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ARTICLE

Exploring EFL Learners' Perceptions on the Use of AI-Powered Conversational Tools to Improve Speaking Fluency: A Case Study at Majmaah University

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ABSTRACT

It is widely known that technology, especially artificial intelligence (AI), presents innovative opportunities for improving English language learning skills. However, little is known about the effect of AI-mediated activities on learners' speaking skills. This study, therefore, aims to explore the EFL learners' attitudes and perceptions of the use of AI-powered conversational tools to improve speaking fluency. Forty EFL learners at Majmaah University were randomly assigned to respond to a structured questionnaire to collect quantitative data, followed by an individual semi-structured interview in the qualitative phase. Thematic analysis was employed for qualitative data, while descriptive and inferential statistics through SSPS were used for quantitative data. The findings of the study indicate that EFL learners at Majmaah University have a positive attitude and perceptions toward using AI-powered conversational tools to enhance and promote their speaking fluency. Moreover, EFL learners at Majmaah University agreed that AI-powered conversational tools improved their speaking fluency, and they felt that their pronunciation was enhanced after using these tools. Additionally, the learners reported significant limitations and challenges, including technical difficulties, such as pronunciation recognition and cultural misinterpretations. In addition, most of the EFL learners in the interviews reported that the lack of personalized feedback was a crucial challenge. The study provides valuable insights for language educators and researchers regarding technology-mediated instruction in language classrooms.

Keywords: EFL Learners; Artificial Intelligence (AI); AI-Powered Conversational Tools; Speaking Fluency; Technology

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1. Introduction

The application and implementation of artificial intelligence (AI) chatbots in education, especially in language learning and teaching, has been a common occurrence. There are many advantages of AI in language acquisition, like the enhancement of the efficiency of the process, students' increased involvement in the teaching-learning process, and the possibility of accessing the content from any place and any device[1, 2]. To enhance the educational experience of EFL learners, it is essential to investigate students' attitudes and perceptions towards technology in education in general and AI-powered technologies in particular[3, 4]. These technologies also offer learners functions such as instant response, customized content, and self-directed time. However, not much in this regard has been critically explored to examine their effectiveness and acceptability among EFL Saudi learners. Understanding learners' attitudes and perceptions can guide better integration strategies and enhance learning outcomes. For helping EFL learners with interactive practice situations, AI-powered conversational agents, such as chatbots, are emerging as effective tools for enhancing speaking skills. Utilization of conversational chatbots can positively scaffold English as a Foreign Language (EFL) learners' speaking and expression performance[5]. Conversational agents like AutoTutor simplify one-on-one dialogues and confirm learners' cognitive and emotional states, thus promoting effective communication skills[6]. These tools engage in tutorial dialogues, adapting to the learner's cognitive and emotional states, which fosters a supportive learning environment[6]. Animated agents, such as Baldi, utilize visual speech technology to teach vocabulary and grammar, enhancing phonological awareness and articulation through realistic speech modeling[7]. Conversational agents can facilitate a deeper understanding, offer effective positive feedback, and facilitate explanation and learning performance[8]. Although extensive scholarly investigation exists regarding artificial intelligence within the educational sphere, a limited number of studies have concentrated explicitly on the perceptions of English as a Foreign Language (EFL) learners regarding the utilization of conversational agents to enhance speaking fluency. Therefore, this study seeks to understand EFL learners' perceptions of AI-powered conversational agents, and their effectiveness in improving their speaking fluency, and identify the challenges EFL learners face when using these technologies. The following sections outline the research questions, current and relevant studies, and a glimpse of the study design and data analysis.

Research Questions

(1) What are EFL learners' perceptions of using AI-powered conversational agents for improving speaking fluency?
(2) To what extent do learners believe these tools improve their oral proficiency?
(3) What are the challenges and limitations experienced by EFL learners when using AI conversational agents?

2. Literature Review

The integration of artificial intelligence (AI) in language learning has attracted significant attention, specifically regarding its impact on improving speaking skills. Benefits and challenges perspectives have been discussed in many studies investigating how AI tools improve the speaking of an L2[9]. The development of the L2 speaking skill and the self-regulatory process are effectively developed by AI-driven instruction among language learners; the potential of AI technology is to optimize experiences of teaching and learning languages and to promote learners' autonomy and metacognitive strategies in the speaking domain[10]. More recently, numerous research works focus on the role of AI during the process of speaking skills development among English language learners[11–13]. For example, a comparison has been made between the learner-AI interaction and a learner-native speaker interaction and found out the critical role of AI in developing learners' speaking skills[11]. On one side, a comparison between human-human interaction and AI-human interaction finds that learners do have more extended interaction while working with AI rather than interacting with peers[12]. It was also supported when it was found that AI-assisted instruction positively influenced learners' overall speaking performance in regard to features of fluency, grammatical accuracy, lexicon, and pronunciation[13].

