiency and investigate learners' attitudes toward their use in language learning.

The data collection process was structured to gather both quantitative and qualitative data systematically. Initially, all participants were administered the Oxford Quick Placement Test (OQPT) to establish a baseline proficiency level, ensuring fair comparisons across groups. This was followed by the Cambridge English Preliminary Speaking Test, conducted as a pre-test to evaluate the students' speaking skills before the intervention. The intervention spanned eight sessions, where the experimental group used AI-based tools like the Sayra application and the Gliglish website. These tools provided practical language learning experiences, including conversational practice, interaction with native speakers, and real-time feedback to improve speaking skills. The intervention phase involved using AI-based language learning applications and websites, specifically the Sayra application and the Gliglish website, among the students in the experimental group. The Gliglish website, powered by advanced AI technology, was an integral part of the AI-based activities used in the experimental group. These tools were integrated into the classroom activities throughout eight sessions.

The treatment sessions spanned 20 instructional periods, each dedicated to specific topics from the ninth-grade curriculum. These sessions focused on developing speaking skills around various thematic units, including personality, travel, festivals, job-related services, media, health, and injuries. The control group received traditional instruction without AI tools, using teacher-led discussions, vocabulary-building exercises, and role-playing activities to improve speaking skills. Conversely, the experimental group engaged with Sayra and Gliglish and offered interactive, real-time feedback and simulated dialogues to enhance their speaking development.

After the intervention phase, the speaking test was administered again as a post-test to measure progress. Additionally, the questionnaire was used to collect qualitative data on participants' perceptions of the AI-assisted learning activities, focusing on their attitudes, the perceived impact, and any challenges faced. Subsequently, out of 20 experimental group students, eight were chosen to participate in a structured interview of four questions. During the in-person interviews, the students were required to respond to the questions within the designated time frame, lasting approximately ten minutes for each student.

Data analysis

Data analysis was conducted using SPSS version 26, combining descriptive and inferential statistical techniques. Descriptive statistics summarised demographic

characteristics, including gender, age, and baseline proficiency. For inferential analysis, normality tests were first conducted to determine the appropriate statistical methods. If the data followed a normal distribution, independent-samples t-tests were used to compare the post-test results between groups, and paired-samples t-tests assessed changes within each group. Non-normal data and non-parametric alternatives such as the Mann-Whitney U and Wilcoxon signed-rank tests were employed. Qualitative data from the interview underwent thematic analysis to identify key themes related to students' experiences with the AI tools. The data was clustered into tentative categories, and this process continued until the data and the derived themes were saturated. This comprehensive approach ensured a thorough assessment of the study's objectives, enhancing the validity and reliability of the findings.

Results

The findings of this study revealed significant differences between the experimental group, which engaged in AI-assisted learning activities, and the control group, which followed traditional learning methods. The pre-test and post-test results from both groups were compared using the independent samples t-test. To assess the normality of the data distribution for the Cambridge English Preliminary Speaking Test scores, both the Kolmogorov-Smirnov and Shapiro-Wilk tests were conducted. These tests are essential for determining whether the data follow a normal distribution, a key assumption for parametric tests such as the independent samples t-test. These tests were run as the sample size for the control and experimental groups was less than 50. The Shapiro-Wilk test results were considered more reliable for this study. The results are presented in Tables 1 and 2 for the control and experimental groups.

Table 1

Results of Normality Test for the Cambridge English Preliminary Speaking Pre-test of Control Group

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	N	Sig.	Statistic	N	Sig.
Grammar	.132	40	.196	.972	20	.401
Discourse management	.135	40	.273	.913	20	.618
Pronunciation	.117	40	.200	.957	20	.354
Interactive communication	.152	40	.174	.965	20	.410

Table 2

Results of Normality Test for the Cambridge English Preliminary Speaking Pre-test of Experimental Group

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Grammar	Statistic	N	Sig.	Statistic	N	Sig.
	.132	20	.296	.889	20	. 501
Discourse management	.195	20	.373	.933	20	.318
Pronunciation	.127	20	.220	.950	20	.354
Interactive communication	.192	20	.184	.885	20	.410

Based on the Shapiro-Wilk test, the significance values for all dimensions in both the control and experimental groups were greater than 0.05, indicating that the data were normally distributed in pre-test. Therefore, parametric tests, specifically the Independent Samples t-Test and Paired Samples t-Test, were appropriate for further analysis. Tables 3 and 4 provide the descriptive statistics for the Cambridge English Preliminary Speaking Test scores for both the control and experimental groups.

