

ORIGINAL ARTICLE

The Effects of Implementing ELSA Speaking Application on Iranian Students' Pronunciation Skill

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Abstract

This study explores the impact of the ELSA Speak mobile application on improving Iranian students' English pronunciation skills. The study involved 45 twelfth-grade students in Ardabil, Iran who were divided into experimental and control groups. The experimental group used ELSA Speak for pronunciation practice, while the control group received traditional instruction. A pretest-posttest design was employed to assess progress. The findings indicate that the experimental group showed significantly greater improvement in pronunciation accuracy compared to the control group. The findings of this study highlighted the effectiveness of mobile-assisted language learning (MALL) tools. ELSA's AI-driven feedback and personalized learning approach provided immediate corrective guidance which led to substantial pronunciation outcomes. The study emphasizes the importance of integrating technology like ELSA Speak into language education and calls for practical implications for enhancing pronunciation instruction and student engagement. Future research could examine the long-term effects of MALL applications and their potential in diverse educational settings.

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Introduction

In today's globalized world, English proficiency has become a necessity rather than a mere academic target. English learning is not confined to getting good grades or securing a high rank in school; nowadays, it has become a crucial skill for exploring the complications of globalization. As Eckard and Kearny (1981) state,

speaking is not specifically about verbalizing words. It is also about a bilateral communicative process that facilitates the exchange of ideas, information, and emotions. The ability to speak English fluently lets individuals access a wider range of information and opportunities that lead to greater personal and professional success. This change in importance has made English a fundamental component of formal education worldwide.

Pronunciation is one of the most fundamental aspects of learning English and is essential to obtaining oral communicative skills. It includes both listening and speaking (Cakmak, ۲۰۱۹), and it enables speakers to convey their intended meaning clearly. In this matter, pronunciation errors can lead to misunderstandings. Mispronunciation of consonants and vowels, particularly, can be confusing, since slight changes in sound can lead to other words and meanings. (Arashnia, ۲۰۱۶). To achieve proficiency in English pronunciation, learners must understand the sound system, also known as phonology of the language. Unfortunately, pronunciation instruction is often addressed in schools inadequately. As a result, students frequently graduate without knowing basic pronunciation skills. This leads to difficulties in both speaking and listening comprehension.

To deal with these kind of challenges, progresses in technology have significantly affected language learning. The era of mobile-assisted language learning (MALL) has changed the way that English language is taught and learned, offering a more flexible approach to language education. Mobile devices provide learners with the opportunity to engage in self-study anytime and anywhere. According to Miangah et al. (۲۰۱۲), the advent of mobile technology in the ۱۹۹۰s created a revolution in educational settings which brought up new learning experiences. This has been particularly beneficial for English learners, who can now access a wide range of resources and tools, from e-books to speech recognition software, that make it quite simpler to acquire language skills (Donaldson & Haggstrom, ۲۰۰۶). The integration of computer-assisted language learning (CALL) and MALL into ELT has positively changed the teaching process. New technologies such as speech recognition software, CD-ROMs, and Internet-based resources improve student engagement and learning results.

One of the best technological advances in English language learning that takes advantage of artificial intelligence and speech recognition technology is ELSA speak app (Indari, ۲۰۲۳). The app provides with customized lessons and tasks. It focuses on word pronunciation, sentence structure, and intonation. ELSA also features an interactive dictionary that lets users receive the correct pronunciation of words and phrases. This makes the software a worthy tool for both students and teachers. As mobile learning continues to become more popular, ELSA Speak represents significant progress in addressing the difficulties of pronunciation instruction and providing learners with the resources they require to improve their speaking skills.

The potential of ELSA Speak to introduce new approaches to pronunciation learning is supported by research that suggests that mobile learning technologies positively affect student engagement and performance. The definition of mobile learning is any form of learning that happens when learners are in diverse locations and take advantage of the new opportunities that are provided by mobile technologies (Arvanitis & Krystalli, ۲۰۲۱). By implementing ELSA Speak in the classroom, teachers can deal with some limitations of traditional pronunciation teaching, such as limitations in time and the lack of consistent practicing opportunities. Besides, the app's AI-oriented approach allows for personalized feedback. This is a great opportunity for students to correct their mistakes in real time and gain confidence in their speaking abilities.

