

Improving Junior High School Students English Speaking Skills Using the Speechace Application

Arry Pauji Harahap¹, Ahmad Amin Dalimunthe²

arry0304202114@uinsu.ac.id¹ amindalimunte@uinsu.ac.id²

Universitas Islam Negeri Sumatera Utara, Medan

Received: 2024-07-26 Accepted: 2024-08-16

DOI: 10.2456/ideas.v12i2.5364

Abstract

The intent of the study was to examine the efficacy of using the Speech Ace program in enhancing the English oral proficiency of junior high school pupils. A quasi-experimental approach was used, consisting of one experimental class that included Speech Ace during sessions, and one control class that received standard education. Both courses underwent pre-testing and post-testing to assess their speaking abilities. The findings demonstrated a statistically significant enhancement in the average score of the experimental group's post-test, which increased from 75 to 88 ($p=0.001$). On the other hand, the control class did not show a notable variation in average scores, which ranged from 73 to 75 ($p=0.05$). A t-test analysis comparing independent samples showed a statistically significant difference between the groups, with a p-value of 0.000, which is less than the significance level of 0.05. As a result, it was determined that the study hypothesis was confirmed, indicating that SpeechAce had a considerable impact on students' English-speaking proficiency. The good evaluations of SpeechAce were also seen in the student interviews and surveys. In summary, the results of the study provide concrete evidence that using technology-based tools like SpeechAce may significantly improve students' pronunciation abilities when used with traditional teaching techniques.

Keywords: *English Speaking skills, SpeechAce Application, Educational Technology, Student Engagement.*

Introduction

Speaking is a crucial language ability since it designates those who have acquired a language as proficient speakers of that language. The primary goal of English instruction is to equip learners with the capacity to use English proficiently and accurately in communication (Davies, 2000). Each educational experience in the homeroom presents various challenges or conditions that hinder the educational process, such as the use of teaching approaches that overly strain pupils (Anggraini, 2022). Nevertheless, language learners have challenges in achieving fluent and accurate communication due to their insufficient expertise in this domain. Nevertheless, language learners are unable to communicate effectively and correctly due to their inadequate expertise in this domain. It is the method by which learners may interact with others in order to accomplish certain objectives or to convey their thoughts, ideas, aspirations, and perspectives. Furthermore, those who possess knowledge of a particular language are often identified as 'speakers' of this language.

Furthermore, speaking is the language ability that is most often used in almost every context. (Lubis & Indra Kurniawan Siregar, 2021) asserts that speaking encompasses not just the fluency of speech, but also the capacity to absorb information and language with caution, without necessarily relying on understanding of linguistic features. The primary objective of the instructor in teaching speaking skills is to demonstrate and highlight the key features of the show. According to Hughes (2002), fluency refers to the proficiency of learners in speaking clearly and comprehensibly, in order to effectively engage listeners without causing them to lose interest. According to Hedge (2000), fluency refers to the capacity to respond coherently by linking words and sentences, articulating sounds accurately, and using emphasis and intonation.

Speaking and writing are often juxtaposed due to their classification as "productive skills" in contrast to "receptive skills" such as reading and listening. Speaking and listening are two interconnected methods of communication. Each individual who listens has the capacity to also be a speaker, and each one who speaks is also a listener at the same time. Verbal communication involving two or more individuals to convey information is referred to as speaking. Modifying information is an essential element of everyday interpersonal communication. As to Brown's

research in 2001, speaking is a dynamic process where individuals engage in providing, receiving, and processing information in order to create understanding.