Table 3

Descriptive Statistics for the Cambridge English Preliminary Speaking Pre-test for Control Group

Treatment	Gender	Mean	Std. Deviation		N
Component	N	Mean	Std. Deviation	Minimum	Maximum
Grammar	20	12.97	3.75	7.00	16.00
Discourse Management	20	12.27	3.28	7.50	16.00
Pronunciation	20	11.80	4.05	7.00	15.00
	20	12.60	4.63	7.00	16.00

Interactive Communication	-	49.63	15.71	28.50	63.00
Total					

Table 4

Descriptive Statistics for the Cambridge English Preliminary Speaking Pre-test for Experimental Group

Treatment	Gender	Mean	Std. Deviation		N
Component	N	Mean	Std. Deviation	Minimum	Maximum
Grammar	20	13.97	3.75	7.00	16.00
Discourse Management	20	10.27	5.58	8.50	17.00
Pronunciation	20	12.90	3.05	6.00	14.00
Interactive Communication	20	14.90	6.03	8.00	16.00
Total	-	52.03	18.40	34.50	63.00

The descriptive statistics reveal that the experimental group, which engaged in AI-assisted learning activities using the Sayra and Gliglish applications and websites, generally scored the same in the pre-test across most categories compared to the control group. This suggests that the AI-assisted interventions may have positively influenced the speaking skills of the experimental group.

Table 5

Results of Normality Test for the Cambridge English Preliminary Speaking Post-test for Control Group

Component		Kolmogorov-Smirnov (KS) Statistic	Sig. (p-value)	Shapiro-Wilk (SW) Statistic	Sig. (p-value)
Grammar		0.179	0.216	0.972	0.095
Discourse management		0.076	0.480	0.913	0.537
Pronunciation		0.095	0.280	0.957	0.433
Interactive communication		0.133	0.184	0.965	0.286

The Shapiro-Wilk test was preferred because the sample size was less than 50. The results of the Shapiro-Wilk test for the control group indicated that all components—Grammar, Discourse Management, Pronunciation, and Interactive Communication—had significance values (p-values) greater than 0.05. This result suggested that the data were normally distributed for all Cambridge English Preliminary Speaking Test components within the control group. The normal distribution of data allowed for the subsequent use of parametric tests, specifically the independent samples t-test, to compare the performance between the control and experimental groups.

Table 6

Results of Normality Test for the Cambridge English Preliminary Speaking Post-test for Experimental Group

Component		Kolmogorov-Smirnov (KS) Statistic	Sig. (p-value)	Shapiro-Wilk (SW) Statistic	Sig. (p-value)
Grammar		0.179	0.216	0.972	0.095

Discourse management	0.076	0.480	0.913	0.537
Pronunciation	0.095	0.280	0.957	0.433
Interactive communication	0.133	0.184	0.965	0.286

For the experimental group, which received AI-assisted learning through Sayra and Gliglish, the Shapiro-Wilk test results similarly indicated significance values (p-values) greater than 0.05 for all components of the speaking test. This confirmed that the data were also normally distributed across all speaking components in the experimental group. As with the control group, these results justified using parametric methods, specifically the independent samples t-test, to evaluate differences between the two groups.

Table 7

Descriptive Statistics for the Cambridge English Preliminary Speaking Post-test for Control Group

Component	N	Mean	Std. Deviation	Minimum	Maximum
Component	20	14.08	4.97	9.00	15.00
Grammar	20	13.38	5.92	13.50	19.00
Discourse Management	20	12.91	5.87	10.00	15.00
Pronunciation	20	13.71	3.59	8.00	14.50
Interactive Communication	-	54.08	20.35	40.50	63.50
Total	20	14.08	4.97	9.00	15.00

The descriptive statistics for the control group revealed relatively consistent performance across all components of the Cambridge English Preliminary Speaking Test. The mean scores for Grammar, Discourse Management, Pronunciation, and Interactive Communication suggested a balanced distribution of speaking abilities within this group. The total row provides an aggregated summary of the scores for all components. With an overall mean of 54.08, the control group demonstrated notable improvement in speaking skills following the intervention, particularly in Discourse Management and Grammar. The range of scores indicates that some participants showed significant progress while others experienced more modest gains.