Ultimately, this research aims to explore the effectiveness of the ELSA Speak application in enhancing students' pronunciation skills, particularly in the context of Iranian English language learning. This investigation seeks to determine whether integrating ELSA Speak into the English language curriculum can significantly improve students' correct pronunciation.

Statement of the Problem

Even with progress in language learning technology, there is still a soaring gap in pronunciation proficiency among learners, Especially non-native English speakers like Iranian students. Pronunciation is still a challenge for English learners which often prohibits their capability to communicate effectively and with confidence. In a research study conducted by Derakhshan & Shirmohammadli (۲۰۱۵), they investigated this issue. According to them, a lot of students have trouble learning the phonetic aspects of English, like vowels, consonants, and stress. The development of digital technologies is the result of examining this problem. Mobile-assisted language learning (MALL) apps are one example of such development. These are useful for enhancing pronunciation abilities through continuous practice and feedback (Arvanitis & Krystalli, ۲۰۲۱). Recent research has looked into the possibilities of AI-focused programs like ELSA to determine how effective they can be at improving English pronunciation. For instance, a study by Sholekhah and Fakhurriana (۲۰۲۳) revealed that ELSA app has enhanced learners' pronunciation accuracy in more controlled contexts. Similarly, studies by Elsani et. al. (۲۰۲۳), and Nguyen and Tuyen (۲۰۲۴), indicated that learners' phonetic knowledge and overall speaking skills have been affected by the use of this app. The effectiveness of ELSA Speak specifically among Iranian learners, on the other hand, is an unexplored field of study. This study, therefore, seeks to investigate the impact of ELSA Speak on Iranian students' pronunciation skills. The examination of how this technology can enhance Iranian learners' phonetic accuracy and confidence when speaking English is the primary focus of this study.

Review of the Literature

Pronunciation in Language Learning

Pronunciation, which is regarded as one of the main aspects of language learning, is a crucial component for effective oral communication because it directly affects learners' ability to be understood and to understand others. Speech misunderstanding and breakdowns in communication are the results of weak pronunciation performance.. According to Gilakjani (۲۰۱۶), pronunciation includes the correct production of sounds, stress patterns, intonation, and rhythm. The conveying of meaning accurately is what these phonetic features are essential for in spoken language. The teaching of pronunciation is often ignored or inadequately addressed in traditional language teaching methodologies even though the importance of teaching pronunciation is mentioned in various studies. Various factors could cause this such as the complexity of teaching pronunciation, the lack of training for teachers in phonetics, and the challenges of providing feedback in a classroom setting (Levis, ۲۰۱۸).

Recent studies have emphasized the need for more straightforward pronunciation teaching to improve learners' spoken English proficiency. For instance, Derwing and Munro (۲۰۱۵) highlight that without pronunciation training, learners may continue to struggle with intelligibility, even if they have a mastery of vocabulary and grammar. Furthermore, research by Thomson and Derwing (۲۰۱۴) suggests that the acquisition of pronunciation skills should be a progressive process, integrated into all stages of language learning rather than a separate or secondary component.

Mobile-Assisted Language Learning (MALL)

Mobile-assisted language learning (MALL) has caused great changes in the field of language education that offers new opportunities for learners to improve their language skills outside the traditional classroom context. MALL takes advantage of the portability, connectivity, and multimedia features of mobile devices to create personal experiences of learning. MALL, according to Viberg and Grönlund (۲۰۱۷), gives learners access to language learning resources anytime and anywhere. Therefore, it enhances their exposure to the target language and allows for more frequent and focused practice. The integration of mobile technology in language learning has been shown to increase learner motivation, engagement, and autonomy, as it aligns with the learner's everyday use of technology.

One of the main advantages of MALL is its ability to deliver interactive and multimedia-oriented content, which can provide different learning styles and preferences. For example, mobile applications can bring together audio, video, and gamified elements to make learning more engaging and effective. Kukulska-Hulme (۲۰۲۰) indicated that MALL can significantly improve language learning outcomes, especially in the fields of listening and speaking by providing immediate feedback and opportunities for interactive practice. Moreover, mobile applications can be customized to meet individual learner needs by offering personalized learning pathways based on the user's proficiency level and learning objectives.