AI-driven adaptive systems bring an innovative approach to English-speaking learning through personalized lessons to match the needs and learning styles of each individual. Such real-time performance analysis systems provide learners with support to progress at their own pace, motivating engagement and efficiency[14]. AI-mediated interactive

speaking activities proved to be more effective in enhancing EFL speaking skills, besides that, the learners showed positive attitudes and perceptions about the proposed AI-mediated speaking instruction[15]. Speaking exercises are not adequate in traditional classes; AI tools provide a better avenue for learners to engage in more spontaneous speech, which forms the basis of language acquisition[16]. The integration of AI into the language learning environment provides more interactivity and participation in speaking exercises, which is significant in improving communicative ability[17].

Speaking fluency in EFL is the ability to communicate naturally and effectively, minimizing hesitations, which is critical for successful interaction in diverse contexts, including business and academia[18]. Fluency allows learners to express ideas clearly and confidently, facilitating better interaction in diverse contexts[19]. Vlogging is one of the authentic oral production activities in which engagement increases EFL learners' fluency by practicing in real contexts. On the other hand, using this method also provides significant improvements in the metric of fluency concerning speed and pauses[20]. Teaching conversational gambits, or phrases that facilitate dialogue, improves fluency. In the study, it was noted that learners who used these gambits confirmed better scores in fluency, emphasizing their role in spontaneous communication[21]. Chunking and the use of multiword phrases promote fluency in that learners can produce the language more naturally. For instance, in an experimental study, it was found that students who practiced chunking showed remarkable improvement in speaking fluency[22]. Automatization of language through formulaic expressions allows learners to access language automatically for fluency. Therefore, it compensates for the limitations in short-term memory and hence promotes smoother communication[23].

Perceived usefulness, ease of use, self-efficacy, and social influence are some of the most important factors that could affect EFL learners in their perception towards using technology in language learning. These, in essence, improve the deeper integration of technology into language education[24]. It has been stated that the learners' beliefs about the efficacy of technology have a significant effect on their attitudes[3]. In other words, attitudes are invariably linked to performance expectancy, a belief that technology will enhance learning outcomes. Perception of ease of use is also a determining factor; that is, the easier it is to use, the more likely learners will be to use technology[25]. Confidence in using technology is another very clear determinant of favorable attitudes. Higher self-efficacy ensures higher acceptance and intention for technology use in language learning[25]. Social factors such as peer and teacher support importantly influence the learners' attitudes. On the other hand, motivational acceptance of technology in learning contexts may be increased by positive reinforcement in these social circles. Even as these factors tend to contribute positively towards attitudes, some learners may still be resistant due to differing degrees of proficiency with technology or negative past experiences with technology in education[3]. This highlights the need for tailored approaches to foster a more inclusive and supportive learning environment.

3. Methodology

3.1. Research Design

The study employed a mixed-methods approach, specifically an explanatory sequential design, to manage and analyze the inherent constraints of qualitative and quantitative methodologies. Quantitative data were collected through a structured survey distributed to 40 EFL students at Majmaah University during the academic year 1446AH. This quantitative method aimed to gather insights into EFL learners' perceptions of the use of AI-powered conversational agents to improve speaking fluency. Following the quantitative, semi-structured interviews were conducted with a subset of 6 participants from the same group. This qualitative phase aimed to present deeper insights into the quantitative results to allow a more comprehensive analysis of the effectiveness of these agents in improving speaking fluency and identifying the challenges learners face when using these technologies. The quantitative data were analyzed using descriptive statistics, while the qualitative data were examined through thematic analysis to identify emerging themes related to learners' attitudes and perceptions.