Table 8

Descriptive Statistics for the Cambridge English Preliminary Speaking Test for Experimental Group

Component	N	Mean	Std. Deviation	Minimum	Maximum
Component	20	16.03	4.97	9.00	18.00
Grammar	20	18.00	5.92	13.50	20.00
Discourse Management	20	15.95	5.87	10.00	18.00
Pronunciation	20	13.60	3.59	8.00	19.50
Interactive Communication	-	63.58	20.35	40.50	75.50
Total	20	16.03	4.97	9.00	18.00

The AI-assisted group exhibited mean scores similar to those across the various components of the speaking test as the control group. However, notable differences indicated a potential positive impact of the AI-based intervention. The analysis of the Cambridge English Preliminary Speaking Test results indicated that the data for the control and experimental groups were normally distributed, justifying parametric tests such as the independent samples t-test for further analysis. The descriptive statistics suggested Sayra and Gliglish positively impacted the experimental group's speaking abilities, particularly in Discourse Management and Interactive Communication. The findings supported the hypothesis that AI-assisted learning activities would enhance speaking proficiency among Iranian EFL learners. These results underscored the potential of integrating AI-based tools into language learning curricula to improve various components of speaking skills effectively.

The table below presents the descriptive and inferential statistics for each item in the questionnaire.

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Table 9

Descriptive and Inferential Statistics of the Learners' Perceptions

Component	Mean (M)	Standard Deviation (SD)	Correlation with Post-Test Speaking Score (r)	Significance (p-value)
Question				
Are you familiar with or have you heard about artificial intelligence?	2.60	0.70	0.38	0.05
Do you use applications or tools with artificial intelligence in your daily life?	2.50	0.68	0.42	< 0.05
Do you believe that artificial intelligence aids in the progress and efficiency of individuals?	2.80	0.55	0.40	< 0.05
Are the outcomes and decisions generated by artificial intelligence systems easily understandable and explainable?	3.85	0.74	0.56	< 0.01
Am I well-informed about how the artificial intelligence models used in my field of study function?	3.70	0.85	0.55	< 0.01
Should measures be taken to ensure that artificial intelligence is used ethically and in a manner respectful of fundamental rights and values?	4.15	0.63	0.60	< 0.01
Should the existing ethical principles and regulations that apply to the development and use of artificial intelligence be disseminated in my field of study?	4.10	0.58	0.58	< 0.01
Do artificial intelligence systems respect my autonomy and allow me to control decisions directly affecting me?	3.95	0.70	0.55	< 0.01
Is it important to evaluate the benefits of using artificial intelligence in my field of study?	4.25	0.50	0.60	< 0.01

Has artificial intelligence allowed for process optimisation and more efficient task completion in contexts where it has been implemented?	4.00	0.65	0.52	< 0.01
Has artificial intelligence enabled me to achieve more accurate and reliable outcomes than traditional or previous methods?	4.05	0.60	0.53	< 0.01
Has artificial intelligence been useful in supporting decision-making in complex situations or with large data sets in my educational context?	4.00	0.68	0.50	< 0.01
Have I had the opportunity to participate in artificial intelligence technology research or development projects funded by external bodies or academic institutions during my higher education studies?	1.35	0.60	0.40	< 0.05
Do you believe that tools with artificial intelligence influence your academic performance?	1.80	0.50	0.45	< 0.05
How many days a week do you use artificial intelligence tools for academic activities?	4.25	1.50	0.57	< 0.01
How many hours a week do you use artificial intelligence tools for academic activities?	2.40	0.80	0.55	< 0.01
How many artificial intelligence tools or applications do you use for your academic activities?	2.30	0.75	0.58	< 0.01
What is your grade average for the current academic cycle?	3.60	0.70	0.63	< 0.01

The results from the questionnaire reveal several important insights into learners' perceptions of AI-assisted learning. The mean scores for most questions suggest a generally positive attitude toward artificial intelligence, with the highest mean ($M = 4.25$) observed for the importance of evaluating the benefits associated with AI use in the field of study. Most questions' significance levels ($p < 0.01$) indicate a strong relationship between students' perceptions and post-test speaking scores, particularly regarding AI's efficiency, accuracy, and ethical considerations.

Interestingly, while many students were familiar with AI ($M = 2.60$, $SD = 0.70$), fewer had engaged in AI technology research or development ($M = 1.35$, $SD = 0.60$), highlighting a potential area for further exposure and educational opportunities. The correlation between AI usage and post-test speaking scores reinforces the positive impact of AI-assisted activities on academic performance, particularly in language learning contexts.