Furthermore, Nunan (1995) highlights that active student engagement in communication facilitates the acquisition of a second language. As stated by (Summer, 2003), speaking refers to the action of articulating one's thoughts or ideas, or using one's words to substantiate a claim. When assisting students in class with their oral communication, instructors may encounter many challenges related to their speaking abilities. Tuan (2015) identified many factors that contribute to this issue, including inhibition, limited subject knowledge, minimal involvement, and reliance on the mother language. Students first confront obstacles inside the classroom. They may have difficulty expressing themselves in class. They experience apprehension towards criticism and have concerns over producing errors. They feel embarrassed by the attention they get from other kids. As per Littlewood,

In addition, Pourhossein Gilakjani (2014) asserts that the use of technology might provide a learning environment that prioritizes learning itself rather than the instructor, hence promoting beneficial transformation. By using technology, the language classroom transforms into a dynamic setting where students are given the task of learning. (Drayton, 2010) argues that the use of computer technology offers an authentic educational experience that improves learners' responsibility in the process of learning. Technology enables pupils to participate in self-directed learning with complete accountability. As technology continues to progress, we may integrate it into education as a more advanced tool to enhance the learning process. Furthermore, it is crucial to recognize the significance of technology in staying abreast of its ongoing advancement.

Currently, several public and private schools have modified their methods of instruction and learning, particularly due to the worldwide pandemic and the fast progress of technology. Many educational institutions have taken advantage of the usage of technology as a tool for learning. The availability of excellent human resources is a crucial factor that determines the changes and developments in schools. Teachers have a vital role in creating instructional strategies, implementing

efficient administration, and demonstrating a profound comprehension of educational ideas. Technology integration should be seen as a method to improve its quality and tackle different difficulties. Technology functions as a remedy for a multitude of human issues. Educational technology functions as both a tool for obtaining knowledge and a rich resource of information and learning materials that enhance the teaching and learning process, thereby increasing accessibility to education. (Salsabila and Agustian, 2021).

Recent research on technological advancements have proposed Automatic Speech Recognition (ASR) technology as an effective tool for improving the speaking abilities of foreign language learners, thereby supporting the notion of integrating technology in English teaching and learning. Some ASR-based systems include Carnegie Speech Native Accent (Eskenazi et al., 2007), EduSpeak (Franco et al., 2010), Japañol (Tejedor García et al., 2021), My Pronunciation Coach (Cucchiari et al., 2012), Novo Learning (NovoLearning Research Report, 2019), Saybot (Chevalier, 2007), DISCO (van Doremalen et al., 2016), GREET (Penning de Vries et al., 2020), the PARLING system (Neri et al., 2008), SPELL (Morton & Jack, 2010), Rosetta Stone (www.rosettastone.com), ElsaSpeak(www.elsaspeak.com), Speechace(www.speechace.com), and English Central (www.englishcentral.com).

The Speechace application is an online platform that utilizes Automatic Speech Recognition (ASR) technology to assist users in improving their English-speaking skills. The Speechace application offers a variety of features focused on developing English speaking skills. Using Automatic Speech Recognition (ASR) technology, it automatically recognizes users' speech and provides immediate feedback on pronunciation, intonation, and common errors. Additionally, Speechace provides personalized pronunciation exercises tailored to users' proficiency levels and interests. Users can record and playback their own speech to compare it with provided audio examples. With diverse learning content ranging from general exercises to specific topics like public speaking or job interviews, Speechace effectively facilitates English speaking learning. Further studies show that the app can enhance pronunciation and fluency among second language learners in a relatively short time (Winke & Gass, 2020).

Pronunciation issues have the potential to occur in schools in Indonesia. This was shown while doing teaching practice in SMP Tunas Karya, Batang Kuis, where the researcher found that students are given assignments to make and practice dialogue about opinions, both asking and giving opinions. The problem is that some of the students still need to gain pronunciation accuracy which is shown by the mispronunciations of English word. Two students mispronounce word “thirteen” to “tirteen” and word month to “moon”. Pronunciation comprises vowels, word stress, and intonation-factors influencing fluency and clarity (Celce-Murcia et al., 1996). Mispronunciations can lead to misunderstandings (Munro & Derwing, 2011). Thus, mastering pronunciation is critical today as English connects globally (Crystal, 2012).

