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INVESTIGATING THE IMPACT OF CALL ON EFL STUDENTS' SPEAKING SKILLS AT ISLAMIC BOARDING SCHOOL: A MIXED-METHOD APPROACH

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Abstract: This study examines the impact of computer-assisted language learning (CALL) on speaking fluency and confidence among EFL students at Al-Mizan Islamic Boarding School in Indonesia. A mixed-method approach was employed, with quantitative data collected through pre-tests and post-tests and qualitative data through interviews and observations. Speaking fluency was measured based on speech flow, pace, continuity, naturalness, and intonation, while confidence was measured based on willingness to participate, composure, eye contact, vocal clarity, and engagement. Results revealed significant improvements, with the average fluency score increasing from 55.46 to 75.67 and confidence score from 58.63 to 80.58 after an eight-week CALL intervention. Qualitative findings highlighted that

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CALL's interactive features and real-time feedback supported students in improving their pronunciation and reducing speaking anxiety. This study underscores the effectiveness of CALL in enhancing speaking proficiency and fostering learner autonomy, particularly in EFL contexts with limited speaking opportunities. While the findings are promising, future research with larger samples and extended intervention periods is recommended to examine the long-term impacts of CALL. These results advocate for integrating CALL into language education to create more engaging and supportive learning environments that promote fluency and confidence development in EFL learners.

Keywords: *Computer-Assisted Language Learning (CALL), EFL students, Islamic boarding school, speaking fluency, speaking confidence*

INTRODUCTION

In an increasingly globalized world, proficiency in the English language has become a crucial asset. English is not only the dominant language in business, science, and technology but also serves as a lingua franca in many international interactions (Baker & Sangiamchit, 2019; Sung, 2020). For non-native speakers, the ability to communicate effectively in English, particularly in spoken form, holds significant value (Coppinger & Sheridan, 2022; Tajeddin et al., 2020). English as a Foreign Language (EFL) instruction plays a vital role in equipping learners with the skills necessary to navigate these global contexts (Alharbi, 2021; Y. F. Yang & Kuo, 2023). However, traditional classroom settings often face limitations in fully supporting the development of oral proficiency, particularly in environments where English is not widely spoken outside the classroom (Fischer & Yang, 2022; Islam & Stapa, 2021a; Wahyuningsih & Afandi, 2020). These limitations highlight the need for innovative pedagogical tools that can augment the learning experience and better prepare students for real-world communication. One such tool is Computer-Assisted Language Learning (CALL), a

technology-driven approach that has gained increasing attention in the field of language education (Al-khresheh, 2024; Meniado, 2023).

CALL refers to the use of computers and other digital technologies to facilitate language learning (Shadieff & Yu, 2024; Zhang & Zou, 2022). Over the past few decades, the evolution of CALL has transformed the way languages are taught and learned. Early applications of CALL focused on simple drills and practice exercises, but modern CALL tools incorporate multimedia, interactivity, and artificial intelligence to create more engaging and personalized learning experiences (Enayati & Gilakjani, 2020; Kuddus, 2022). These advancements have made CALL particularly effective in addressing specific language skills, such as listening, reading, writing, and speaking (Adara & Haqiyah, 2021; Aljameel, 2022; Shokrpour et al., 2019).

Of these, speaking remains one of the most challenging skills for EFL learners to master (M. R. A. Chen & Hwang, 2020; Menggo et al., 2019). Effective speaking involves not only a command of vocabulary and grammar but also fluency, accuracy, and the confidence to use the language in various contexts (Uztosun, 2021).

At the heart of language proficiency is the ability to communicate fluently and confidently in the target language (Pitura, 2022; Sha'Ar & Boonsuk, 2021). For many EFL learners, achieving this level of proficiency requires consistent practice and feedback – elements that are not always adequately provided in traditional classroom settings. In many EFL environments, particularly those in non-English-speaking countries, classroom instruction may be the only exposure students have to the language (Haim & Tannenbaum, 2022; Lee & Lee, 2019; Rose et al., 2021). This is often the case at Islamic boarding schools, or *pesantren*, in Indonesia, where students are taught English as part of a broader curriculum that also includes religious studies (Farid & Lamb, 2020; Muhajir, 2022). These institutions, while focused on academic and moral development, may face challenges in creating immersive language environments where students can actively practice their speaking skills (Mustapa et al., 2023; Masyhud et al., 2023)