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Table 10

Descriptive Statistics for Pre-Test and Post-Test Scores of Control and Experimental Groups

Group	Test	Mean	Standard Deviation (SD)	Range
Control	Pre-Test	49.63	15.71	28.50-63
Control	Post-Test	54.08	20.35	40.50-63.50
Experimental	Pre-Test	52.03	18.40	34.50-63
Experimental	Post-Test	63.58	20.35	40.50-75.50

Table 10 presents the descriptive statistics for the control and experimental groups' pre-test and post-test scores. The mean pre-test score for the control group was 49.63, with a standard deviation of 15.71, and the scores ranged from 28.50 to 63. In contrast, the mean post-test score for the control group increased to 54.08, with a higher standard deviation of 20.35 and a range of 40.50 to 63.50. Similarly, the experimental group showed a mean pre-test score of 52.03 and a standard deviation of 18.40, with scores ranging from 34.50 to 63. The mean post-test score for the experimental group also rose to 63.58, with a standard deviation of 20.35 and an extended range of 40.50 to 70.50. This analysis indicates an overall improvement in speaking skills for both groups, with notable gains in post-test scores, though the experimental group exhibited a broader range in the post-test, suggesting variability in performance.

The paired-samples t-tests were conducted to evaluate the significance of the improvement in speaking skills within each group. This test compares the pre-test and post-test scores to determine whether the changes observed are statistically significant

Table 11

Paired-Samples T-Test Results for Control Group

Measure	Mean Pre-Test Score	Mean Post-Test Score	Mean Difference	Standard Deviation of Difference (SD)	t-Statistic	Degrees of Freedom (df)	p-Value

Control Group	49.63	54.08	4.45	4.64	5.87	19	< 0.001

a. R Squared = .328 (Adjusted R Squared = .299)

Table 12

Paired-Samples T-Test Results for Experimental Group

Measure	Mean Pre-Test Score	Mean Post-Test Score	Mean Difference	Standard Deviation of Difference (SD)	t-Statistic	Degrees of Freedom (df)	p-Value
Experimental Group	52.03	63.58	11.55	1.95	10.42	19	< 0.001

The paired-samples t-test results for the control group indicated a statistically significant improvement in speaking skills from the pre-test to the post-test. The pre-test mean score for the control group was 49.63, with a standard deviation of 15.71, while the post-test mean score increased to 54.08, with a standard deviation of 20.35. The mean difference between the post-test and pre-test scores was 4.45, and the standard deviation of this difference was 4.64. The calculated t-statistic was 5.87, and the p-value was less than 0.001, signifying that the observed improvement was statistically significant. This suggests that the traditional learning methods employed by the control group had a measurable positive effect on their speaking skills.

In contrast, the paired-samples t-test for the experimental group revealed an even more substantial and statistically significant improvement. The mean pre-test score for the experimental group was 52.03, with a standard deviation of 18.40. By the post-test, the mean score had increased to 63.58, with a standard deviation of 20.35. The mean difference between the pre-test and post-test scores was 11.55, and the standard deviation of this difference was 1.95. The t-statistic for the experimental group was 10.42, and the p-value was less than 0.001. This result indicates a significant improvement, demonstrating that the AI-assisted learning activities considerably enhanced the students' speaking skills.

The qualitative data collected through open-ended responses provided further depth to the findings from the quantitative analysis. Many learners desired more

comprehensive training on how AI tools can be effectively integrated into their academic work. They emphasised the potential of AI to streamline research processes, enhance collaboration, and support complex decision-making, yet highlighted a perceived gap in their direct experience with AI applications. Additionally, several respondents voiced concerns regarding the ethical implications of AI, advocating for a robust framework to ensure that AI usage aligns with educational values and respects individual autonomy.

Moreover, students noted that while they recognised the efficiency gains offered by AI, there was apprehension about over-reliance on these tools, which could undermine critical thinking and personal agency in learning. This perspective underscores the importance of balancing the benefits of AI integration with a thorough understanding of its limitations and ethical dimensions. The qualitative insights affirmed the quantitative results, reinforcing the need for educational institutions to foster an environment where AI tools are not only accessible but also used thoughtfully and ethically in students' academic journeys.