3.2. Participants

The quantitative phase of this study included a substantial sample of 40 participants. The sampling procedure involved purposive sampling for the quantitative phase to

ensure participants had relevant experience with AI-powered conversational agents. The researcher utilized a survey to gain a thorough comprehension of EFL learners' attitudes and perceptions on the use of AI-powered conversational agents to improve speaking fluency. This sample served as the purposive sample for qualitative data also, containing 6 interview participants. The inclusion criteria required participants to be (i) students who have used or are using AI-powered conversational agents, (ii) be willing to participate in recorded interviews with the researcher, and (iii) ensure an equal representation of both male and female participants. This study was conducted in full compliance with ethical guidelines and received approval from the Directory of Scientific Research Ethics at Majmaah University. All participants were fully informed about the nature and purpose of the study, participating in the interviews and the questionnaire.

3.3. Instruments

A five-point Likert Scale gradient was employed in the survey instrument for its enhanced impartiality, alignment with research objectives, and participant friendliness. The questionnaire consisted of 15 items and was promptly uploaded to Google Forms, with the link distributed to all EFL learners at the Department of English Language, College of Education, Majmaah University. A two-week response period was allotted to the participants to respond to the survey. Experts' comments prompted modifications to improve the survey's content and language, ensuring its reliability and validity. Descriptive statistics were applied to analyze the responses, with three constructs featuring three questionnaire items each. Given the five-point Likert scale used, numerical values were assigned to responses for statistical operations. Furthermore, the qualitative data were collected through face-to-face interviews conducted over five days, recorded, transcribed, and analyzed for emerging themes using the directed analysis approach of interpretation. This process started with the creation of an initial coding framework based on the themes and the study questions. Then the interviews were transcribed verbatim, ensuring that the participants' exact words were captured. The analysis was then synthesized to present an overall picture of the EFL learners' attitudes and perceptions on the use of AI-powered conversational agents to improve speaking fluency.

4. Results

4.1. Questionnaire Results

This section presents, analyzes, and discusses the survey results. The following tables show the responses, which reflect the EFL learners' points of view on the questions and statements about their attitudes and perceptions of using AI-powered conversational tools to enhance the fluency of speaking. Each table presents one axis of the questionnaire. The abbreviations used in the tables are as follows: F (frequency), % (percentage), SA (Strongly Agree), A (Agree), N (Neutral), D (Disagree), and SD (Strongly Disagree). These were used to measure the participants' agreement or disagreement with various statements and questions regarding their perceptions of AI-powered conversational tools to promote speaking fluency.

As illustrated in **Table 1** and **Figure 1**, the results reveal that respondents overwhelmingly, with an average percentage of 93%, strongly agree or agree that EFL learners have a positive attitude about using AI-powered tools to develop speaking fluency, confidence, and enjoyment of language practice. Meanwhile, there is a strong preference for AI over traditional learning methods, though a small percentage still values conventional approaches. In summary, the perception of AI tools is that they are very helpful and motivating means to improve English speaking proficiency.

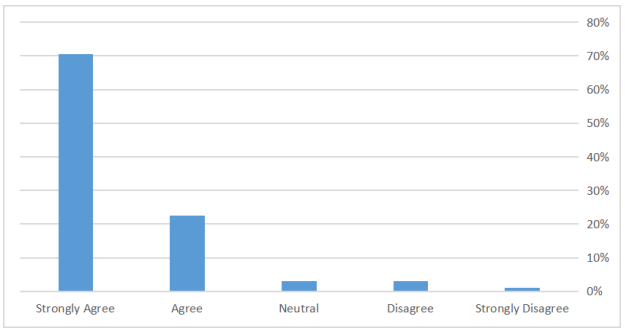

Figure 1. Perceptions of AI-powered conversational tools.

Table 2 and **Figure 2** highlight EFL learners' perceptions of the effectiveness of AI conversational agents in enhancing speaking fluency. **Table 3** provides detailed numerical data, including frequency (F) and percentage (%) for the statements and questions of the survey. According to the results,

93% of the respondents strongly agree or agree that AI-powered tools improved their speaking fluency and they felt that these tools improved their pronunciation. **Figure 3** presents this data in a visual format using bar charts to emphasize the level of agreement for the statements. The results showed that the majority of EFL learners have a positive attitude towards the effectiveness of AI-powered tools in enhancing and improving their speaking fluency.

Table 1. EFL learners' attitudes and perceptions about using AI-powered conversational tools to enhance speaking fluency.