Al-Mizan Islamic Boarding School, the site of this study, is one such institution. Like many boarding school, Al-Mizan places a strong emphasis on both religious education and academic achievement. English is taught as a foreign language, and students are encouraged to develop proficiency in speaking as part of their overall language competence (Aizawa et al., 2023; Soruç et al., 2021). However, the unique educational structure and the cultural context of the boarding school may limit opportunities for spontaneous spoken language practice. This is particularly true in classroom settings where instruction tends to be teacher-centered, and the focus is often on reading and writing rather than speaking (Akter et al., 2022). Furthermore, the traditional methods of teaching speaking skills—such as rote memorization, grammar-translation methods, and minimal interaction with authentic language materials—do not always align with the needs of learners in the 21st century, who require more interactive and communicative approaches to language learning (Abdallah, 2019; Islam & Stapa, 2021b).

In response to these challenges, CALL offers a promising solution. By integrating technology into the language-learning process, CALL provides students with access to a wide range of language resources that can be tailored to their individual needs and learning styles (Ahmed et al., 2020; Bahari, 2021). Multimedia tools, such as videos, audio recordings, and interactive exercises, allow students to engage with the language in a more dynamic and immersive way than traditional textbooks or worksheets (Girwidz & Kohnle, 2021; Hameed, 2020). Additionally, CALL applications often incorporate speech recognition software, which enables students to receive immediate feedback on their pronunciation and fluency (Chen, 2024; Jiang et al., 2023). This real-time feedback is critical for building confidence, as it allows learners to identify and correct errors without the pressure of performing in front of peers or teachers. Moreover, CALL platforms can simulate real-life communication scenarios, giving students the opportunity to practice speaking in contextually relevant situations (Balula et al., 2021; F. C. O. Yang et al., 2020).

The growing body of research on CALL has demonstrated its potential to significantly improve language learners' speaking skills. For example, Waode Aswad (2022) examined how CALL affects vocabulary learning, speaking skills, and foreign language speaking anxiety among Indonesian EFL learners. Their quasi-experimental study, involving 103 participants, revealed that CALL instruction led to significant improvements in both vocabulary learning and speaking skills, while also reducing anxiety levels. Similarly, Enayati and Gilakjani (2020) investigated the effect of CALL on vocabulary learning among Iranian intermediate EFL learners. Their quasi-experimental study, involving 61 participants, showed that CALL significantly improved learners' vocabulary acquisition, with the experimental group outperforming the control group. Participants also expressed positive attitudes towards CALL. Imran et al. (2022) examined the impact of Computer Assisted Language Learning (CALL) technology on Indonesian learners' speaking skills. Their quantitative study found that the use of CALL facilitated greater interaction between students and learning materials via the internet, enabling more flexible learning in terms of time and place. The results suggest that CALL can effectively enhance speaking skills and improve language learning outcomes. Collectively, these studies underline the effectiveness of diverse CALL methods, from vocabulary and pronunciation tools to video-based tasks, in enhancing EFL learners' speaking abilities. However, despite the positive findings in the literature, there is still a need for more context-specific research, particularly in educational settings like Islamic boarding schools, where the integration of technology may face unique cultural and institutional barriers. In such environments, the adoption of CALL must be carefully considered to ensure that it aligns with the values and pedagogical practices of the institution while effectively addressing the language-learning needs of students.

This study aims to fill this gap by investigating the impact of CALL on the speaking skills of EFL students at Al-Mizan Islamic Boarding School. Specifically, the research focuses on two key aspects of speaking: fluency and confidence. Fluency refers to the ability to speak

smoothly and without excessive hesitation (Suzuki & Kormos, 2020; van Os et al., 2020), while confidence is the speaker's self-assurance in using the language in various communicative contexts (Dippold et al., 2019; Zayed & Al-Ghamdi, 2019). Both of these elements are crucial for effective communication and are often the areas where EFL learners struggle the most. While CALL has been shown to improve these aspects of speaking in general educational contexts, its impact in the specific context of an Islamic boarding school remains underexplored.

In light of these challenges, this study seeks to explore the following research questions: How does the use of Computer-Assisted Language Learning (CALL) impact the speaking fluency and confidence of EFL students at Al-Mizan Islamic Boarding School?. The choice to focus on fluency and confidence is informed by the unique needs of the students at Al-Mizan. Many of these students come from rural areas where opportunities to practice English outside of the classroom are limited. As a result, they may have a solid understanding of grammar and vocabulary but lack the practical experience needed to use the language confidently in conversation. CALL has the potential to bridge this gap by providing a low-pressure environment where students can practice speaking without the fear of making mistakes in front of their peers or teachers.

