The Effect of Using the Karaoke Application for Enhancing EFL Pronunciation Skills of First-Year Secondary School Students and their Attitudes towards Mobile-Assisted Language Learning

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Abstract

The current study investigated the effect of the Karaoke application on enhancing EFL pronunciation skills of first-year secondary school students and their attitudes towards mobile-assisted language learning (MALL). The study employed a quasi-experimental research design (one experimental group). This study's participants were thirty (n = 30) secondary-stage students. The instruments of the study were designed by the researcher, namely, an EFL pronunciation skills checklist, a pre-post EFL pronunciation skills test, and an attitude scale. Data was statistically analyzed through using the Statistical Package for Social Science. Based on the study results, there is evidence that the Karaoke application for enhancing EFL pronunciation skills of first-year secondary school students and their attitudes towards MALL proved effective. The study recommends investigating the potential of using the Karaoke application to enhance other language skills, including fluency and oral comprehension and examining other advancements in MALL applications and tools with EFL secondary school students.

Keywords

Karaoke Application, MALL, EFL Pronunciation Skills, Attitudes Towards Mobile-Assisted Language Learning

اثر استخدام تطبيق كاريوكي لتنمية مهارات النطق باللغة الإنجليزية كلغة أجنبية لطلاب الصف الأول الثانوي و اتجاهاتهم نحو تعلم اللغة بمساعدة الموبايل

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يهدفَ البحثُ إلى تنميةِ مهاراتِ النطقِ باللغةِ الإنجليزيةِ كلغةٍ أجنبيةٍ لطلابِ الصفِ الأولِ الثانويِ واتجاهاتهمْ نحوَ تعلمِ اللغةِ بمساعدةِ الموبايل، وذلكَ باستخدامِ تطبيقِ كاريوكي على أندرويد (بلايئ استورْ). واستخدمثْ الدراسةُ المنهجَ شبه التجريبيِ (عينةٌ واحدةٌ تجريبيةٌ) ، وتكونثْ عينةُ البحثِ منْ مجموعةٍ منْ طلابِ الصفِ الأولِ الثانويِ عددهمْ ثلاثونَ طالب ، ولقدْ تمَ تصميمُ قائمةٍ بمهاراتِ النطقِ باللغةِ الإنجليزيةِ كلغةٍ أجنبيةٍ المناسبةِ لعينةِ البحثِ ، كما تمَ تصميمُ اختبارٍ قبلي / بعدي لقياسِ النطقِ باللغةِ الإنجليزيةِ وذلكَ بهدفِ الوقوفِ على مدى فاعليةِ مدى فاعليةِ تطبيقِ طاريوكي والتأكدُ منْ نمو المهاراتِ موضوعَ البحثِ ، كما تمَ تصميمُ مقياسٍ لاتجاهاتِ الطلابِ نحوَ التعلمِ بمساعدةِ الموبايل ، وذلكَ بهدفِ معرفةِ أثرِ استخدامِ تطبيقِ كاريوكي في تنميةِ اتجاهاتِ الطلابِ نحوَ التعلمِ بمساعدةِ الموبايل لدى عينةِ البحثِ ، وقدْ افترضَ البحثُ أنهُ توجدُ فروقٌ ذاتُ دلالةٍ إحصائيةٍ بينَ متوسطاتِ درجاتِ أفرادِ المجموعةِ التجريبيةِ في اختبارِ مهاراتِ النطقِ باللغةِ الإنجليزيةِ كلغةٍ أجنبيةٍ ومقياسِ اتجاهاتِ الطلابِ نحوَ التعلمِ بمساعدةِ الموبايل لصالح التطبيقِ البعدي ، . وتمَ معالجةَ النتائجِ إحصائيا، والتوصلُ لنتيجةِ البحثِ، حيثُ وجدتْ فروقٌ ذاتُ دلالةٍ إحصائيةٍ بينَ متوسطاتِ درجاتِ أفرادِ المجموعةِ التجريبيةِ في مهاراتِ النطقِ باللغةِ الإنجليزيةِ كلغةٍ أجنبيةٍ ومقياسَ اتجاهاتِ الطلابِ نحوَ التعلمِ بمساعدةِ الموبايل لصالح التطبيقِ البعدي، وأخيرا تمَ تفسيرُ النتائجِ وتقديمِ المقترحاتِ

الكلمات المفتاحية: مهارات النطق باللغة الإنجليزية، تطبيق كاريوكي , اتجاهات الطلاب نحو التعلم بمساعدة الموبايل

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The significance of learning English as a foreign language (EFL) is growing in the contemporary world due to its ability to facilitate interaction among varied cultures. With technological progress, Mobile-Assisted Language Learning (MALL) offers convenient learning resources to English language learners. It enables them to remain connected and actively involved in their learning regardless of time and space limitations. Integrating MALL in language instruction programs is crucial for equipping EFL learners with skills that allow their effective participation within the worldwide interconnected learning environment.

MALL emerged in the early 2000s, aligning with the introduction of smartphones and expanding accessibility to the Internet. With the increasing integration of mobile devices into everyday interactions, EFL researchers have resolved to investigate their applicability and potential advantages to accelerate language instruction significantly beyond the constraints imposed by traditional classroom learning environments (Nikou & Economides,2022; Sun & Lin, 2022). MALL has been described as a pedagogical language learning approach that emerges from a broader field called technology-enhanced language learning and mainly emphasizes using mobile devices like smartphones to facilitate language learning (Mahdi, 2022; Hsu, 2023).