MALL's effectiveness depends on various factors. The design of the applications, the quality of the content, and the learner's ability to use the technology effectively are among these factors. MALL, as pointed out by Burston (۲۰۱۵) not only offers significant potential but also presents challenges. For example, the need for in-depth integration into the curriculum, and the varying levels of familiarity with technology among learners. MALL continues to be regarded as a valuable tool in language education even with these challenges to be considered.

The Use of ELSA Speak App in Language Learning and Teaching

The ELSA Speak application represents a great development in the field of MALL, particularly in the area of pronunciation training. ELSA Speak is an AI-oriented application that uses speech recognition technology to provide learners with authentic feedback on their pronunciation. The exercises provided by the app help users improve their pronunciation of English words, phrases, and sentences. Some other features that users can benefit from include an interactive dictionary, personalized learning plans, and progress checking. The app uses artificial intelligence. This feature enables the application to provide more accurate and personalized feedback.

There are several studies that have explored the effectiveness of ELSA Speak in enhancing pronunciation skills. For instance, Elsani et. al. (۲۰۲۳) found that learners who used ELSA Speak showed significant improvements in their pronunciation accuracy and fluency in comparison to those who depended on traditional learning methods. The app's ability to provide immediate feedback and its extensive sources of pronunciation exercises were considered key factors that contributed to these improvements. Moreover, Zakiah et. al. (۲۰۲۳) supported the integration of ELSA Speak into language education, suggesting that it can complement classroom instruction by providing learners with additional practice opportunities and personalized feedback. Nguyen and Tuyen (۲۰۲۴) conducted a study on Vietnamese students and concluded that the use of the ELSA application effectively fosters students' ability to pronounce words correctly.

With all positive findings being considered, further investigation is still required. For instance, the long-term effects of using ELSA Speak on pronunciation remembrance and the app's effectiveness across different proficiency levels and linguistic backgrounds need further exploration. Although the app has received compliments for its user-friendly interface and effectiveness, some studies have pointed out potential limitations like the lack of more diverse pronunciation exercises, and the importance of integrating app use with other forms of learning to avoid over-reliance on technology (McCrocklin, ۲۰۱۶).

Conceptual and Theoretical Framework

This study mainly focuses on how the involvement of ELSA Speak in the language learning curriculum can enhance the pronunciation skills of Iranian students learning English as a foreign language (EFL). In this case, this study revolves around three concepts: pronunciation skills, mobile-assisted language learning, and the ELSA speaking application.

Pronunciation Skills

One of the critical components of language learning that encompasses the ability to produce sounds properly and intelligibly is Pronunciation. Getting skillful in pronunciation involves the correct articulation of phonemes and elements such as intonation, stress, and rhythm. Derakhshan and Shirmohammadli (۲۰۱۵) emphasize the challenges non-native speakers encounter in mastering pronunciation and highlight the need for effective teaching tools.

Mobile-Assisted Language Learning (MALL)

MALL refers to the use of mobile technology to support language learning processes. It is characterized by its flexibility, accessibility, and capacity to provide learners with immediate feedback and personalized

learning experiences. The rise of MALL has been significant in recent years, with studies such as Miangah and Nezarat (٢٠١٢) demonstrating its potential to enhance various language skills, including pronunciation. The ELSA Speak app is a prime example of MALL, offering interactive and customized pronunciation practice through AI-oriented speech recognition technology.

ELSA Speak App

ELSA Speak is a mobile application. It is specially designed to improve English learners' pronunciation by the use of advanced speech recognition technology. It analyzes users' speech provides in-depth pronunciation feedback and gives advice on which parts users should improve. A study by Akhmad and Munawir (٢٠٢٢) showed that the enhancement in learners' pronunciation skills by using ELSA Speak can be achieved by consistent practice and immediate corrective feedback, which are crucial for language acquisition.

The theoretical foundation of this study is anchored in several key theories related to language learning, technology adoption, and pronunciation instruction.

This study is grounded in several basic theories. Communicative language teaching (CLT) is an approach that focus on real-life communication context (Richards, ٢٠٠٦), and the ELSA application provides practical communicative tasks.