To investigate the impact of CALL on the speaking skills, this study adopts a mixed-methods approach. The use of both quantitative and qualitative data collection methods ensures a comprehensive understanding of the research problem. In conclusion, this research seeks to explore the potential of CALL as a tool for enhancing the speaking skills of EFL learners at Al-Mizan Islamic Boarding School. By focusing on the development of fluency and confidence, the study aims to contribute to the growing body of literature on CALL while also addressing the specific needs of students in Islamic boarding schools. The findings of this study have the potential to inform both language teachers and policymakers about the effectiveness of CALL in improving speaking skills and to provide practical recommendations for its integration into EFL curricula in similar educational contexts.

METHOD

Research Design

This study adopts a mixed-methods approach by Creswell (2018), integrating both quantitative and qualitative data collection methods to investigate the impact of Computer-Assisted Language Learning (CALL) on the speaking skills of EFL students at Al-Mizan Islamic Boarding School. The mixed-methods design allows for a comprehensive exploration of both the measurable outcomes and the subjective experiences of the students. The study spans a period of 8 weeks, during which pre- and post-intervention assessments are conducted to evaluate changes in speaking fluency and confidence.

Participants

The participants in this study consisted of 24 students enrolled in the 9th grade at Al-Mizan Islamic Boarding School. These students were selected through purposive sampling to ensure they represented a typical cross-section of the school's EFL learners. The total population of 9th-grade students at Al-Mizan is 120, meaning the 24 participants represent 20% of the total student population in this grade. The participants, aged 14 to 15, come from predominantly urban areas, though their exposure to English outside the classroom remains limited. They were selected based on their active engagement in English-speaking lessons, ensuring they were representative of the student body and sufficiently motivated to participate in the study.

Instruments

Data collection for this study was conducted using three primary instruments: pre- and post-tests, an observation checklist, and semi-structured interviews. The pre- and post-tests were designed to quantitatively measure the students' speaking fluency and confidence before and after the CALL intervention.

Table 1.

Pre- and Post-Tests Items

Section	Task Description	Instructions to Students
Introduction (Warm-up)	Students introduce themselves briefly in response to a few simple prompts. This part aims to make students comfortable and assess their fluency, confidence, and ability to answer basic questions.	Please answer the following questions in full sentences: 1. Can you tell me your name and where you are from? 2. What is your favorite hobby or activity, and why? 3. Can you describe a typical day at school?
Picture Description	Students describe a picture provided by the teacher.	Look at this picture (a family having a picnic in the park) and describe what you see. Try to speak for at least 1 minute.
Storytelling	Students are asked to narrate a story based on prompts provided.	Please tell me a short story about a memorable experience you have had. You can talk about something funny, exciting, or interesting.
Role-play (Conversation)	Students engage in a short dialogue with the teacher.	Scenario: You are at a restaurant, and you want to order your favorite food. I will act as the waiter. Teacher: Good afternoon! Welcome to our restaurant. What would you like to order? Student: (Respond with their choice, including drinks and dessert if applicable). Teacher: Would you like anything else? Student: (Respond politely and ask questions if needed.)

The tests above were subjective in nature, as they focused on evaluating the students' spoken performance rather than providing fixed answer choices. One rater was involved in evaluating each student's performance.

The scoring rubrics as shown in Appendix A were used to assess fluency and confidence, with a 5-point scale for each criterion. Fluency was evaluated based on the speech flow, pace, continuity, naturalness, intonation. Confidence was measured by evaluating the students' willingness to participate, composure, eye contact, and vocal clarity, as well as their engagement in spontaneous speaking tasks. In addition to the tests, an observation checklist was used during CALL sessions to evaluate student engagement and the practical use of English in interactive tasks.

Table 3.
Observation Check List

Criteria	Yes	No	Comments
Active Participation			Did the student actively engage in speaking tasks?
Use of English			Did the student use English throughout the task?
Fluency			Did the student speak without frequent pauses?
Pronunciation			Was the student's pronunciation clear and accurate?
Confidence			Did the student speak confidently, without hesitation?
Willingness to Participate			Was the student eager to participate in speaking tasks?
Task Completion			Did the student complete all speaking tasks given?

The observation checklist above focused on active participation, language use, and fluency during the tasks. Qualitative data were also gathered through semi-structured interviews with 5 students, which provided deeper insights into their experiences with CALL and the

perceived impact of the intervention on their speaking abilities. The interview guidelines is available in Appendix B.