No	Statement		SA	A	N	D	SD
1.	I feel at ease talking to AI-powered conversation agents.	F	22	15	3	0	0
		%	55%	37.5%	7.5%	0	0
2.	AI-powered conversational agents give useful feedback on my speaking.	F	25	14	1	0	
		%	62.5%	35%	2.5%	0	0
3.	Using AI-powered conversational agents improves my confidence in speaking English.	F	27	11	2	0	0
		%	67.5%	27.5%	5%	0	0
4.	I prefer using AI speaking tools over traditional language learning techniques.	F	27	6	3	4	0
		%	67.5%	15%	7.5%	10%	0
5.	AI-powered conversational agents can make speaking practice more enjoyable.	F	32	7	1	0	0
		%	80%	17.5%	2.5%	0	0
	Average	F	26.6	10.6	1.4	0.8	0
		%	66.5%	26.5%	3.5%	2%	0

Table 2. Effectiveness of AI tools in improving speaking fluency.

No	Statement		SA	A	N	D	SD
1.	Using AI-powered conversational agents has significantly improved my speaking fluency.	F	33	6	1	0	0
		%	82.5%	15%	2.5%	0	0
2.	AI-powered conversation partners help me with my pronunciation.	F	30	9	0	1	0
		%	75%	22.5%	0	2.5%	0
3.	The AI-powered tools improved my listening comprehension.	F	29	8	3	0	0
		%	72.5%	20%	7.5%	0	0
4.	Since practicing with AI agents, I can talk and think more quickly in conversations.	F	26	7	1	6	0
		%	65%	17.5%	2.5%	15%	0
5.	I consider it immensely satisfying to realize the improvement in my oral proficiency after using AI agents.	F	32	6	2	0	0
		%	80%	15%	5%	0	0
	Average	F	30	7.2	1.4	1.4	0
		%	75%	18%	3.5%	3.5%	0

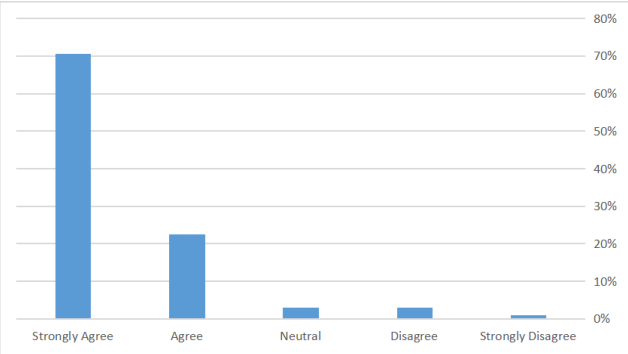

Figure 2. Effectiveness of AI tools in improving speaking fluency.

Table 3 and **Figure 3** present the challenges and limitations encountered by EFL learners at Majmaah University when using AI-powered conversational tools to enhance their speaking fluency. It indicates the frequency and percentage of responses for each statement. The results show that EFL learners face many challenges when using these tools. These challenges include maintaining dialogues, not recognizing variations in speech patterns, giving useless feedback, having little cultural awareness, and breaking down the technology. Even though the AI resources certainly show their benefits, represented a bit earlier, these results suggest that learners also detect visible areas for improvement within AI-supported language learning tools, especially related to communicative accuracy and the reliability of the technology.

Table 3. Challenges and limitations of using AI-powered conversational tools.

No	Statement		SA	A	N	D	SD
1.	I encounter difficulties in sustaining dialogues with artificial intelligence-driven conversational agents.	F	27	5	0	6	2
		%	67.5%	12.5%	0	15%	5%
2.	Artificial intelligence-driven conversation agents occasionally struggle to understand variations in my speech patterns.	F	18	19	3	0	0
		%	45%	47.5%	7.5%	0	0
3.	Sometimes AI agents provide irrelevant or wrong feedback.	F	30	8	2	0	0
		%	75%	20%	5%	0	0
4.	I find that AI agents lack cultural or contextual understanding when they converse.	F	32	7	1	0	0
		%	80%	17.5	2.5%	0	0
5.	Speaking practice with AI-powered tools might suffer from technical glitches in voice recognition and connectivity.	F	34	6	0	0	0
		%	85%	15%	0	0	0
	Average	F	28.2	9	1.2	1.2	0.4
		%	70.5%	22.5%	3%	3%	1%

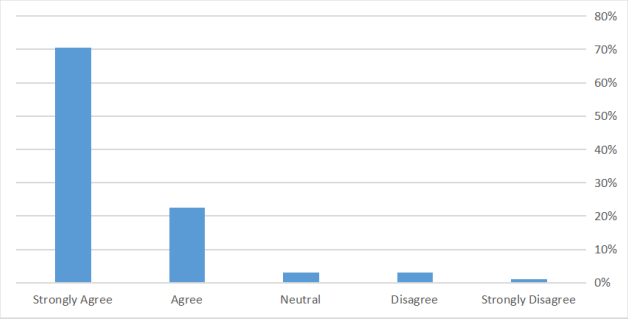

Figure 3. Challenges and limitations.