Despite the importance of pronunciation, major problems still exist. Students make many pronunciation mistakes due to the influence of their native languages such as Bahasa Indonesia which differs from English (Fadilla, 2019; Nurweni & Read, 1999). They understand the theory but have difficulty with oral practice (Pourhosein Gilakjani, 2016). English final consonant clusters that do not exist in Indonesian also make it difficult. Many vowels and consonants are hard to pronounce, so students use an easier pronunciation (Purba 2021). Errors occur due to differences in Indonesian and English pronunciation as well as the dominance of native languages that affect students' English pronunciation (Solak & Baytar, 2014). And then, the research found that students' fluency comes from the results of their practice. Many students who tirelessly learn English recognize the procedure. However, their ability to speak is very difficult this makes students bored. Sometimes the teacher can only explain English by explaining the material without any joint practice. Even the practice is only occasionally and that students become slow to digest and speak in front of people. (Santosa 2022).

The research by Yuniar (2023) delved into the effectiveness of Speechace in improving students' pronunciation accuracy in an English class setting at SMAN 15 Surabaya. Utilizing an exploratory research design, data collection involved focus group discussions, interviews, and questionnaires with English teachers and

students. Through coding and interpretation, the study identified Speechace's pivotal roles in stimulating interest, providing a positive learning experience, aiding autonomous learning, and reinforcing various skills, despite challenges like internet connectivity issues and inaccuracies in corrections. Building upon this exploration of digital tools in language learning, Al Fauzan (2018) investigated the impact of mobile social networking on EFL students' speaking ability, highlighting improvements in pronunciation and smoothness through pre-test and post-test assessments. Transitioning from digital platforms to specific applications, Anggraini et al. (2023) assessed the efficacy of the Hello English app in enhancing students' speaking skills through classroom action research. The study revealed significant improvements in mean scores, supported by questionnaire responses indicating the app's ease of use and contribution to speaking practice. Together, these studies offer insights into leveraging digital tools like Speechace, mobile social networking, and language learning applications to enhance specific language skills, thereby contributing to a deeper understanding of digital interventions in language education.

Also, the research done by Azzuhra & Amri (2023) further enhances our knowledge of digital interventions in language teaching by showing the efficacy of the Cake application in improving students' speaking abilities. This is seen by the substantial rise in the average score from the pre-test to the post-test. The post-test was administered subsequent to the therapy in order to compare and evaluate the outcomes. The results of the normality and homogeneity tests indicated that the pre-test and post-test data exhibited normal distribution and homogeneity. The independent t-test analysis yielded a significance value of 0.000, which is below the threshold of 0.05. This indicates that the null hypothesis is rejected and the alternative hypothesis is accepted. Thus, the study's findings affirm that the Cake application is efficacious in improving students' oral communication abilities, as seen by the results.

Then, Karim et al. (2023) conducted a study aiming to examine the impact of utilizing the ELSA Speak application on the speaking performance, perceptions, and inhibiting factors among EFL students. Employing a mixed-method approach, the research involved 21 students who underwent pre-test and post-test assessments to

measure their speaking ability. Additionally, they completed a Likert scale questionnaire and participated in interviews to elucidate their perceptions. The results indicated a significant improvement in students' speaking skills after the treatment, as evidenced by an increase in average scores from 75 to 88. Moreover, a majority of the respondents expressed positive perceptions towards ELSA, with 80% feeling that it enhanced speaking, 95% believing it boosted motivation, and 90% perceiving it as having good learning design. The study also identified major inhibiting factors such as low vocabulary, lack of practice and motivation, and a teacher-centered methodology. Consequently, the research concluded that the ELSA Speak application effectively promoted EFL speaking performance among the students (Karim et al., 2023).