Social interaction in learning which was brought up in social constructivism theory by Vygotsky (١٩٧٨), is another factor that supports the use of tools like ELSA application. The interactive and participatory learning that happens in ELSA can help learners construct knowledge and improve pronunciation skill via feedback and guided practice.

Objectives and Significance of the Study

The primary objective of the present study is to find out how effective it is to implement ELSA speaking app on learners' pronunciation enhancement. The study also seeks to compare the pronunciation improvements of learners who use ELSA Speak with those who receive traditional textbook-based pronunciation instruction without the app. This will help identify the added value of mobile-assisted language learning tools in teaching pronunciation. Therefore, the present study will find an answer to the following question:

- (١) Is there a significant difference between the scores of those who practiced pronunciation skills based on the ELSA application and those who practiced traditionally?

The present study holds significant educational value for a couple of reasons. The findings of this study can reveal how useful mobile-assisted tools could be if integrated into the classroom context to improve pronunciation instruction. This study will also contribute to the knowledge of pronunciation teaching, especially in the context of English as a foreign language. The outcomes of this study can also enable learners to have more control over their self-study process since it introduces an effective mobile-based tool.

Methodology

Participants

This study's participants were ٤٣ twelfth-grade high school students in Ardabil, Iran. These students had attended summer extracurricular classes and were divided into two classes. The first class, which was regarded as the experimental group, had ٢٢ students, and the other one, known as the control group, had ٢١ students.

Design of the Study

Both experimental and control groups took part in a language-learning program that took three months. Once the program had been completed, the participants' ability to speak the target language was tested, and their scores were used as the research data. The participants of this study had already been divided into two homogeneous classes before conducting the research based on their overall performance. This means that the researcher would have had no control over the selection of students in each class. Therefore, the most appropriate design for this study would be quasi-experimental research. A pretest-posttest design was implemented to assess the groups' performance.

Data Collection

In this cross-sectional study, the participants received educational content from their eleventh and twelfth-grade English courses known as Vision ٢ and Vision ٣. Both groups' pre-test and post-test data were collected at a single point to assess the ELSA app's effectiveness on their pronunciation abilities.

Instruments

The data required for analysis to provide an answer to the research question were acquired from an exam that both experimental and control groups' participants took. The exam contained test items that assessed learners' phoneme accuracy, word stress, sentence intonation, connected speech, and fluency. Each of these sub-sections was scored out of four, and the overall score of the exam was out of ٢٠. The tests included in the exam were listen-and-repeat tasks and reading-aloud tasks.

Data Analysis

To analyze the data for providing an answer to the research question, first, the descriptive statistics were calculated. Then, to analyze the effects within and between subjects, repeated measures ANOVA was implemented. These calculations were conducted in SPSS software.

Results and Discussions

As stated above, both experimental and control groups took a pre-test and a post-test to determine the significance of the differences after they underwent treatments. The control group received a traditional pronunciation teaching treatment. On the other hand, the Experimental group received a pronunciation teaching treatment based on the ELSA application. Table ١ represents the descriptive statistics of the scores gained from both groups.

Table ١. Descriptive Statistics of the mean scores within the control group and the experimental group before and after the treatment

Group	Test	Number	Min.	Max.	Mean	Std. Deviation
Control	Pre-test	٢١	١٠	٢٠	١٦,٦١	٢,٥٣
	Post-test	٢١	١٢	٢٠	١٧,١٩	٢,١٥
Experimental	Pre-test	٢٢	١٢	٢٠	١٦,٥٤	٢,٣٦
	Post-test	٢٢	١٤	٢٠	١٨,٣٦	١,٧٣

In this study, a repeated measures ANOVA was conducted to examine the differences and their significance between mean scores. Table ٢ represents the differences between the experimental and control groups' outcomes over time.