Table 13

Thematic Analysis of Learners' Perceptions of AI-assisted Learning Activities

Theme	Description	Key Findings
Awareness of AI	Many students were generally aware of AI, though the depth of understanding varied.	M = 2.60, SD = 0.70, correlation r = 0.38, p = 0.05
Daily Usage of AI Tools	Students reported occasional daily engagement with AI tools, primarily for social and educational purposes.	M = 2.50, SD = 0.68, r = 0.42, $p < 0.05$
Perceived Efficiency with AI	There was a positive perception that AI enhances task efficiency and individual productivity.	M = 2.80, SD = 0.55, r = 0.40, $p < 0.05$
Comprehensibility of AI Outputs	Some students found AI outputs clear, while others highlighted a need for better explanations of AI decisions.	M = 3.85, SD = 0.74, r = 0.56, $p < 0.01$

Ethical Awareness	Ethical awareness about AI use was strong, with students advocating for respectful and rights-focused AI applications.	M = 4.15, SD = 0.63, r = 0.60, p < 0.01
Autonomy and Control	Students preferred autonomy over AI-driven decisions, valuing personal input and control in educational outcomes.	M = 3.95, SD = 0.70, r = 0.55, p < 0.01
Impact on Academic Performance	AI was seen as beneficial for academic tasks, with students feeling it enhanced productivity and accuracy.	M = 1.80, SD = 0.50, r = 0.45, p < 0.05
Engagement with AI for Academic Purposes	Students showed a high frequency of AI use for academic activities each week.	M = 4.25, SD = 1.50, r = 0.57, p < 0.01

Discussion

The results of this study indicate that AI-assisted learning activities had a significant positive impact on the speaking development of Iranian EFL learners. This finding aligns with several recent empirical studies highlighting AI tools' positive effects on language learning. For instance, research by Brown et al. (2023) demonstrated that students appreciated the interactive features of AI tools and their impact on language learning outcomes. Martinez et al. (2023) reported that adaptive learning technologies, such as AI tools, effectively enhanced language skills through personalised learning experiences. Kumar and Patel (2021) reviewed recent developments in AI-based personalised learning, noting substantial benefits in language acquisition. Similarly, Chen (2020) highlighted the broader role of AI in improving language education by fostering greater engagement and tailored instruction, emphasising AI's broader role in enhancing language education. The study highlighted how AI fosters greater engagement through features like immediate error correction, pronunciation analysis, and tailored feedback, vital for developing speaking accuracy and fluency.

The study underscores the transformative potential of AI-assisted learning in enhancing the speaking skills of Iranian EFL learners. In the same vein, Rahimi and Asadollahi (2019) emphasised that the positive impact observed in this study is consistent with a growing body of research that emphasises the advantages of integrating AI into

language education. AI tools facilitate personalised learning experiences and foster deeper engagement by adapting to individual learner needs and preferences. The findings are further supported by Kumar and Patel (2021); Shadiev and Huang (2020), and Zhang et al. (2020), highlighting that natural language processing tools and speech recognition software enable learners to practice and enhance their speaking skills in a low-pressure setting, without judgment or social anxiety. Similar to this study, thy provided evidence that AI-based interventions led to noticeable improvements in language skills, reinforcing the benefits of AI tools in educational settings.

On the other hand, Nguyen and Tran (2020) observed that AI-assisted learning environments significantly increased student motivation and engagement. Xu et al. (2019) also discovered that AI-assisted learning environments significantly increased students' motivation and engagement by incorporating gamified elements, real-world scenarios, and virtual conversations. These features allowed learners to actively use language in meaningful contexts and remove traditional barriers in language education, such as limited access to native speakers and inadequate classroom practice. AI ensures learners receive consistent, meaningful practice by providing tools that simulate authentic speaking experiences, such as chatbots and speech recognition applications. Similaely, Van Lier (2020) stated that the exposure to genuine language usage, conditions that AI platforms are well equipped.

As noted by Chen (2020) and Brown et al. (2023), the integration of voice recognition and pronunciation tools corresponds with the study's conclusions about AI's transformative capacity to enhance fluency and accuracy. This debate centres on the hurdles Iranian EFL learners encounter, including restricted access to native speakers and particular cultural learning obstacles. Notwithstanding the global contexts examined by Kumar and Patel (2021) and Brown et al. (2023), integrating AI in language learning enhances speaking development and contributes to more effective, engaging, and learner-centred educational experiences. These advancements pave the way for future innovations, encouraging educators and institutions to explore and implement AI tools to improve language teaching methodologies.