Additionally, in alignment with Lesmana's (2022) exploration of digital language learning platforms, Hafifah (2020) delved into the efficacy of another application, Duolingo, in enhancing students' speaking skills. While Lesmana focused on the effectiveness of the ELSA Speak application, Hafifah conducted a quasi-experimental study involving Duolingo. Both studies employed research designs aimed at evaluating the impact of these language learning applications on students' speaking proficiency. Lesmana utilized a pre-experimental one-group pre-test post-test design with 33 eighth-grade students from SMPN 17 Makassar, while Hafifah employed a quasi-experimental design with 20 students from Class X IPS 2 in Madrasah Aliyah Bilingual Batu. Despite the methodological differences, both studies yielded statistically significant results, indicating notable improvements in students' speaking abilities after utilizing the respective applications. Lesmana's findings suggested a significant increase in students' average post-test score from 57.03 to 76.30 after using ELSA Speak, while Hafifah's research revealed a significantly higher average post-test score of 80.00 for students instructed using Duolingo compared to 74.25 for the control group without Duolingo instruction. Thus, these studies collectively underscore the potential of digital language learning applications, such as ELSA Speak and Duolingo, in effectively enhancing students' speaking skills within an English as a Foreign Language (EFL) context, contributing

to a comprehensive understanding of integrating technology into language education.

Moreover, to improve students' speaking skills, debate is one of the effective methods. This was evidenced in a study conducted by Lubis and Siregar (2021) at SMAN 1 Padangsidimpuan. The research involved 32 eleventh-grade students from SMA Negeri 1 Padangsidimpuan, who followed Kemmis and McTaggart's action research spiral model for two cycles, totaling six meetings of 90 minutes each. Quantitative and qualitative data were collected through speaking tests, observation sheets, and document analysis. The findings indicated a progressive improvement in students' average speaking scores from 46.87 in the first meeting to 77.81 in the sixth meeting, demonstrating the successful implementation of debate techniques in enhancing students' speaking abilities. Therefore, the researchers concluded that debate can be effectively used to improve English as a Foreign Language (EFL) students' speaking skills (Lubis & Siregar, 2021).

The study by Auliya et al. (2021) delves into the utilization of Mobile Assisted Language Learning (MALL) platforms among first and second-year student teachers to enhance reading skills. Through qualitative research methods, they uncover the extensive use of various MALL platforms, including Wattpad, social media, Duolingo, U-Dictionary, and Quora, by students for improving vocabulary, grammar, reading speed, and comprehension. Their findings underscore the effectiveness of MALL platforms in fostering autonomous learning and enhancing reading abilities among EFL students.

In a related vein, Mitchell Shortt et al. (2023) conducted a systematic review focusing on Duolingo as a representative of gamified MALL tools, aiming to understand current trends and challenges in the field. Their research approach involved exploring major databases and narrowing down an initial pool of papers through inclusion/exclusion criteria. Through qualitative coding, they found that research from 2012 to 2020 primarily focused on design aspects and employed quantitative methodologies, often utilizing English as the primary language. Their study emphasizes the need to shift focus towards language learning processes and outcomes, highlighting the importance of integrating social interaction elements beyond app design in MALL research.

And Then, the study by Peby Yurdean and An Fauzia Rozani Syafei (2016) investigates the use of Rosetta Stone as a learning medium to enhance speaking skills among junior high school students. It explores the implementation of Computer-Assisted Instruction (CAI) through Rosetta Stone software in classroom settings, focusing on speaking activities where students practiced pronunciation and drilled phrases, with their recordings scored for evaluation. Findings indicate that utilizing images and audio prompts in Rosetta Stone fostered students' focus during speaking practices and bolstered their confidence in pronunciation. Additionally, tracking scores on the software facilitated teachers in identifying areas for student improvement. The integration of CAI via interactive programs like Rosetta Stone offers an engaging approach to enhancing students' speaking abilities, presenting a promising alternative to traditional methods (Peby Yurdean & An Fauzia Rozani Syafei, 2016).