Several governing principles establish the groundwork for integrating MALL into the educational field. A fundamental principle is personalization, which enables learners to customize their experiences based on individual preferences, language proficiency, and desired learning outcomes. Personalizing learning paths allows students to interact with content compatible with their requirements, fostering a more targeted and efficient learning experience (Thornton & Houser, 2022). Moreover, accessibility and flexibility are also fundamental principles. MALL facilitates language instruction in various settings, including formal classrooms and informal learning environments, minimizing the limitations imposed by time and place that usually restrict EFL learning possibilities (Yang & Wang,2023). Interactivity and engagement are also

essential to the success of implementing MALL. Mobile applications frequently use multimedia elements, including audio, videos, animations, and interactive tasks, which makes the learning experience more dynamic and exciting. The potential benefits of this level of engagement include improved retention and deeper learning (Zou & Li, 2023).

Since mobile devices enable seamless interaction among EFL learners through texting features applications, social networking platforms, or discussion boards, collaborative learning is also a fundamental principle supporting MALL's use within the educational field. This collaboration fosters spontaneous interactions and enables learners to exchange resources and participate in digital instructional tasks or challenges with their peers (Wang & Higgins, 2023). Finally, MALL emphasizes immediate feedback, as multiple apps offer immediate corrections to learners' language performance. Such immediate feedback allows learners to quickly recognize and correct errors as they occur, thereby improving the entire learning process (Wong & Looi, 2022).

The MALL approach includes diverse types of mobile applications that trigger EFL learners' engagement in varied ways according to the features of the employed application. One way of promoting EFL learners' engagement is gamification-based applications, which bring game-like aspects into the learning process to enhance the learning experience via playing exciting games. In other words, to encourage learners and maintain their interest, the language learning process may include rewards, levels, and challenges imposed through language games and mobile applications (Sharples & Roschelle, 2023). Quizze applications usually promote EFL learners' engagement through a planned schedule of examinations of vocabulary or grammar at progressively longer intervals. It enhances EFL learners' retention (Jeong & Kim, 2022).

Within MALL, using content creation applications is beneficial for triggering EFL learners' engagement. Learners must generate multimedia content in the target language, including audio recordings, videos, and written texts, and distribute it to others for feedback. This technique empowers learners to use their language skills to explore authentic situations or issues via vlogs, podcasting, or mobile music applications (Benlaghrissi & Quahidi, 2024; Li et al., 2022). One of the most innovative ways of integrating MALL into EFL instruction is using music applications, such as Karaoke, that allow EFL learners to be content creators and song creators in the target language.

The Karaoke application enables EFL learners to access tracks in the target language, exposure, and use authentic language simultaneously.

EFL Learners can actively participate in varied tasks using the karaoke application, including translating melodies, singing along, listening to lyrics, or sharing their singing. According to Sanchez and Gonzalez (2022), one main merit of Karaoke is that it utilizes music to learn foreign languages, as it can boost memory and trigger engagement.

Consequently, EFL learning can be made more pleasant and beneficial via Karaoke, as it may foster a more profound comprehension of the aspects of the English language, such as rhythm, intonation, idiomatic expressions, and vocabulary. EFL learners who use music applications such as the karaoke application are compelled to sing along to songs, encouraging them to emulate the intonation and pronunciation of native speakers precisely. Learners are subconsciously prompted to preserve the rhythm and pitch of the language by sticking to the melody, which can significantly enhance their phonetic awareness (AlMahmud, 2021; Pak & Kim, 2023).

A fundamental merit of using the Karaoke application in EFL instruction is that it allows learners to follow along with the lyrics while listening to the songs. The Karaoke application's digital multimodal song creation function has shown potential for enhancing EFL learners' engagement as song creators, i.e., as language users rather than recipients. According to Chen (2023), this function allows learners to participate actively in their learning process. Hence, it provides them with opportunities to enhance their listening comprehension skills. Furthermore, it encourages EFL learners to retain new words by repeatedly exposing themselves to this vocabulary in an enjoyable and meaningful manner.

 It also fosters learners' comprehension and compiles their language repertoire by employing informal, colloquial expressions that native speakers frequently employ (Sánchez & Gonzalez, 2022; Zhang & Perez, 2021).In addition, learners' simultaneous engagement of multiple senses, who see the lyrics on the screen, hear the melody, and actively sing along, enhances their retention of linguistic structures and ability to differentiate between similar words (Rahimi & Miri, 2023). According to Abu Khalil (2022), the Karakoe application allows EFL learners to better understand sentence structure and grammar by listening to proper word order and identifying fast-paced speech and contractions in everyday conversation.

Another merit of the Karaoke application is that it includes gamified features, such as scoreboards, challenges, social sharing, and level progression, which motivate learners to practice song production more frequently (Luo, 2023). Also, singing along to a song while speaking a foreign language in front of others can help learners feel less anxious (AlMahmud, 2021Manca and Ranieri, 2022).

An outstanding merit of the Karaoke application is the real-time lyric highlighting function, i.e., the ability to highlight lyrics in real time, synergizing the text with the music while the student sings along. This function enables the student to track the lyrics while concurrently hearing the accurate pronunciation visually, therefore facilitating the establishment of correlations between the spoken word and its written presentation. According to Al Mahmud (2021), the availability of this direct language modeling enhances word recognition, literacy skills, and learners' understanding of the natural pace and rhythm of the English language.

Playback speed adjustment is another distinctive feature of the karaoke app. This feature enables EFL learners to slow down challenging parts of a song, allowing additional opportunities to engage with pronunciation, intonation, and phrasing. As mastery of linguistic elements included in the son increases, the playback speed can be gradually raised to align with the natural language rate of native speakers. This adaptability is especially advantageous for beginners or learners who encounter difficulties with fast-paced speech, as it provides an organized way to enhance their speaking and listening abilities (Sanchez & Gonzalez, 2022).

Moreover, the Karaoke application integrates a speech recognition feature, offering instant feedback on the precision of pronunciation. This speech recognition function enables the student to identify areas that need improvement, facilitating focused practice. According to Jensen et al. (2021), this instant feedback increases self-confidence as enhancements in language skills become noticeable.