Data Collection

The study followed a structured, three-phase procedure. In Phase 1, a pre-test was administered to all participants to establish a baseline for their speaking skills. Alongside the pre-test, students' initial attitudes toward using technology in language learning were recorded. In Phase 2, the CALL intervention was implemented over the course of 8 weeks, with students participating in three sessions per week, each lasting 60 minutes. During these sessions, students engaged with various CALL tools, including multimedia software, speech recognition apps like Elsa Speak and Memrise. The CALL activities simulated real-life communication scenarios and encouraged students to practice speaking in a range of authentic contexts. In Phase 3, after the completion of the CALL intervention, a post-test was administered to measure any improvements in fluency and confidence. This was followed by interviews with selected students to gain deeper insights into their experiences with the CALL tools.

Data Analysis

Data analysis involved both quantitative and qualitative methods to provide a comprehensive understanding of the impact of the CALL intervention on students' speaking fluency and confidence. The quantitative data were derived from pre- and post-tests, which were analysed using statistical methods, specifically a paired t-test, to determine whether there were statistically significant improvements in the students' performance after the intervention. Fluency was evaluated based on five key aspects: speech flow, which measured the smoothness and lack of interruptions in the students' speech; pace, which assessed whether the speed of speech was appropriate, neither too fast nor too slow; continuity, which focused on the ability to speak without frequent pauses or breakdowns in thought; naturalness, which gauged how spontaneous and authentic the speech sounded, avoiding rigidity or

over-rehearsal; and intonation, which assessed the variation in pitch and stress used to convey meaning effectively. These aspects were scored using a rubric on a 5-point scale for each criterion (Appendix A), with a maximum fluency score of 25 points per task. The scores from all tasks were combined and converted to a 100-point scale for analysis.

Confidence was measured using the same rubric focused on specific behavioural indicators. This included willingness to participate, composure, eye contact, vocal clarity, and engagement (Appendix A). Each criterion was scored on a 5-point scale, with a total confidence score for each task calculated out of 25 points. Like fluency, these scores were also converted to a 100-point scale for comparison across pre- and post-tests. The paired t-test was then used to compare the mean pre-test and post-test scores for both fluency and confidence, identifying whether the observed improvements were statistically significant ($p < 0.05$).

For the qualitative component, data were collected through semi-structured interviews and observations. The semi-structured interview questions focused on six main areas to explore students' experiences and perceptions of using CALL tools (see Appendix A).

FINDINGS

The quantitative results were based on the pre- and post-test assessments of speaking fluency and confidence. The pre-test results provided baseline data on the students' speaking fluency and confidence before the CALL intervention.

Table 4.
Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest Fluency	55.46	24	3.230	.659
	Posttest Fluency	75.67	24	3.279	.669
Pair 2	Pretest Confidence	58.63	24	2.916	.595
	Posttest Confidence	80.58	24	2.765	.564

The average fluency score was 55.46 out of 100, indicating that many students struggled with producing continuous speech without breakdowns. Hesitations and pauses were frequent during their spoken responses, and many students had difficulty maintaining a natural flow in conversation. Pronunciation accuracy was a common issue, particularly in areas of stress and intonation patterns, which are critical for achieving intelligibility in spoken language.

On an individual level, there were noticeable differences in fluency across the 24 students. While a few students demonstrated moderate proficiency with scores around 65, the majority fell within the 50-60 range, suggesting that fluency was an area of concern for most participants. Confidence levels, as measured by students' willingness to speak English in spontaneous conversation and formal speaking tasks, were also relatively low. The average confidence score was 58.63 out of 100. During the pre-test, students appeared hesitant to speak without relying heavily on prepared scripts. Signs of anxiety, such as speaking in a low voice, avoiding eye contact, and reluctance to participate in group conversations, were observed among many students. This lack of confidence was particularly evident in open-ended speaking tasks, where students were required to engage in unscripted dialogue. On average, students expressed a general apprehension toward speaking English, citing limited opportunities for practice and a fear of making mistakes in front of their peers as significant barriers to their confidence.

Following the eight-week CALL intervention, a significant improvement in both fluency and confidence was observed. The average fluency score increased from 55.46 to 75.67 out of 100, reflecting a 20.21-point increase. This indicated that students were able to speak with fewer pauses and interruptions, demonstrating better control over their speech production. Speech rate was notably faster, and students exhibited a greater ability to maintain a natural conversation pace, with fewer hesitations and more fluid transitions between sentences. The students' pronunciation also showed marked improvement, with more accurate stress and intonation patterns observed in their speech.