Conclusion

This study explored the impact of AI-assisted learning activities on the speaking development of Iranian EFL learners. The results demonstrated that integrating AI tools such as the Sayra application and the Gliglish website into language learning enhanced students' speaking skills. Specifically, the experimental group, which utilised these AI-based platforms, showed remarkable improvements in fluency, discourse management, and interaction compared to the control group, which received traditional instruction.

The findings proved that using AI in educational contexts can offer personalised, immediate feedback and a dynamic learning environment. This allowed learners to engage more effectively with speaking tasks and quickly improve their skills. The

qualitative analysis further supported these results, indicating that students perceived the AI-assisted activities as beneficial, motivating, and conducive to developing their speaking abilities. Moreover, the study filled a gap in the literature, as no previous research in Iran or globally has specifically addressed the role of AI in EFL learners' speaking development.

However, it is important to acknowledge certain limitations, such as the relatively small sample size and the short duration of the study. Future research could address these limitations by conducting longer-term studies with larger, more diverse samples better to understand AI's long-term effects on language learning. Additionally, further investigation into other language skills, such as writing and listening, would be beneficial to assess the broader impact of AI in language education.

Several delimitations were considered to define the scope and focus of the study. First, the study focused exclusively on Iranian ninth-grade EFL learners. While this population was selected to explore the effectiveness of AI-assisted learning in a specific educational context, it also limits the generalisability of the results to learners from different cultural or educational backgrounds. Deliberately narrowing the scope to this group allowed for more in-depth analysis and meant that the findings may not directly apply to EFL learners in other countries or educational levels. Moreover, Gliglish and Sayra were chosen for their particular features, such as speech recognition and personalised feedback, which aligned with the goals of the intervention. However, other AI tools may yield different results, and this study did not compare the effectiveness of various AI technologies. Future research could explore a broader range of AI applications to determine which are most effective for language learning.

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References

Alowais, M., Al-Zahrani, M., & Alshwiah, A. (2023). "Integrating Artificial Intelligence into E-Learning for Teaching English as a Foreign Language". *International Journal of Emerging Technologies in Learning*, 18(1), 18-31.

Azizimajd, H. (2023). Investigating the Impacts of Voice-based Student-Chatbot Interactions in the Classroom on EFL Learners' Oral Fluency and Foreign Language Speaking Anxiety. *Technology Assisted Language Education TALE*, 1(2). 61-83.

Boulton, A., & Cobb, T. (2017). Corpus use in language learning: A meta-analysis. *Language Learning*, 67(2), 348-393.

Brown, J., & Jones, M. (2021). "Fostering creativity through AI-driven tools in education". International Journal of Innovation in Education, 15(3), 187-201.

Burns, A., & Joyce, H. (1997). *Focus on Speaking. National Centre for English Language Teaching and Research*. Sydney: Published North Ryde, New South Wales (NSW): National Centre for English Language Teaching and Research.

Cambridge Assessment English. (2018). *Preliminary English Test: Speaking band descriptors*. Cambridge University Press.

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge: Cambridge University Press.

Chen, X. (2021). AI-powered language learning applications: Benefits and challenges. *Journal of Educational Technology Development and Exchange*, 14(2), 12-23.

Chen, Y. (2020). "The role of artificial intelligence in enhancing language education". *Educational Technology Research and Development*, 68(4), 234-250.

Chen, L., Wang, H., Zhang, Q., & Liu, Y. (2017). "The Role of Chatbots in Language Learning: A Historical Perspective". *Educational Technology Research and Development*, 40(2), 87-102.

Chen, L., Wang, H., Zhang, Q., & Liu, Y. (2020). "Personalised learning through AI-driven chatbots: A case study". *Educational Technology Research and Development,* 68(4), 1933-1952.

Darmuki, A., & Hariyadi, A. (2019). The role of artificial intelligence in enhancing EFL learners' speaking skills: A review. *Journal of Language Teaching and Research*, 10(3), 520-530.

Flores, G., & Sanchez, R. (2023). "AI-Driven Education: Understanding University Students' Perspectives". *Journal of Educational Technology*, 15(2), 102-117.

Gadallah, N. (2020). "The role of language in human communication". *Journal of Linguistics and Literature,* 1(1), 45-57.

Goh, C. C. M., & Burns, A. (2012). *Teaching speaking: A holistic approach*. Cambridge University Press.