Prior research has shown that the SpeechAce program has the ability to improve English speaking abilities, as shown by studies conducted by Lee and Yoon (2022) and Goh and Arjan (2022). Subsequently, several research have investigated the enhancement of students' English-speaking proficiency via the use of digital aids and apps. In an exploratory study design, Yuniar (2023) examined the efficacy of Speechace in enhancing the precision of students' pronunciation at SMAN 15 Surabaya. The research conducted by Anggraini et al. (2023) included pre-test and post-test methodologies to evaluate the impact of the Hello English application on oral communication abilities. Meanwhile, Hafifah (2020) used a quasi-experimental approach with a single group, using pre-test and post-test measures to assess the efficacy of Duolingo. The research conducted by Hafifah (2020) used a quasi-experimental pre-post-test design, which included just one experimental group and lacked a control group for comparison. This constraint hinders the capacity to definitively attribute the disparities in post-test outcomes entirely to the intervention.

Thus, this research employs a quantitative quasi-experimental design with two groups: an experimental group that gets Speechace therapy and a control group that does not receive the treatment. Both groups will undergo similar pre-and post-tests to assess and compare the average enhancement in speaking scores. By comparing the experimental and control groups, this design may show a causal association by taking into account potential risks to internal validity, such as history, maturity, and testing effects, which are not controllable in single group research. This research seeks to confirm the efficacy of Speechace in enhancing the English-speaking abilities of junior high school pupils by using controlled experiments and statistical analysis to provide more robust data. The results are expected to provide more robust justification for incorporating apps like these into language teaching. For this research methodology, we need to gather more evidence on how effective and useful these tools are in real-world settings, especially for the development of various skills. Therefore, the research question is:

RQ1: Is there an overall improvement in students English speaking skills with Speechace application?

RQ2 How does the use of the SpeechAce application affect students speaking skills?

The aim of the present study was to explore the implementation process of the SpeechAce application as a technology-based intervention to enhance the English-speaking skills of 30 junior high school students from Tunas Karya Batang Kuis school. Specifically, the study sought to identify challenges faced by students in developing their speaking abilities based on pre-treatment assessment results.

This study adopted a quasi-experimental design with a pre-test-post-test control group structure involving two classes as samples (Dewi, 2023). The experimental class participated in treatment via the SpeechAce application during lessons while the control class engaged in conventional teaching without SpeechAce. Both groups sat similar pre-tests before and post-tests after treatment to gauge English speaking levels. Tests were then compared and statistically analyzed to ascertain the SpeechAce application's impact on developing students' proficiency (Dewi, 2023).

Literature of Review

Proficient oral communication abilities in English are crucial, as speaking involves articulating words and sentences vocally (Nunan, 2003). In contrast to reading and writing, the act of speaking occurs spontaneously, necessitating the simultaneous expression of thoughts. Mastery of the language itself and self-assurance are vital prerequisites for effective verbal communication (Hughes, 2002). Lacking competent speaking skills would severely impede communication, hindering the ability to negotiate meanings, voice opinions, make requests, share narratives, and collaborate through spoken exchanges. Consequently, adept speaking proficiency significantly contributes to functioning effectively across personal, social, educational, and professional domains (Hughes, 2002; Goh & Burns, 2012).

Numerous factors influence English speaking abilities, encompassing vocabulary, pronunciation, fluency, comprehension, and confidence (Derakhshan et al., 2016; Tuan & Mai, 2015; Supriyanti & Rojas, 2018). An adequate vocabulary enables the coherent formulation of ideas and sentences. Proper pronunciation, stress patterns, and intonation enhance clarity, naturalness, and prevent listener misunderstanding. Fluency pertains to the continuity, pace, and coherence of speech without excessive pausing or hesitation. Comprehension underpins meaningful interaction by grasping the context. Finally, confidence is crucial as it impacts the willingness and motivation to speak and convey intended messages effectively (Derakhshan et al., 2016; Tuan & Mai, 2015; Supriyanti & Rojas, 2018; Park & Lee, 2015).