In addition, the Karaoke application provides a repetition and replay functionality that allows the learner to repeatedly practice complex parts of a song until they have fully mastered the more complex sounds or phrases. This consistent practice is crucial for achieving proficiency in pronunciation and retaining newly learned language items. Finally, the social and collaborative features included in a karaoke application, such as the ability to sing duets or share performances with others, provide opportunities for engagement and constructive peer feedback. This social component promotes consistent practice and peer support and fosters an encouraging environment for learning (Park & Kim, 2023).

Numerous practical guidelines can be employed to maximize the effect of incorporating MALL in general and the karaoke application in particular (Abu Khalil, 2022; Botero et al.,2022; Crompton & Burke,2022; Garcia & Liu,2023; Panggabean & Batubara, 2022). These guidelines include the following;

- Choosing the appropriate songs that align with the curriculum, the specific language objectives, and the students' levels.
- Designing well-organized lesson plans for MALL integration is essential for sustaining compatibility between mobile learning and conventional classroom activities.
- Providing clear instructions and ongoing encouragement is crucial, mainly when introducing learners to new applications. Teachers need to provide comprehensive guidance to learners on the efficient utilization of employed mobile applications, provide technical support
- Promoting a collaborative learning environment by facilitating collaboration among students on mobile-based tasks
- Monitoring screen time is crucial to guaranteeing that students use their gadgets for effective learning rather than distraction.

This study describes MALL as a pedagogical approach that emerges from a broader field called technology-enhanced language learning. It mainly emphasizes integrating the use of mobile applications within the instructional process. Each application is unique in certain functions, allowing EFL learners to engage in a particular way. The karaoke application is a music application that includes a digital multimodal song creation function allowing EFL learners to engage in the language learning process as song creators, i.e., access, listen, repeat, along, record, create, and share English songs among peers.

Positive attitudes towards MALL are becoming increasingly crucial for EFL learners. Given the increasing integration of mobile technology into classroom settings, students' responses to these tools are vital in determining their learning success.

Attitudes towards MALL

Attitudes towards MALL refer to the EFL learners' views, feelings, and perspectives towards using mobile devices for learning a foreign language. Adopting a positive attitude enables learners to perceive MALL as a valuable, pleasurable, and efficient way to improve their language skills. Conversely, negative attitudes might result in a lack of interest or avoidance of these instructional tools. Cultivating positive attitudes towards MALL is essential for EFL learners, as these attitudes directly impact how they interact with the technology and, ultimately, how well it improves their language proficiency (Al-Qahtani,2022).

Studies reveal that EFL learners who have a positive attitude towards MALL are more likely to be motivated and involved in their learning experience, which improves their language performance (Klimova, 2022).

Learners who adopt a positive attitude towards MALL are more likely to consider mobile devices as practical tools for learning rather than as simple sources of distraction. Their positive perspective boosts their enthusiasm for promoting consistent engagement with language learning applications, videos, and other digital resources (Yucedal, 2023). A positive attitude can shift the learning process from a passive experience into an active and engaging one that students may manipulate, resulting in more autonomy and personalized acquiring of knowledge.

Additionally, having a positive attitude towards MALL encourages eagerness and willingness to investigate various mobile resources. Research has indicated that learners who consider MALL pleasurable and beneficial are more likely to explore various ways of engagement in the learning process, such as using gamified applications for vocabulary development or listening to language podcasts (Arcos & Ortega, 2021). Nikou and Economides, 2021). Thus, by fostering a positive attitude, varied learning experiences may provide more development opportunities and enhance the dynamism and enjoyment of learning a foreign language.

Conversely, hostile or indifferent views about MALL might greatly hinder the advantages learners can receive from these technologies. Learners who resist using mobile devices to learn a language may avoid advantageous features or fail to fully use the learning opportunities offered by mobile applications (Retnomurti & Amalia,2022). This unwillingness to learn can result in deficiencies in their skill development, hindering their ability to accomplish their linguistic objectives effectively.

Moreover, fostering a positive attitude towards MALL also equips learners for an era in which technology assumes a progressively prominent role in education programs in general. A positive attitude towards technology and its implementations for instructional purposes empowers learners to develop greater autonomy in their learning, enabling them to assume control over the learning process and advance at their own pace (Gholami & Azami, 2022).

Fundamentally, cultivating positive attitudes towards MALL entails more than simply enhancing learners' technological capability; it involves fostering their perception of learning as a continuous, adaptable, and individualized activity(Lan et al., 2021). Evaluating EFL learners' attitudes towards MALL is essential for comprehending their engagement with mobile learning tools. A frequently employed tool involves using Likert scale questionaries and classroom observations (Basoglu & Akdemir, 2022).

Various means can be employed to promote a positive attitude towards MALL. According to Rahimi and Fathi (2022), the seamless integration of mobile learning into class activities makes them a fundamental part of the learning process. Moreover, continual assistance and instruction are also essential in influencing learners' attitudes towards MALL, especially if learners have difficulties adopting mobile devices for educational purposes or with specific applications or functionalities. Providing instructional sessions or individual support can assist students in overcoming these obstacles. Moreover, they are less afraid of experiencing frustration or feeling overwhelmed by the technology (Chen & Wang, 2021).

Although the direct impact of Mobile-Assisted Language Learning MALL on EFL learners' language skills, in general, and pronunciation abilities in particular, is dependent upon its usage and functions included in the application, the positive attitudes of learners towards MALL are seen to be essential in promoting the motivation and consistency required for enhancing pronunciation skills via mobile applications. Adopting a positive attitude towards MALL enhances the probability that learners will consistently utilize mobile tools for practice, taking advantage of features such as speech recognition and immediate feedback.

Pronunciation skills

Proper pronunciation is important because it immediately influences EFL learners' ability to maintain successful communication in the English language. Mastering pronunciation skills increases learners' likelihood of accurately communicating their ideas and preventing misunderstandings, as Baker (2022) claims that "pronunciation is not simply an add-on to language learning, but a key component of communicative competence that should be emphasized alongside other language skills" (p. 52).