Table ٢. Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Time	Sphericity Assumed	٣٠,٦٧٦	١	٣٠,٦٧٦	٣٣,٨٠٢	.٠٠٠
	Greenhouse-Geisser	٣٠,٦٧٦	١,٠٠٠	٣٠,٦٧٦	٣٣,٨٠٢	.٠٠٠
	Huynh-Feldt	٣٠,٦٧٦	١,٠٠٠	٣٠,٦٧٦	٣٣,٨٠٢	.٠٠٠
	Lower-bound	٣٠,٦٧٦	١,٠٠٠	٣٠,٦٧٦	٣٣,٨٠٢	.٠٠٠
Time * Groups	Sphericity Assumed	٨,٣٥٠	١	٨,٣٥٠	٩,٢٠١	.٠٠٤

Error(Time)	Greenhouse-Geisser	۸,۳۵۰	۱,۰۰۰	۸,۳۵۰	۹,۲۰۱	.۰۰۴
	Huynh-Feldt	۸,۳۵۰	۱,۰۰۰	۸,۳۵۰	۹,۲۰۱	.۰۰۴
	Lower-bound	۸,۳۵۰	۱,۰۰۰	۸,۳۵۰	۹,۲۰۱	.۰۰۴
	Sphericity Assumed	۳۷,۲۰۸	۴۱	.۹۰۸		
	Greenhouse-Geisser	۳۷,۲۰۸	۴۱,۰۰۰	.۹۰۸		
	Huynh-Feldt	۳۷,۲۰۸	۴۱,۰۰۰	.۹۰۸		
	Lower-bound	۳۷,۲۰۸	۴۱,۰۰۰	.۹۰۸		

As the table suggests, the interaction effect between time and groups was depicted as significant, $F(1, 41) = 9,201$, $p = .004$. This result shows that the improvement in scores from the pre-test to the post-test had a significant difference across both experimental and control groups, Especially, the experimental group reflected a more substantial improvement in comparison to the control group.

Discussion

The results of the present study demonstrate a significant positive effect of using the ELSA Speak app on improving Iranian learners' pronunciation skills. The experimental group in which the ELSA Speak app was used, showed marked improvement in their post-test scores compared to the control group. This indicates that the app is an effective tool for enhancing pronunciation. These findings align with previous research that highlights the benefits of Mobile-Assisted Language Learning (MALL) tools in language education. this finding is supported by Saito and Lyster (۲۰۱۲), who argue that immediate corrective feedback is essential in second-language pronunciation instruction. Moreover, the app's interactive and personalized curriculum contributes to the individual needs of learners, making it a more engaging and effective learning tool compared to traditional methods.

The findings of this study are consistent with the work of Kohnke and Ting (۲۰۲۱), who explored the impact of mobile apps on language learning and found that apps like ELSA Speak significantly enhance language learners' speaking and pronunciation skills. Similarly, a study by Permatasari and Lubis (۲۰۲۴)

demonstrated that the use of MALL tools, particularly those using AI and speech recognition, can lead to soaring improvements in learners' pronunciation accuracy and fluency.

Furthermore, the study aligns with the broader literature on the effectiveness of technology-enhanced language learning. For instance, Nguyen and Tuyen (۲۰۲۴) found that mobile apps makes it easier for autonomous learning and provide learners with opportunities to practice language skills in a flexible, self-paced environment. This autonomy likely played a role in the experimental group's improved performance, as students could practice pronunciation at their own pace, outside of the constraints of the classroom.

The positive results of the ELSA Speak app also reflect the importance of integrating technology into language education to meet the needs of ۲۱st-century learners. The app's ability to engage learners, provide personalized instruction, and offer immediate feedback makes it a valuable tool for pronunciation training. The study by Fageeh (۲۰۲۳) supports this, showing that digital tools tailored to individual learner profiles enhance motivation and learning outcomes in language education.

Conclusion

In conclusion, this study investigated the impact of the ELSA Speak app on improving Iranian learners' English pronunciation skills. The findings showed that students who used the ELSA app showed obvious improvements in pronunciation accuracy compared to those in the control group. The study underscored the app's effectiveness as a mobile-assisted language learning (MALL) tool. This aligns with previous research that emphasizes the benefits of integrating technology in language learning, particularly for pronunciation training. The positive outcomes suggest that incorporating ELSA Speak into language curricula could provide learners with valuable, interactive practice and therefore, enhance their speaking proficiency. This study contributes not only to the growing body of literature on MALL but also offers practical implications for teachers seeking to make use of technology in their teaching practices. Future research could explore the long-term effects of using ELSA Speak and its applicability across different language learning contexts.

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