Pronunciation is critical for achieving communicative competence and intelligibility when learning a new language. However, many second language learners struggle to acquire accurate pronunciation, leading to fossilized errors and communication difficulties (Derwing & Munro, 2005; Foote et al., 2016). Proper pronunciation involves mastering speech sounds, stress, rhythm, and intonation, which contribute to overall intelligibility or how well the speaker can be understood by the listener (Derwing & Munro, 2015). Poor pronunciation negatively impacts

communication success and learner confidence. Factors like age, language exposure, aptitude, and differences between the native and target languages influence pronunciation acquisition, often resulting in pronunciation transfer from the first language (Moyer, 2013). While explicit instruction and practice are crucial, traditional classrooms may lack sufficient individualized feedback, leading to fossilization of errors over time (Thomson & Derwing, 2015). To improve pronunciation, targeted activities, timely feedback, error awareness, and self-study resources are essential to help learners develop accurate pronunciation patterns and enhance intelligibility (Foote et al., 2016). Language learning applications are multimedia computer programs designed to assist in developing the four core language skills - reading, writing, listening, and speaking (Kirkgöz, 2017). These apps provide interactive materials and activities to enhance various aspects of language proficiency, incorporating elements such as text, images, audio, and video to facilitate understanding and increase engagement. Additionally, the activities within these apps are often adaptive, adjusting based on the user's responses and needs through assessment algorithms.

Numerous studies have demonstrated the effectiveness of language learning applications in improving language skills. For instance, Sun and Yang (2015) conducted an experiment utilizing mobile-assisted language learning (MALL) apps to enhance English vocabulary, reading, and writing skills, compared to traditional learning methods. The results revealed significant improvements in vocabulary acquisition and reading comprehension for the experimental group that used the apps. Furthermore, learners reported positive attitudes and enjoyment while using the apps, citing convenience, perceived benefits, and interactivity as contributing factors. Beyond skill development, language learning apps can also increase student motivation and willingness to learn languages, ultimately leading to higher proficiency achievement (Zou & Li, 2015). Alkhezzi and Al-Dousari (2016) found that using vocabulary-building apps strengthened students' mastery of vocabulary over time, as these apps allowed for spaced repetition, a proven technique for effective learning. Additionally, the instant progress tracking and reward systems commonly integrated into these apps can further boost motivation and engagement.

Recent advancements in speech recognition technology have enabled the

development of sophisticated speaking practice and evaluation apps. Automated Speech Recognition (ASR) technology has been increasingly integrated into language learning apps to provide instant, individualized analysis and feedback on various aspects of pronunciation, such as individual phonemes, stress patterns, rhythm, intonation, and overall intelligibility (Neri et al., 2002; Golonka et al., 2014). Several studies have demonstrated that combining ASR technology with structured pronunciation-focused exercises and activities can significantly improve pronunciation quality, especially when used consistently over time (Hand et al., 2009; Liakin et al., 2015; Lee & Yoon, 2022).

These ASR-enabled language learning apps, like Duolingo, ELSA, and SpeechAce, utilize advanced speech recognition algorithms to evaluate users' speech and provide real-time feedback on their pronunciation, promoting self-directed learning (Duolingo, 2017; ELSA, 2015; SpeechAce, 2020). By incorporating intelligent ASR systems and personalized remediation, these apps have the potential to accelerate language learners' mastery of speaking skills and help overcome the influence of their native language on pronunciation (Hand et al., 2009; Liakin et al., 2015; Lee & Yoon, 2022). While language learning apps offer numerous benefits, their effectiveness depends on how users integrate them into their overall language learning strategy and whether the apps align with established principles of second language acquisition and language teaching methodologies (Rosell-Aguilar, 2017). Effective apps should cater to different learning styles, provide opportunities for meaningful practice and interaction, and incorporate task-based, communicative, and learner-centered approaches, rather than solely focusing on rote memorization or grammar drills (Duman et al., 2015).