Similarly, the average confidence score rose from 58.63 to 80.58 out of 100, representing a 21.95-point improvement. Students were more willing to participate in spontaneous speaking tasks, exhibited greater comfort in initiating conversations, and demonstrated less reliance on prepared scripts. During the post-test, many students displayed greater enthusiasm for speaking in English, and they appeared more comfortable using the language in both formal and informal settings. These findings were further supported by the diagram illustrating the significant score increases in both fluency and confidence between the pre-test and post-test.

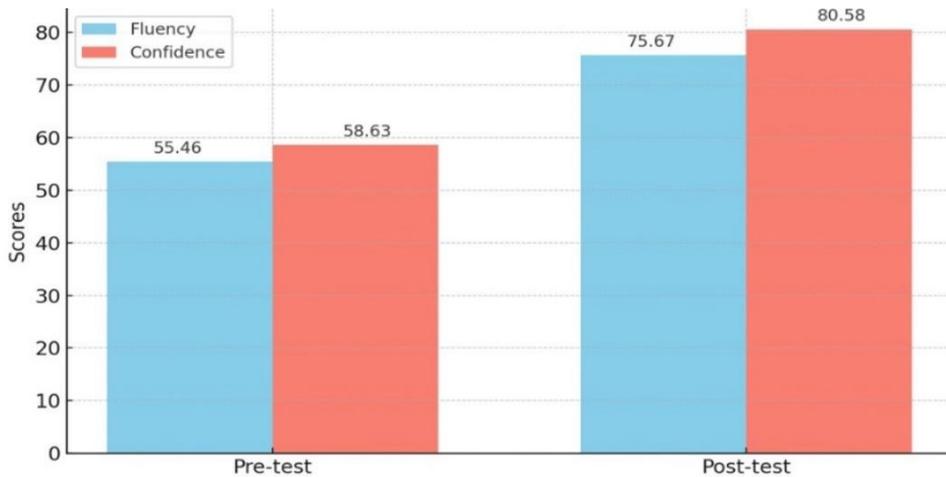


Figure 1: Diagram Scores for both Fluency and Confidence

Most students experienced an improvement of at least 10 points in both metrics, with some achieving gains as high as 25 points. For instance, students who initially scored in the mid-50s improved to mid-70s or higher, indicating that the CALL intervention had a profound impact on their speaking abilities. To determine whether the observed improvements were statistically significant, a paired t-test was conducted.

Table 5.

Paired Samples t-test

		Paired Differences						Significance		
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Pretest	-	.415	.085	-	-	-	23	<.001	<.001
	Fluency - Posttest	20.208			20.384	20.033	238		1	
	Fluency						0			
Pair 2	Pretest	-	.955	.195	-	-	-	23	<.001	<.001
	Confidence - Posttest	21.958			22.361	21.555	112		1	
	Confidence						1			

The results of the t-test showed that the increases in both fluency and confidence scores were statistically significant, with a p-value of less than 0.001 for both metrics. This suggests that the improvements were not due to chance but were likely a direct result of the CALL intervention.

Table 6.

Paired Samples Effect Sizes

		Cohen's d	Standardizer ^a	Point Estimate	95% Confidence Interval	
					Lower	Upper
Pair 1	Pretest		.415	-48.712	-62.681	-34.720
	Fluency - Posttest	Hedges' correction	.429	-47.103	-60.611	-33.573
Pair 2	Pretest		.955	-23.003	-29.608	-16.385
	Confidence - Posttest	Hedges' correction	.987	-22.243	-28.630	-15.844

The effect sizes for both fluency (48.71) and confidence (23.00), calculated using Cohen's *d*, were exceptionally large, further confirming the effectiveness of the intervention. These results highlight the potential of CALL tools in significantly enhancing students' speaking skills.

In addition to the quantitative data, qualitative data were collected from semi-structured interviews and observations, providing insights into the students' experiences with CALL and the specific ways in which it influenced their speaking skills. From the interviews, students overwhelmingly reported positive experiences with CALL tools, such as Memrise and Elsa Speak. The interactive features of these applications, particularly speech recognition and instant pronunciation feedback, were cited as major contributors to their improvement. For instance, Student 1 mentioned, *"I liked that I could practice on my own without feeling embarrassed. The app corrected my pronunciation right away, so I knew what I was doing wrong."* This reflects the value of low-pressure, self-paced practice in fostering skill development, as also indicated by the improved fluency scores in the post-test.