Therefore, the importance of pronunciation in EFL instruction has increased, focusing on using various instructional methods and tools to support learners in developing these abilities. The main goal of pronunciation instruction is to enhance learners' ability to articulate words clearly and understand oral language, promote more successful exchanges among speakers and listeners, and prevent misunderstanding. Thomson and Derwig (2023) mention that pronunciation skills are related to the learner's ability to recognize aspects of oral languages, such as producing sounds, stress, pitch, rhythm, and intonation. Kirkova (2023) adds that pronunciation skills are also related to speech features so that learners can understand and produce the language of native speakers. This set of abilities includes segmental characteristics (individual sounds) and suprasegmental characteristics (stress, intonation,

and rhythm), collectively producing natural speech. According to Levis and Moyer (2023), effective EFL pronunciation instruction needs to cover both suprasegmental and segmental aspects explicitly or directly. Explicit instructional practices on correct articulation are vital, but EFL learners also benefit from implicit learning through exposure to realistic language and consistent practice in real-world settings.

Over the past few years, the significance of EFL pronunciation instruction has increasingly emphasized integrating diverse digital tools and resources to enhance learners' pronunciation abilities (Karim et al.,2023). New technological advances may offer learners indefinite possibilities for personalized learning within and beyond the limitations of the classroom setting. As Saito (2022) states, "Technology-assisted pronunciation tools offer learners more opportunities for individualized learning outside the classroom" (p. 117). Additionally, Jiang et al. (2023) highlight the benefits of voice recognition functions and similar tools that offer learners prompt and comprehensive feedback on their pronunciation, allowing them to focus on specific areas for improvement.

Many studies have investigated the nature of EFL learners' pronunciation skills and ways to improve them, resulting in significant pedagogical implications for pronunciation instruction. Levis and Moyer (2023) emphasize that integrating explicit and implicit phonetic instruction in EFL instruction is crucial for developing learners' abilities to manipulate speech's segmental and suprasegmental characteristics. Furthermore, Saito and Hanzawa (2023) stress the importance of using language learning applications to improve EFL learners' self-paced practices of accurate pronunciation, resulting in more developed learner autonomy and self-regulated language learning strategies. Levis (2022) and Foote (2023) highlight the role of focused feedback from instructors and peers within communicative activities or tasks in enhancing oral fluency skills with due attention paid to stress, intonation, and rhythm.

Additionally, Baker (2022) and Mahmood (2023) highlight the impact of the EFL learners' exposure to authentic oral language on improving their awareness of features of oral speech, such as rhythmic and stress patterns. Kim and Saito (2022) advocate using visual aids such as spectrograms to teach EFL pronunciation skills, especially if they are simultaneously integrated with sound analysis tools. Kang and Moran (2022) claim to use blended learning practices that combine in-person instruction with online resources to provide learners with opportunities for varied and consistent practice of pronunciation skills.

The pronunciation assessment has progressed from conventional evaluations concentrating on particular sounds to more comprehensively

evaluating overall fluency, intonation, and intelligibility. A thorough evaluation of EFL learners' pronunciation skills should encompass the accuracy of individual sounds, stress, intonation, and rhythm. Contemporary assessment of EFL pronunciation encompasses a wide range of practices that enable learners to demonstrate their pronunciation abilities in authentic, communicative contexts, including task-based assessments, oral presentations, and role-playing tasks (Derwing & Munro,2022; Kang et al., 2023; Saito & Plonsky, 2022). Finally, Shohamy (2022) advocates using performance-based assessments to accurately demonstrate a learner's comprehensive pronunciation skills.

To conclude, the ability to recognize and produce intelligible speech is a vital element of the EFL learning process. Recent studies have revealed the importance of integrating new advances into EFL pronunciation instruction practices for teaching and assessment. Furthermore, the necessity of incorporating explicit and implicit practices into EFL instruction has been highlighted. In this study, pronunciation skills are defined as EFL learners' ability to accurately recognize and intelligibly produce oral speech with respect to individual sounds and connected speech features.

Context of the Problem

Scholars have highlighted the significance of pronunciation skills (Baker, 2022; Derwing & Munro, 2022; Levis, 2022; Thomson & Derwing, 2023). However, studies have shown that secondary school students need more mastery of these skills (Ahmed & Hassan, 2022; Farouk & Khalil, 2021; Gharib & Elsayed, 2024; Mohamed & Abdellatif, 2023). To identify the study's problem, the researcher administered a pronunciation test to a group of twenty first-year secondary school students from Cairo's Educational Governorate. The pilot study's findings indicated that a substantial percentage (69%) of the participants showed insufficient mastery of EFL pronunciation skills. Moreover, the researcher administered a scale to identify students' attitudes towards MALL. The questionnaire results indicated that 71% of the participants have negative attitudes towards MALL(see Appendix A for the pilot study).

Statement of the Problem

First year secondary school students need to improve their English pronunciation skills , and attitudes towards MALL. The observed weakness can be attributed to using traditional teaching practices .Thus, this study examines the effect of using Karaoke application for enhancing EFL pronunciation skills of first-year secondary school students and their attitudes towards MALL.

Hence, this study attempts to find an answer to the fundamental question.

What is the effect of the using Karaoke application for enhancing EFL pronunciation skills of first-year secondary school students and their attitudes towards MALL?

Subsidiary questions arise from this main question as follows:

1. What is the effect of using the Karaoke application for enhancing EFL pronunciation skills of first-year secondary school students?
2. What is the effect of using the Karaoke application for enhancing EFL pronunciation sub-skills of first-year secondary school students?
3. What is the effect of using the Karaoke application for enhancing EFL first-year secondary school students' attitudes towards MALL?