4.2. Interview Results

The interviews were conducted with six EFL learners from Majmaah University and yielded insightful reflections on their perceptions of the effect of AI-mediated activities on learners' speaking skills. Instead of simply listing their responses, a deeper analysis reveals several core themes around the learners' attitudes and perceptions about AI-powered tools in improving speaking fluency. These themes include the perceptions and experience with AI-powered conversational agents, their impact on speaking fluency and pronunciation, and EFL learners' challenges and limitations when using these tools. The following subthemes outline participants' experiences using and integrating AI in their language-learning journey.

4.2.1. Perceptions and Experience with AI-Powered Conversational Agents

All of the EFL learners reflected that AI-powered tools have a great role in developing fluency in speaking, especially in building initial speaking confidence. All of them found that AI tools are convenient and low-pressure for practice, especially since they are available anytime and can engage on various topics. The lack of scheduling and cost-effectiveness were highlighted as major benefits.

One of the EFL learners explained more clearly that "*AI-powered tools for developing fluency are free, more convenient than booking scheduled lessons with professional teachers, and you can learn anywhere*." One learner also highlighted that "*AI offers flexibility and can engage on a wide range of subjects without the need for scheduling*."

This view further justifies that EFL learners have a positive attitude toward using AI-powered conversational agents to improve speaking fluency, especially in the Saudi context, where speaking English fluently is increasingly required professionally and socially. This positive attitude towards using these tools to enhance speaking fluency emphasized by the EFL learners in the current study represents the same value given in the general literature. "AI-mediated interactive speaking activities proved to be more effective in enhancing EFL speaking skills; besides that, learners showed positive attitudes and perceptions about the proposed AI-mediated speaking instruction"[15].

4.2.2. Impact on Speaking Fluency and Pronunciation

Most respondents reported that AI-powered conversational tools helped enhance their fluency and pronunciation through repetition and other activities. However, the effectiveness varied depending on the specific AI tool used. One of the respondents clearly stated, "*AI has helped me a lot in improving my speaking fluency and pronunciation... I repeat the phrase more than once until I pronounce the words correctly.*" Another respondent contended, "*My speaking fluency has significantly improved since I first practiced with AI agents. Words that were hard to pronounce are now the easiest to say.*" What is mentioned by EFL learners in this study was noted by a previous experimental study which stated

that "chunking and the use of automated multiword phrases promote fluency in that learners can produce the language more naturally. Students who practiced chunking showed remarkable improvement in speaking fluency"[22]. These results confirm that AI-powered speaking tools could make a valuable contribution to enhancing speaking fluency and pronunciation, especially those with repetition and chunking strategies, thus confirming earlier studies that repetition and chunking are among the effective methods in language learning.

4.2.3. Challenges and Limitations

The respondents presented various challenges in the utilization of AI-powered tools for enhancing their speaking fluency; they emphasized the lack of detailed, personalized feedback as a major limitation. Technical challenges such as technical glitches, AI misunderstanding their dialects, and the need for subscriptions for full features. One of the participants mentioned, "*One challenge is the lack of personalized feedback. It cannot be compared to the same accuracy as humans*." Among these lines, another student stated "*Technical glitches, such as lag or misinterpretations, disrupt my flow and can be frustrating*." Surprisingly, one other student related that "*Sometimes AI doesn't understand me or my dialect and starts giving me things I didn't ask for*." These challenges may affect some of the EFL learners' perceptions of using AI-powered tools, as noted in the general literature "Perception of ease of use is also a determining factor; that is, the easier to use, the more likely learners will be to use technology"[25].

4.3. Discussion

The study explores Majmaah University EFL learners' perceptions and attitudes on the use of AI-powered conversational tools to improve speaking fluency. According to the results, the study indicated that EFL learners at Majmaah University have a positive attitude toward using AI-powered conversational tools to enhance and promote their speaking fluency. These results align with the previous research emphasizing the role of AI-mediated interactive speaking activities in fostering positive learner attitudes and promoting effective enhancement of EFL speaking skills[15].