Moreover, Student 5 highlighted the engaging and gamified nature of CALL tools, which made learning enjoyable. This sentiment aligns with the theme of enhanced motivation observed across students, suggesting that the interactive format of CALL tools played a key role in sustaining their interest and encouraging regular practice.

The increase in fluency scores, as indicated by a 20.21-point rise on average, was corroborated by students' perceptions of their progress. For instance, Student 3 remarked, *"I can speak more confidently during presentations, and my pronunciation is much clearer, especially sounds like 'th' and 's'."* Similarly, Student 4 noted improved fluency and speech rate, sharing that they could now *"speak faster without many pauses."* These comments illustrate how the tools facilitated more natural speech production, aligning with the observed reduction in hesitations and breakdowns during the post-test assessments.

In terms of confidence, the qualitative data mirror the quantitative results, which showed a 21.95-point increase in confidence

scores. Students reported feeling less anxious about making mistakes and more willing to engage in speaking tasks. Student 4, for example, shared, *"Before, I was nervous speaking in front of others, but now I feel more confident because I know my pronunciation is better."* This shift in attitude reflects a reduced fear of judgment and greater self-assurance in using English, which was particularly evident in their increased participation in class discussions.

Despite the positive outcomes, several challenges emerged during the intervention. A recurring issue was technical difficulties, such as unreliable internet connections and occasional misrecognition by the speech recognition software. Student 3 stated, *"The app sometimes misunderstood my pronunciation even when I thought I said it correctly,"* which caused temporary frustration. Additionally, some students expressed a preference for face-to-face interaction, with Student 5 emphasizing that while CALL was beneficial, it could not fully replace the value of real-time conversations with teachers and peers. These challenges, however, did not appear to overshadow the overall benefits of the intervention. Students demonstrated resilience in overcoming obstacles, such as Student 4, who shared his strategy of asking for help from peers or teachers when encountering difficulties with app instructions.

The students' enthusiasm for continued use of CALL tools suggests a perceived long-term benefit. For instance, Student 3 expressed, *"I want to keep using these tools because they help me improve a lot,"* while Student 4 recommended them to other students for their effectiveness in building speaking skills. This aligns with the broader conclusion that CALL tools provide an accessible and engaging platform for sustained language practice, especially in environments with limited exposure to English outside the classroom.

Students also provided constructive feedback for enhancing the CALL experience. Several suggestions focused on adding more real-life situational dialogues, such as ordering food in a restaurant or asking for directions. Student 4 recommended integrating more practical scenarios to make the tools even more relatable and useful. Additionally, Student

3 suggested incorporating live interaction features with native speakers, which could further enrich the learning experience by providing authentic conversational practice.

The alignment between quantitative improvements and qualitative insights underscores the effectiveness of CALL tools in enhancing speaking fluency and confidence. The statistically significant gains in post-test scores reflect the tangible progress achieved, while the interview data shed light on the mechanisms driving these improvements, such as repeated pronunciation practice, low-pressure learning environments, and engaging formats.

At the same time, the challenges identified highlight areas for refinement, suggesting that while CALL tools are highly effective, they should be used in conjunction with face-to-face interaction to maximize their impact. By addressing these challenges and incorporating the students' suggestions, the integration of CALL tools in language instruction can be further optimized, ensuring a balanced approach that leverages both technology and human interaction.

In conclusion, the findings demonstrate that CALL tools are a powerful resource for improving speaking skills, particularly in contexts where students have limited exposure to English outside the classroom. By fostering fluency, building confidence, and providing engaging practice opportunities, CALL tools hold great potential for transforming EFL education, as evidenced by the remarkable progress achieved by the students in this study.

DISCUSSION

The purpose of this study was to investigate the effects of Computer-Assisted Language Learning (CALL) on the confidence and speaking fluency of EFL students at Al-Mizan Islamic Boarding School. The study offers helpful insights into how CALL affects these important facets of language learning by examining pre- and post-test results as well as qualitative information from observations and interviews.

The results demonstrate that after eight weeks of using CALL tools, students' confidence and fluency have clearly improved.

Confidence scores rose from 58.63 to 80.58, while fluency scores increased from an average of 55.46 to 75.67. These findings imply that CALL had a beneficial impact, assisting students in speaking more fluently, enhancing their pronunciation, and minimising hesitations when conversing. The increase in self-assurance demonstrates how the CALL resources fostered a positive atmosphere that let students practice speaking without worrying about making mistakes in front of others.