Hypotheses

1. There are statistically significant differences between the mean scores of the study's group students on the pre-and post-administration of the EFL pronunciation skills in favor of the post-administration
2. There are statistically significant differences between the mean scores of the study's group students on the pre and post-administration of the attitude towards MALL scale in favor of the post-administration.

Method

Design of the Study

The study deployed a quasi-experimental design, and the sample comprised one experimental group. The study group received treatment by using the Karaoke application to enhance EFL pronunciation skills of first-year secondary school students and their attitudes towards MALL. It is noteworthy that the researcher taught the study group students herself. A pre-post pronunciation skills test and attitude towards Mall scale were administered to the study's group before and after the implementation.

Participants

The study sample consisted of thirty (n = 30) first-year secondary school students randomly selected from a Cairo governmental school, Elsayeda Nafessa Secondary School, during the 2023–2024 academic year. Students' ages ranged from fifteen to sixteen years old. Accordingly, variables such as age and grade were not supposed to affect the students' performances during or after the treatment. Therefore, any achievement in students' EFL pronunciation skills, as well as its sub-skills, can be attributed to the treatment.

Instruments

EFL pronunciation Skills Checklist

The researcher developed a checklist to identify the key EFL pronunciation sub-skills that are of utmost importance for first-year secondary school students. The checklist was submitted to a panel of three specialists in Teaching English as a Foreign Language (TEFL) to ensure its validity. The final version comprised ten EFL pronunciation sub-skills (see Appendix B for the final version).

The Pre-Post Pronunciation Test

The researcher designed a pre-post EFL pronunciation test. It aimed to evaluate the student's mastery of the overall EFL pronunciation skill and sub-skills before and after the implementation. The test covered key elements of pronunciation, such as vowel sounds, consonant clusters, connected speech, rhythm, syllable stress, and individual phonemes. It included two sections, multiple-choice questions, and a reading-aloud task. The total marks for the test are sixty (60).

The first section emphasizes assessing the student's ability to identify and distinguish between phonetic and pronunciation patterns, such as word endings, stress, and vowel and consonant sounds. It consisted of ten items to be answered within ten minutes. In the reading-aloud task, students read aloud one paragraph and will be assessed using the holistic rubric.

In order to ensure the validity of the test, a panel of three TEFL specialists was asked to assess it. The panel was asked to determine whether the questions were appropriate for the measured sub-skills, whether the content was appropriate for the participants' level, and whether the total number of test items was appropriate and as specified for each sub-skill. The reading-aloud task was conducted using a semi-structured interview approach, where test tasks were to be carried out separately between the examiner (the teacher) and one of the participants (the examinee) to prevent influencing the examinees' oral performance with any personal considerations.

To determine its reliability, a randomly selected group of twenty-two students was given the pre-post EFL pronunciation skills test. The entire investigation was conducted without those students. Two weeks later, the same group was given the exam once again. The researcher employed the test-retest method. Next, a Pearson correlation coefficient was computed between the test and retest findings. The reliability coefficient was 0.81, which is considered to be relatively high. Consequently, the test could be considered reliable for the current study.

Twenty first-year Elsayeda Nafesa Secondary School students were randomly chosen from a single class to take the test. Students were not included in the experiment. Test time was determined by estimating the average time needed for the fastest and slowest students to complete the test, i.e., piloting the test. The time allocated to the test was twelve (12) minutes.

Furthermore, a holistic rubric for EFL pronunciation skills has been produced in accordance with the pronunciation skills checklist. Each pronunciation subskill was identified and described into five bands, each representing a different performance level. The values ranged from 1 to 5, representing poor, fair, good, very good, and excellent, respectively.

Moreover, three raters, the researcher (I) and two EFL teachers from governmental secondary schools (I, III), evaluated students' pronunciation skills in the reading-aloud task using the holistic rubric in the administration of the pre-post pronunciation skills test to ensure inter-rater reliability.

The researcher calculated the correlation coefficients between each rater in the pre-post pronunciation test for the reading-aloud task for the experimental group. High correlations were found, as the table below demonstrates:

Table (1)

Summary of the correlation coefficients among individual raters

Test	Raters		
Pre-test	I, II	I,III	II, III
	0.85	0.84	0.86
Post-test	0.86	0.91	0.84

By comparing the correlation coefficients in the preceding table to the correlation coefficient extracted from the statistical tables at the 0.01 level, it was found that the estimated correlation coefficients were statistically significant at 0.01. This demonstrates significant inter-rater reliability for the scoring system (the final test, the EFL pronunciation rubric, and the time allocated for each test section; see Appendix B).

Attitude towards MALL Scale

To identify the attitudes of first-year secondary school students towards MALL, the researcher designed an attitude scale. The objective is to determine the participants' attitudes towards MALL before and after the implementation. It consisted of fifteen statements that assessed multiple aspects of students' attitudes towards MALL. The participants were asked

to indicate their level of agreement with each statement using a five-point Likert scale, which ranges from one (indicating strongly agree) to five (indicating strongly disagree).

It was given to a panel of three TEFL specialists to verify the scale's validity in terms of its appropriateness to measure attitudes towards MALL and the content's suitability for participants' level (see Appendix C for the final version).

Procedures

Prior to the beginning of the treatment, the pre-post pronunciation test and the attitude towards the MALL scale were administered to the experimental group. The duration of the implementation was extended to nearly three months. It began on the 10th of February and ended on the 23rd of April, 2024. The experimental group received instruction using the Karaoke application. The researcher conducted an introductory session with the participants, lasting one hour, to introduce and demonstrate how to use the Karaoke application. It also included an overview of the program, general guidelines for the sessions plan and time framework of sessions, and

The implementation went through ten sessions. The researcher met with the participants weekly in a multimedia classroom setting (where each student used his mobile). Each session lasted for sixty (60) minutes, resulting in a cumulative duration of around ten (10) hours. Each session concentrated on distinct pronunciation skills. The program aims to improve participants' pronunciation skills and attitudes towards MALL. Every session included practical modeling of a distinct sub-skill through a selected song used as a speech pattern model.