SpeechAce is a language learning app that utilizes Artificial Intelligence (AI) technology to help users practice English speaking skills. As an app specifically designed to improve speaking skills, SpeechAce uses an Automated Speech Recognition (ASR) system to analyze the user's pronunciation in real-time. After analyzing, the app then provides instant feedback on aspects such as accuracy of pronunciation, appropriateness of enunciation, fluency in speaking, and accuracy of

grammar used (SpeechAce, 2020). The application can be download on the App Store for iOS users. Meanwhile for Android users, speechAce can be accessed through the speechAce website by clicking the "Try in Browser" button to access the home page of the web application. The features available on the web version include Level 1 (Grammar) which consists of 48 lessons about grammar starting from simple examples (present tense verb forms).



Figure 2.1 Basic Lesson on home page of The Speechace application

And next feature is about healthcare, in this feature we are taught to construct a sentence starting from memorizing basic words and pronunciation related to healthcare.



Figure 2.2 Healthcare feature

In this feature, there are five lessons, teach about vocabulary and pronunciation related to healthcare. And then, phrases that form sentences that perfectly relate to the topic of healthcare. In lesson 1 there are 11 sessions ranging from one word to two or three words. And the last lesson of this feature is lesson five where there are 55 sessions that teach phrases and pronunciation so as to form perfect sentences related to this topic.

Then, the next feature is about Hospitality - Vietnam (Vocabulary and Images). Then, Beginner Level feature, Vowels 1 feature (Vowel ɪ and i- Vowel u and u).

Consonants 1 feature (Consonant b and p- Consonant ð and θ). Then, Fluency feature (Practice Speaking - SpeechAce provides narrative questions about “people” and we answer with the provided responses). Fluency Speaking Practice feature (similar to the previous feature but with additional narrative about “sports and travel”). Then, Vowels 2(Vowel əɾ- Vowel au and ou), Consonants 2 (Consonant s and z- Consonant h, w and y), Simple Sentences (Lessons on the use of "a, and, for, big, away, blue, down, can, come, find" up to "the use of we, up, yellow, two, to, see, three, the, where, you"), Basic Sentences (Application of words "be, all, ate, brown, am, but, black, are, came, at" up to "yes, what, with, who, well, will, want, under, went, was, white"), Beginner Sentences, Intermediate Sentences, Citizenship, Poem, Demo All Activity Types. And every feature has diverse lessons as described earlier.

SpeechAce is not only focused on speaking skills, but is also equipped with other supporting features such as listening comprehension exercises and vocabulary building. The listening comprehension feature presents audio material that users must listen to, then answer related questions to measure their level of understanding. Meanwhile, the vocabulary building feature provides various activities and games to enrich users' English vocabulary (Goh & Arjan, 2022). Then, by utilizing AI and ASR technology, SpeechAce is able to provide more accurate and personalized feedback for each user based on analysis of their speech. SpeechAce provides feedback where after completing the given word or sentence, feedback will be provided in the form of scores. Then the incorrect letter or word will be marked in red and SpeechAce will provide feedback on the proper pronunciation.



67% Your pronunciation is off. Select the underlined word(s) to see why you struggled and how to improve.

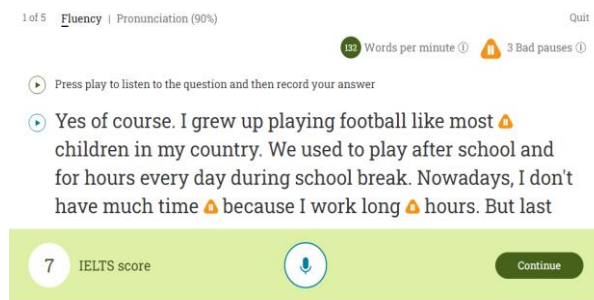


Figure 2.3 Feedback Feature of Spechace application

This feature provides an advantage over conventional learning methods which are usually limited in terms of individual feedback. A study conducted by Lee and Yoon (2022) showed that consistent use of an ASR-based application like SpeechAce for one semester can increase students' pronunciation quality and confidence in speaking English.