This study provides answers to the research questions and demonstrates how CALL can help EFL learners become more confident and fluent. CALL technologies provided students with greater opportunity to practise speaking and get fast feedback in settings such as Islamic boarding schools, where speaking opportunities are frequently limited. They were able to enhance their speaking patterns and pronunciation because to features like speech recognition, which made CALL an invaluable tool.

These findings are consistent with previous research on the advantages of CALL for language learning. For example, Waode Aswad (2022) shown that CALL tools enhanced speaking abilities and vocabulary. Furthermore, by creating a less scary environment and promoting participation, this study confirms results that CALL can lower speaking anxiety. Similarly, a study by Enayati and Gilakjani (2020) shown that CALL tools enhanced speaking abilities and vocabulary. Furthermore, by creating a less scary environment and promoting participation, this study confirms results that CALL can lower speaking anxiety.

This study builds on previous research by showing that CALL can specifically help EFL students overcome anxiety and gain confidence. Traditional classroom settings often make students nervous about speaking, but CALL's low-pressure environment allowed them to practice comfortably, boosting their confidence. Additionally, this research highlights CALL's role in improving pronunciation. Previous research by Pennington (2019), noted that speech recognition tools provide helpful feedback on pronunciation. Students in this study

reported noticeable improvements in areas like stress and intonation after using CALL tools.

The findings have practical value for EFL teaching. CALL can be a helpful supplement in classrooms, especially in settings like Al-Mizan, where speaking practice opportunities are limited. By integrating CALL into the curriculum, teachers can give students more chances to practice speaking outside the classroom, improving both fluency and confidence. CALL also promotes learner independence. Students can complete speaking tasks at their own pace, receive instant feedback, and practice whenever convenient. This makes CALL a useful tool for learning outside school hours, accessible on mobile devices or computers.

On a theoretical level, the findings reinforce the concept of language learning as a socially constructed process, where learners' interactions with technology and feedback mechanisms play a crucial role in their development. Vygotsky's theory (2020) of the zone of proximal development (ZPD) is particularly relevant here, as CALL tools provide learners with scaffolded support that helps them progress beyond their current level of speaking proficiency. In this study, the feedback provided by CALL tools functioned as a form of scaffolding, enabling students to gradually improve their fluency and pronunciation.

Additionally, the positive impact of CALL on students' confidence aligns with the affective filter hypothesis proposed by Krashen, which suggests that reducing anxiety and building self-confidence can lead to more effective language acquisition (Patrick, 2019). CALL, by creating a low-pressure environment, appears to lower the affective filter and allows students to practice speaking in a stress-free manner, which in turn contributes to their overall language development.

Despite its promising results, this study has limitations. The small sample size of 24 students limits how widely the findings can be applied. Future studies with larger and more diverse groups would provide stronger evidence. Additionally, the eight-week duration may not capture long-term effects. Research over a longer period could help

determine whether improvements in fluency and confidence are sustainable.

Another limitation is the reliance on self-reported data from interviews, which might not fully reflect students' actual progress. Combining self-reports with objective measures, such as audio recordings or classroom observations, could give a more complete picture. Finally, the results of this study might not be generalisable to other educational contexts because it was carried out in a single school. Confirming the findings would be aided by conducting the study again in other educational settings, including both public and private ones. Furthermore, researching the efficacy of more recent technologies, such as virtual reality or AI-based applications, would offer insightful information about how CALL's function in education is changing. This study demonstrates that CALL significantly improves EFL students' speaking fluency and confidence. While there are limitations, the findings offer practical and theoretical insights that can benefit both educators and researchers. By addressing these limitations and exploring new areas of study, the potential of CALL as a powerful language learning tool can be further realized.

CONCLUSION

This study investigated the impact of CALL on improving speaking fluency and confidence among EFL students at Al-Mizan Islamic Boarding School. The findings from pre- and post-tests revealed a significant increase in both fluency and confidence levels after an 8-week CALL intervention. The qualitative data reinforced these results, as students expressed positive attitudes towards CALL, appreciating its interactive and low-pressure environment for practicing speaking skills.

The study contributes to the field of language education by demonstrating the effectiveness of CALL in enhancing both speaking proficiency and learner confidence. This research aligns with existing literature, while also adding insights into how CALL can be particularly beneficial in EFL settings where speaking opportunities are limited. Moreover, it emphasizes the role of CALL in creating a learner-centered

environment that facilitates independent learning and reduces anxiety related to speaking in a foreign language. In terms of practical implications, the study suggests that CALL can be a valuable tool for language educators seeking to improve students' speaking abilities, especially in settings where traditional methods may not provide sufficient opportunities for practice. The findings support the integration of CALL into language curricula as a means to complement classroom instruction and provide more engaging, personalized learning experiences for students.