Furthermore, the study points out that perceived usefulness and ease of use are crucial factors influencing learners' acceptance of technology in language learning, consistent with earlier findings[24]. The high percentage of learners preferring AI tools over traditional learning methods (67.5%) supporting the study which, argued that learners are more likely to use technology that they find easy and useful[25]. The adaptability and availability of AI-powered conversational tools, as emphasized by EFL learners in both the survey and interviews, correspond to the findings that emphasize the capability of AI to enhance language learning opportunities and foster learner independence[10]. Additionally, observations of extended practice sessions facilitated by AI tools align with studies showing the comfort learners exhibit when engaging with AI for language learning[12]. The results of the study also indicate that EFL learners at Majmaah University agreed that AI-powered conversational tools improved their speaking fluency, and they felt that their pronunciation was enhanced. These results are consistent with the research highlighting the positive effects of AI-assisted instruction on learners' fluency, grammatical accuracy, lexicon, and pronunciation[13]. This is also emphasized by the research which noted the effectiveness of chunking and repetition strategies in improving speaking fluency practices which many learners in this study engaged in when using AI-powered conversational tools[22]. Furthermore, the findings confirm the study emphasizing how automatization of language through formulaic expressions enables learners to interact with the language more naturally and promotes fluency[23]. The observation of the current study into learners' ability to repeatedly practice pronunciation with AI conversational tools also supports the effectiveness of these methods in generating smoother communication.

Moreover, EFL learners at Majmaah University reported many challenges including technical difficulties, such as struggling to understand variations of speech and cultural misinterpretations. This was particularly noted by the research which emphasized that technical challenges and perceptions of ease of use significantly influence learners' attitudes toward technology[25]. Also as discussed in the general literature of how AI conversational tools, while effective in encouraging spontaneous speech, often struggle with contextual and cultural nuances[16], a limitation echoed by the EFL learners at Majmaah University in this study. Additionally, the lack of personalized feedback, as expressed by most of EFL learners in the interviews, is a crucial is-

sue. This aligns with the study mentioned that personalized feedback is essential for meaningful improvements in speaking fluency[19]. Learners' frustration with the inability of AI conversational tools to provide this level of personalized attention may impact their long-term perceptions and use of such technology. The findings of this study confirm much of the literature on the role of AI in improving speaking fluency among EFL learners. AI-powered conversational tools are seen as highly effective, providing learners with a flexible, accessible, and low-pressure environment to practice speaking. However, the challenges and limitations concerning pronunciation accuracy, cultural understanding, and technical reliability persist, which again points to the necessity for improvements within AI-assisted language learning applications. Overall, while AI-powered conversational tools offer significant advantages for enhancing and promoting speaking fluency, further refinement is needed to address the technical and contextual limitations identified by learners.

5. Conclusions

The study explores and investigates EFL learners at Majmaah University perceptions and attitudes toward using AI-powered conversational tools to enhance and promote their speaking fluency. The results highlight the positive attitude of EFL learners towards using AI-powered conversational tools to enhance their speaking fluency in the process of language acquisition, in line with several educational research. EFL learners at Majmaah University agreed that AI-powered conversational tools improved their speaking fluency, and they felt that their pronunciation was enhanced. However, they also faced significant limitations and challenges, including technical difficulties, such as pronunciation recognition and cultural misinterpretations, in addition, most of the EFL learners in the interviews reported that the lack of personalized feedback, was a crucial challenge. These findings are supported by previous research and tailored to the specific context of Saudi Arabian EFL instruction. Overall, this study contributes to the ongoing discussion about EFL teaching and learning processes by highlighting the perspective of EFL learners at Majmaah University. In summary, AI-powered conversation tools represent a great addition and support to traditional methods of improving speaking fluency in a foreign language, but these challenges presented in this research have to be addressed first to maximize the potential support for EFL learners in pursuit of proficiency in the language is to be achieved. Further research could therefore seek to overcome such challenges by exploring the potential long-term impact caused by AI-powered tools to learners in terms of fluency and communicative competence.

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Institutional Review Board Statement

This study was conducted following ethical guidelines and standards for research involving human participants. Prior to participation, all individuals were provided with detailed information about the study and were required to sign an informed consent form, ensuring their voluntary participation and understanding of their rights. The research protocol was reviewed and approved by [Majmaah University Ethical Approval Committee]. No animals or pathology reports were involved in this research.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data is available on reasonable request to the corresponding author.

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Conflict of Interest

The author declares no conflict of interest.

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