Each session aims to help students become more advanced at a pronunciation sub-skill by using a smartphone karaoke app with interactive features like multimodal singing, speech recognition, game-like scoreboards, shared rooms, and duet mode. Each student should maintain the karaoke app installed on their device for the 60-minute session; headphones are strongly encouraged to facilitate better concentration. The session instructional plan included seven procedures: introduction, warm-up listening activity, vocabulary and pronunciation focus, lyrics reading, independent karaoke singing, peer feedback and reflection, and wrap-up and homework.

The instructor will give a five-minute introduction to the class, discuss how singing along to the selected English song helps improve the intended pronunciation sub-skill, and distribute the session handout. In addition, the instructor will point out that the karaoke app enables students to engage in enjoyable collaborative and individual activities.

Afterward, students will engage in a 10-minute warm-up listening activity to familiarise them with the chosen song. The instructor will select a song with a moderate pace and precise articulation. The song will be played twice for the students: once to concentrate on listening and again to follow along with the lyrics. Students are advised to write new phrases or pronunciation patterns during this activity.

The next ten minutes will be dedicated to vocabulary and pronunciation focus procedures. The instructor will highlight difficult words in the song and demonstrate how to pronounce them correctly, emphasizing stressed syllables, vowel sounds, and intonation patterns. Students will subsequently review these words with the instructor and practice them individually, in pairs, or in small groups, utilizing their phones as a reference. In the lyrics reading procedure, students practice reading the lyrics aloud individually for five minutes. The instructor monitors pronunciation and provides feedback on intonation and fluency as some students take turns reading the lyrics aloud from their devices. This procedure allows students to reconcile the song's rhythm with their spoken words before singing.

The independent karaoke singing procedure will last 20 minutes, requiring students to access the app and begin singing alongside the musical track. Students are invited to record themselves singing, and the application will lead them through the lyrics. Ideally, students ought to wear headphones when singing alone throughout the first recording. Then, students can share their recordings with the class using the "room" feature or sing a duet with a peer. They can also practice singing different parts of the song together, taking turns. The application will help students reflect on their areas of weakness by giving them comments and scores based on pronunciation accuracy.

Then, the session ends with a five-minute peer feedback and reflection procedure. Using the "room" function of the app, students will see others' recordings and provide constructive feedback. They will discuss their results and point out areas that need work. The instructor will lead and offer additional guidance for improving pronunciation throughout the feedback and reflection procedure. At the end of the session, the instructor will summarize the key points and identify the task assignment. As homework, each student will choose a new song from the karaoke app, practice independently, and submit their best performance via video or audio recording to the shared app room Before the following session. This assignment emphasizes the value of practicing pronunciation using the dynamic features of the karaoke app.

The implementation followed the scope and sequence specified in the required textbook for secondary school students (New Hello, the Students' Book, Second Term). The attitude towards the MALL scale and the EFL pronunciation skill test were re-administered at the end of the program. In addition, at the end of the sessions, a retrospective questionnaire was given to the participants to determine whether or not they encountered the sessions as exciting and beneficial. It comprised fifteen statements (for the retrospective questionnaire, see Appendix D).

Results

The Statistical Package for Social Science (SPSS) was employed to carry out statistical analysis of the data using the paired sample t-test and Eta square. The first research hypothesis was verified using a t-test to compare the scores of the experimental group participants on the pronunciation skills test in the pre-post administrations. The statistical analysis revealed significant differences in favor of the post-administration at a significance level of 0.01, shown in Table 1.

Table (2): Results of the pronunciation skills test comparing the experiments group students' scores regarding the overall skill.

Admin.	Mean	N	Std.	DF	T value	Effect size
pre	30.152	30	1.201	29	12.522	0.952
post	58.321		2.055			Large

According to the t-value (12.522) and effect size (0.952), which are displayed in Table 1, the experimental group's mean scores on the pronunciation skills test were statistically significant in the pre-and post-administrations of the pronunciation test, with the post-administration revealing an enhanced overall skill.

Using a t-test, the pronunciation sub-skills of the experimental group students' pre- and post-administration results on the EFL pronunciation skills test were compared.

Table (3): Results of pre-post administrations of the pronunciation skills test comparing the experimental group students' scores in relation to pronunciation sub-skills.

Pronunciation Sub-skills	Pre		Post		T value	Effect size
	Mean	St.D	Mean	St.D		
Distinguishing between long and short vowel sounds, diphthongs, and reduced vowels.	2.1211	.77190	4.4519	.80815	4.12	.847 Large
Recognizing common consonant clusters	1.2972	.96266	4.4279	.75417	5.56	.745 Large
Recognizing and applying sentence stress, word stress, and intonation.	2.0859	.84847	4.5721	.97238	4.48	.844 Large
Demonstrating Linking sounds and assimilation,	2.1922	.77084	4.5769	.90591	5.99	.685 Large

Demonstrating the accurate use of rhythm.	1.1605	.71577	4.2212	.92382	6.36	.701 Large
Emphasizing the correct syllable in multisyllabic words.	1.0477	.90524	4.0986	.86004	5.39	.811 Large
Differentiating between /θ/ and /ð/	1.7028	.98890	4.7284	.77039	5.14	.785 Large
Articulating /r/ and /l/ sounds intelligibly	1.6876	.76474	4.8798	.89877	6.42	.746 Large
Demonstrating the difference between voiced and voiceless consonants	2.1211	.77190	4.4519	.80815	4.12	.847 Large
Pronouncing word endings correctly	1.2972	.96266	4.4279	.75417	5.56	.745 Large

The second hypothesis was verified by comparing the experimental group participants' mean scores on the attitude towards the MALL scale in its pre-post administrations, as shown in Table 3.