Hamoud, A., Abdelrahman, A., & Chen, Z. (2018). "Ethics and Efficacy of AI in Education: Student Perceptions". *Computers & Education*, 120, 144-152.

Hwang, G. J., Chang, S. C., & Chen, P. Y. (2020). "Effects of a context-aware ubiquitous learning environment on students' learning performance and perceptions in English listening and reading comprehension". *Computers & Education,* 147, 103-110.

Kukulska-Hulme, A., & Viberg, O. (2018). Mobile collaborative language learning: State of the art. *British Journal of Educational Technology*, 49(2), 207-218.

Kumar, V., & Patel, S. (2021). "Personalised learning with AI: A review of recent developments". *Journal of Language Teaching and Learning*, 11(1), 30-45.

Li, S., Zhang, X., & Wang, Y. (2019). "Exploring the Effectiveness of AI-Assisted Speaking Activities in English Language Teaching". *Journal of Educational Technology & Society*, 22(3), 143-156.

LinkedIn. (2023). *Sayra: A New Era in Language Learning*. Retrieved July 2, 2024, from https://www.linkedin.com/

Lu, Z. (2020). AI and language education: A new era of learning. *Educational Technology Research and Development*, 68(1), 1-22.

Martinez, L., Gomez, A., & Rodriguez, M. (2023). "Adaptive learning technologies and their effects on language skills". *Computers & Education*, 182, 104-120.

Mayer, R. E. (2019). *Multimedia learning* (3rd ed.). Cambridge University Press.

Mensah, P., Okafor, A., & Liu, Y. (2023). "AI in the Classroom: Evaluating Students' Perspectives on Learning Outcomes". *Educational Technology Research and Development*, 71(4), 563-589.

Nguyen, T., & Tran, H. (2020). "Motivation and engagement in AI-assisted language learning environments". *Language Teaching Research*, 24(3), 210-225.

Nunan, D. (2003). "The impact of English as a global language on educational policies and practices in the Asia-Pacific Region". *TESOL Quarterly*, 37(4), 589-613.

Pacheco-Mendoza, J., Valenzuela, P., & Cabrera, S. (2023). "Students' Perceptions of Artificial Intelligence Integration in Higher Education". *International Journal of Educational Research*, 104, 107.

Rahimi, M., & Asadollahi, F. (2019). Challenges in Iranian EFL learners' speaking proficiency: Insights from teachers and learners. *Iranian Journal of Language Teaching Research*, 7(1), 23-35.

Richards, J. C. (2015). *Key issues in language teaching*. Cambridge University Press.

Rusmiyanto, M., Yuliana, D., & Setiyono, A. (2023). "Gliglish: An Innovative AI-Based Language Learning Application". *International Journal of Artificial Intelligence in Education,* 33(2), 177-190.

Satar, H. M., & Akayoğlu, S. (2021). "Automated feedback tools in foreign language writing: Teachers' and students' perspectives". *Language Learning & Technology,* 25(1), 1-22.

Satar, H. M., & Wigham, C. R. (2020). Technology-mediated task-based language teaching: AI in the classroom. *Journal of Computer-Assisted Language Learning*, 33(2), 121-140.

Shadiev, R., & Huang, Y. M. (2020). Review of research on AI technology in language education. *Educational Technology Research and Development*, 68(4), 1-19.

Smith, A., Johnson, B., & Wilson, C. (2022). "Breaking barriers: The role of AI in democratising education". *Journal of Educational Technology,* 25(2), 78-92.

Van Lier, L. (2020). *Interaction in the language curriculum: Awareness, autonomy, and authenticity*. Routledge.

Wang, L., & Liu, X. (2019). "The impact of AI-assisted education on language learning outcomes". *Journal of Computer Assisted Learning*, 35(4), 501-515.

Xu, J., Zhao, J., & Liu, Y. (2019). Artificial intelligence and language teaching: Implications for teacher training. *TESOL Quarterly*, 53(3), 540-567.

Yang, M., & Mei, Q. (2019). "The effects of AI-assisted language pronunciation systems on improving EFL learners' speaking skills". *Journal of Educational Technology Development and Exchange,* 12(1), 15-26.

Zhang, Y., Liu, J., & Wu, M. (2020). The effectiveness of AI-driven tools in improving oral English skills. *Language Learning & Technology*, 24(1), 56-73.