DECLARATION OF AI AND AI-ASSISTED TECHNOLOGIES

The authors declare that ChatGPT (v4.0.2024.12) Artificial Intelligence was used exclusively for obtaining research resources and proofreading purposes during the preparation of this manuscript. This AI-assisted technology was employed to enhance language clarity and readability. The authors have carefully reviewed and edited the content to ensure its accuracy and quality, take full responsibility for the final version of the publication.

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APPENDIX A

Rubric for Speaking Test (Fluency Level)

Criteria	1 (Poor)	2 (Fair)	3 (Good)	4 (Very Good)	5 (Excellent)
Speech Flow	Speech is disjointed, with frequent and long pauses that disrupt communication	Speech has many pauses and hesitations but is somewhat understandable	Moderate pauses: speech has some flow but lacks consistency	Minimal pauses; speech flows naturally with occasional disruptions	Speech flows smoothly and effortlessly with no significant pauses
Pace	Speech is very slow or excessively fast, making it hard to follow	Speech pace is uneven, with abrupt changes that hinder understanding	Speech pace is generally appropriate but inconsistent	Speech pace is steady and appropriate, with minor lapses	Speech pace is natural, consistent, and easy to follow
Continuity	Speech frequently breaks down, and the speaker struggles to complete sentences	Speech occasionally breaks down but recovers with effort	Speech is mostly continuous, with some interruptions	Speech is continuous, with minor lapses or hesitations	Speech is completely continuous, with seamless transitions
Naturalness	Speech is unnatural, robotic, or overly rehearsed	Speech shows some rigidity or unnatural tone	Speech is somewhat natural but occasionally rehearsed	Speech is mostly natural, with minor rigidity	Speech is highly natural, engaging, spontaneous

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Intonation	Intonation patterns are incorrect, making the speech monotonous	Intonation is inconsistent and distracts from communication	Intonation is mostly correct, with minor monotony	Intonation is varied and enhances speech clarity	Intonation is excellent, dynamic, and enhances communication
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Rubric for Speaking Test (Confidence Level)

Criteria	1 (Poor)	2 (Fair)	3 (Good)	4 (Very Good)	5 (Excellent)
Willingness	Avoids speaking tasks; reluctant to participate.	Hesitant, requires encouragement to engage.	Participates with moderate hesitation.	Participates willingly with minor hesitation.	Proactively engages without hesitation.
Composure	Very anxious; often stops speaking mid-task.	Nervous but continues speaking with effort.	Occasionally nervous; generally composed.	Appears calm and composed with few lapses.	Completely composed, confident, and natural.
Eye Contact	Avoids eye contact completely.	Rarely maintains eye contact.	Occasionally maintains eye contact.	Maintains eye contact most of the time.	Maintains consistent, natural eye contact.
Vocal Clarity	Voice is inaudible or difficult to hear.	Voice is uneven or frequently too soft.	Voice is generally clear with some lapses.	Voice is clear and audible throughout.	Voice is strong, engaging, and well-projected.
Engagement	Avoids interaction or disengages easily.	Limited interaction or enthusiasm.	Moderate interaction; some engagement.	Actively engages and participates.	Fully engaged and enthusiastic.

APPENDIX B

Guideline for Interview

Category		Questions
General Experience with CALL	1.	How did you feel about using CALL tools (like Memrise and Elsa Speak) for practicing English?
	2.	Did you enjoy using the CALL tools? Why or why not?
Impact on Speaking Fluency	1.	Do you feel that your ability to speak English has improved after using the CALL tools? Can you give specific examples?
	2.	What aspects of your speaking skills (e.g., fluency, pronunciation) do you think have improved the most?
Impact on Confidence	1.	Did you feel more confident speaking English after using the CALL tools? Why or why not?
	2.	Can you describe a time during the CALL sessions when you felt particularly confident or unsure about speaking?
Challenges Faced	1.	What challenges did you face while using the CALL tools? How did you overcome them?
	2.	Were there any features of the CALL tools that you found difficult to use or confusing?
Overall Perception of CALL	1.	How do you feel about continuing to use technology (like CALL tools) to practice speaking in the future?
	2.	Would you recommend using CALL tools to other students for improving speaking skills? Why or why not?
Suggestions for Improvement	1.	Do you think the CALL tools could be improved in any way to help students practice speaking better? How?
	2.	What suggestions do you have for teachers who want to use technology to improve speaking skills in the classroom?