Table (4): Results of pre-post administrations of the oral communication apprehension questionnaire comparing the experimental group students' mean scores

Survey Items	Pre – administration		Post-administration	
	Mean	**St.D**	**Mean**	**St.D**
Sentence 1	1.7890	0.29442	3.8116	0.13141
Sentence 2	1.3192	0.73725	3.7890	0.45895
Sentence 3	1.2326	0.60757	4.0586	0.06517
Sentence 4	1.2048	0.90771	3.5233	0.98231
Sentence 5	1.3000	0.90244	3.7169	0.94360
Sentence 6	1.5964	0.87514	3.9000	0.00975
Sentence 7	1.5556	0.01490	3.0723	0.73599
Sentence 8	1.1333	0.84305	3.2540	0.12104
Sentence 9	1.1875	0.42905	3.8417	0.99017
Sentence 10	1.6092	0.12289	3.5000	0.33900
Sentence11	1.6984	0.91622	3.3908	0.64199
Sentence 12	1.9724	0.36402	3.2381	0.09377
Sentence 13	1.5138	0.71587	3.2085	0.08963
Sentence 14	1.5440	0.23793	3.1009	0.12382
Sentence 15	1.3372	0.86585	3.5212	0.79508

Table 3 shows that there were statistically significant differences in the mean scores of the participants favouring the post-administration.

Discussion

The study's findings indicate that the usage of the Karaoke application has a significant impact on enhancing pronunciation skills ($n2 = .847$). This value was suggested by comparing the scores of the experimental group students on the pre-and post-administrations of the pronunciation skills test. Moreover, students' attitudes towards MALL have also increased. This value was shown by comparing the mean scores of the experimental group students on the pre and post-administration of the students' attitudes toward the MALL scale.

The results of the present study are consistent with the results of previous studies that showed the positive effect of using the Karaoke application on developing some EFL learners' skills (Panggabean & Batubara, 2022; Park & Kim, 2023; Sanchez & Gonzalez, 2022). Moreover, the students' attitudes towards the MALL level have increased, consistent with other studies findings (Basoglu & Akdemir, 2022; Gholami & Azami, 2022; Retnomurti &Amslia, 2022).

Students' significant progress can be discussed in relation to various factors, particularly general aspects of the MALL, the Karaoke application, and the proposed program. Concerning results obtained from the retrospective questionnaire, factors can be discussed as follows:

In general, several aspects of MALL may contribute to students' enhancement in pronunciation skills. Firstly, the personalization features enabled participants to interact with songs at their own pace and adjust their learning experiences according to their preferences. They were allowed to sing along individually or duet, record audio tracks or videos, practice inside or outside the classroom, record songs as whole or parts, and practice as needed. This personalization feature paved the way for more focused and self-paced practice, improving participants' EFL pronunciation skills.

Secondly, accessibility is another fundamental feature of MALL that usually reduces the time and setting limitations imposed by traditional classroom learning environments. 97% of the participants agreed with the statement, 'I used the Karaoke app regularly outside the classroom.' This feature played a significant role in reinforcing the sub-skills tackled or learned in sessions.

Thirdly, MALL's interactivity aspect established a dynamic and rich learning environment by incorporating varied multimedia tools such as audio tracks, audio and video recording, scoreboards, visualized lyrics, and voice recognition. Hence, participants were encouraged to be involved in a highly vivid learning process and develop better awareness and manipulation of spoken language.

Fourthly, MALL facilitated collaborative learning by allowing participants to practice pronunciation skills via singing with peers, sharing tracks they recorded among classmates, and getting feedback on their pronunciation. 96% of the participants strongly agreed with the statement ', the duet and room features helped me practice with others effectively.' Hence, participants were able to develop a sense of community, which in turn fostered their engagement and confidence.98% of the participants noted that they disagreed with the statement 'I felt shy or uncomfortable using the Karaoke app during class

Finally, the immediate feedback enabled by the MALL's tools provided participants with opportunities to tackle their errors instantly, fostering their learning process. 98% of the participants noted that they agreed with the statement, 'The feedback from the app (scores, etc.) helped me identify areas for improvement.' Students could deal with errors as they happened, enhancing dynamic learning processes and retention abilities.

With respect to the Karaoke app, several features have contributed to participants' development in pronunciation skills, particularly the digital multimodal song creation, real-time lyric highlighting, repetition and replay, speech recognition, and duet and room practice. These features have provided participants with a comprehensive learning environment that induces their active participation, direct language modeling, self-paced learning, instant feedback, and peer collaboration, leading to an effective overall learning experience.98% of the participants noted that they agree with the statement 'the overall experience of using the Karaoke app was beneficial to my learning.'

Firstly, the digital multimodal song creation feature is one of the most fundamental strengths of the Karaoke app. Unlike the traditional passive learning practices, this feature helped students immerse themselves in an authentic English pronunciation practice, which simultaneously reinforced their listening, vocabulary, grammar, and pronouncing abilities. Participants were triggered to use multiple senses simultaneously to accomplish their task as song creators, i.e., hear the melody, listen attentively to the song, understand the lyrics, and sing along the song while reading its lyrics. Most participants strongly agreed with the statement, 'I found the Karaoke app sessions engaging and motivating' and 'Singing with the Karaoke app significantly improved my pronunciation.'

Secondly, through the real-time highlighting feature, participants were enabled to receive direct spoken and written language modeling simultaneously. The karaoke app provided participants with written texts that appeared in accordance with the music while students were singing

the song via audio or video. This feature fostered participants to imitate the intonation and pronunciation of native speakers and relate spoken words to their written presentations, reinforcing their word recognition, phonemic awareness, and literacy skills. 91% of the participants strongly agreed with the statement, 'practicing with the Karaoke app helped me become more confident in my English.'

Thirdly, self-paced learning was initiated by the repetition and replay feature provided by the Karaoke app. This feature allowed participants to slow down or increase the song's speed as suitable, repeat the song or parts as needed, and record as many times as preferred. Accordingly, this feature helped participants to internalize pronunciation patterns gradually and unconsciously while attempting to sing in the natural flow of speech. Furthermore, the repetitive and regular exposure to authentic speech rhythms allowed participants to address various areas of pronunciation, including stress, rhythm, pitch, sounds, intonation, etc. Most participants agreed with the following statements: ' My word stress improved through using the karaoke app.,' 'My rhythm and fluency improved by practicing with the app.,' and 'I felt that intonation improved after using the karaoke app.'

Fourthly, the voice recognition feature in the Karaoke app allowed participants to receive instant feedback on their challenging aspects of pronunciation, leading to a more focused and supportive pronunciation practice. 95% of the participants strongly agreed with the statement, 'The feedback from the app (scoreboards) helped me identify areas for improvement.' This feature helped participants to identify their mistakes and make tangible corrections instantly. Thus, they experience an immediate improvement, which fosters more practice. Most participants agreed with the statement, 'The Karaoke app helped me pronounce specific sounds (e.g., vowels, consonants, etc.) more correctly.'

Finally, the Karaoke app allowed participants to practice with peers through the duet mode and room function, establishing a collaborative language learning environment. After practicing individually and receiving the app-based instant feedback, participants are promoted to interact with their peers and classmates to receive feedback from classmates. These engaging, challenging, and supportive interactions encouraged participants to more accurately practice song production. Most participants strongly agreed with the statement, 'The peer feedback during class was helpful in improving my pronunciation.'

The proposed program was characterized by comprehensively combining explicit and implicit pronunciation instruction practices, individual, peer, and collaborative interactions, and app-based and peer feedback. Sessions

were sequenced logically to foster participants' gradual progress in pronunciation skills. Explicit pronunciation instruction was undertaken through the 'vocabulary and pronunciation focus' procedure and was reinforced by the use of 'handouts for sessions.' As for the implicit pronunciation instruction was carried out through the 'independent karaoke singing' procedure.

In addition, the types of interactions included were varying to allow participants to focus on different aspects of their pronunciation effectively (i.e., segmental and suprasegmental).In addition, participants received feedback instantly via the voice recognition feature of the karaoke app and delayed feedback from peers and instructors via the duet mode and room function. Both types of feedback reinforce the participants' accurate modeling and internalizing of natural speech patterns.

Considering the participants' attitude towards MALL, tangible progress has been noticed, which can be attributed to several factors, which can be tackled in light of the attitude towards MALL scale administration. Firstly, combining music and singing with language learning makes students more willing to participate as melody is a universally appealing medium, i.e., they were enthusiastic to enjoy practicing pronunciations through Karaoke as a music app. Most participants agreed, ' I feel more enthusiastic about learning English when using music apps.'

Secondly, the Karaoke app allowed students to tackle their mistakes by themselves and individually address their points of weakness through voice recognition and replay features. Consequently, participants experienced an immediate improvement in their pronunciation, which increased students' confidence and autonomy and induced their eagerness to use the MALL's tools more frequently. The majority of participants noted that they strongly agreed with statements such as' practicing songs via music apps helps me better understand how native speakers pronounce words,' 'the immediate feedback I get from a mobile app helps me improve my English faster,' 'I feel more enthusiastic about practicing English using mobile apps compared to other methods,' 'using mobile apps makes me feel more confident in speaking English,' and 'I am eager to use more mobile apps for learning English.'

Thirdly, participants were triggered to take roles in challenges via interactive game-like features, which kept them engaged in using English for a long time. This enjoyable learning process motivated participants to learn English through mobile apps. 97% of the participants noted that they strongly agree with the statement, 'I find learning English more interesting when using interactive game-like mobile apps.'In addition, 95

% of participants strongly agreed with the statement, 'I feel motivated to learn English when using mobile apps with scoreboards.'

Fifthly, participants practiced listening and reading aloud authentic songs in a repetitive manner, engaging themselves in a highly immersive learning experience. In other words, the participants' frequent exposure to and manipulation of authentic English songs strengthened their listening and speaking abilities simultaneously, fostered their awareness of speech aspects, and enhanced their learning of new vocabulary and grammar, leading to an immersive English learning process that likely contributed to positive attitudes towards mobile apps as valuable EFL tools. The majority of participants noted that they strongly agree with the statements' Mobile apps helped me practice reading and listening skills in English', 'I understand English grammar better when I practice using mobile apps,' 'Mobile apps make learning new English words more enjoyable,' and 'I believe mobile apps helped me improve my grammar and sentence structure.'

Conclusion

The study examined using the karaoke app to develop the pronunciation skills of first-year secondary school students and enhance their attitude towards MALL. The karaoke application was used with a group of thirty (n=30) first-year secondary school students in the Cairo Government. Based on the study results, there is evidence that using the karaoke application for first-year secondary school students had a significant effect on developing pronunciation skills. Moreover, the student's attitude towards MALL has significantly increased. Nevertheless, the current study was limited to the usage of the Karaoke application with due attention to the digital multimodal song creation function that allows EFL learners to engage in the language learning process as song creators, i.e., access, listen, repeat, along, record, create, and share English songs among peers; where other functions of the application were not included in the study.

Recommendations

Teachers should integrate the Karaoke mobile application into EFL pronunciation lessons to enhance student's learning experience by making it more interactive and exciting. Students should be encouraged to consistently employ the Karaoke mobile application within and beyond the classroom to enhance pronunciation. Curriculum designers should incorporate mobile applications, such as karaoke apps, into EFL programs to offer a more dynamic and technology-enhanced environment for language learning.

Furthermore, additional research needs to be conducted to investigate the long-term effects of karaoke applications on students' language proficiency and pronunciation. Longitudinal research can provide a more in-depth investigation of MALL's tools' pedagogical impacts and long-term effects. Furthermore, researchers may investigate the potential of the karaoke application to enhance other language skills, including fluency and oral comprehension.

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