Method

This study is a component of quasi-experimental research using a one-group pretest-posttest design. Gay (2012, p. 265) describes this design as a single-group design where participants are given a pretest (O), then get therapy (X), and then endure a posttest (O). The therapy used was the use of the SpeechAce program. The study encompassed three sequential steps undertaken by the researcher while implementing independent variables. These steps included: 1) administering a pretest to assess the dependent variable (variable Y), 2) implementing the independent variable/experimental treatment on the research participants, and 3) conducting a posttest to evaluate the dependent variable (variable X). Following the completion of the three implementation steps, the disparities between the pretest and posttest outcomes were assessed and juxtaposed in the form of scores (Brown, 2019).

The study sample included seventh-grade students from two classrooms at Tunas Karya Junior High School in Batang Kuis, Indonesia. This study used random sampling by means of a lottery to choose the sample. Random sampling is a method of picking a sample where every individual in the specified population has an equal

and independent chance of being chosen (Gay, 2012). Hence, the sample was selected from class 7.1 (experimental group) and 7.2 (control group). The researcher used a speaking exam as the data collection tool. The speaking exam methodology used was an oral presentation. An oral presentation exam is a technique used to assess one's verbal proficiency in a comprehensive and analytical way. This examination included a series of directed inquiries administered by students on a prearranged subject. The researcher used both a pretest and posttest to assess the speaking proficiency of the pupils.

Data collection was conducted by teaching English speaking skills through 4 meeting sessions (teaching procedure method). The material taught included pronunciation, grammar, fluency, content and vocabulary skills. Students' speaking ability was then tested using a pre-test post-test design with treatment and non-treatment groups. Measurement was carried out by using the Speechace application for the pre-test, post-test, treatment group and using conventional/non-digital methods for the pre-test, post-test of the control group. The scores of both groups were then compared. If the treatment group showed improvements compared to the control group, then it could be said that the treatment was valid (McMillan & Schumacher, 2014). The teaching procedures consisted of planned lessons focusing on specific speaking sub-skills (Richards & Rodgers, 2014). Students' speaking abilities were measured before and after the implementation of Speechace treatment using pre-test and post-test methodology. This experimental research design with control-experimental comparison aimed to establish a causal relationship between the independent variable (Speechace use) and dependent variable (speaking skills test scores) (Dörnyei, 2007). By conducting controlled experimentation through quantified pre-post comparisons between groups, this study sought to provide robust evidence for the impact of the Speechace app on developing ESL speaking (Creswell & Creswell, 2018).

In the first meeting, the researcher introduced the SpeechAce application and explained information about speaking in English. Students were given a pre-test in

the form of the topic "healthcare and hospitals". Students were asked to prepare for the topic. The teacher provided a brief training on the speaking aspects that would be assessed, such as pronunciation, grammar, fluency, and content.

Then, students were asked to complete a worksheet containing a list of questions related to the topic. They had to answer the questions based on their knowledge for 2 minutes without using SpeechAce. Their speaking skills, including pronunciation, grammar, fluency, and answer content were assessed using a rubric. The pre-test scores would be compared to the post-test results after students received treatment using the SpeechAce application. The purpose was to quantitatively measure students' baseline speaking abilities in terms of key criteria before the independent variable (SpeechAce use) was introduced, in order to determine its impact on the dependent variable (speaking test performance).

The researcher would do the therapy twice. a) The researcher provided an explanation of the SpeechAce Speak application, followed by presenting several questions from the application. The duration of this therapy was 90 minutes. b) In the second treatment, the researcher would disseminate various questions without using the SpeechAce program (using the standard teaching approach). A post-test is an evaluative measure given to participants in an experiment after the implementation of a therapy. The researcher administered a post-test at the final meeting to assess the enhancement of students' English-speaking proficiency. The post-test is used to assess the degree of achievement in the study completed subsequent to the treatment procedure, in order to determine the participants' knowledge after getting therapy. The questions provided in the post-test are identical to those in the pre-test. The post-test is conducted using the Speechace application itself, employing feedback or evaluation provided by the program. This occurs after the pre-test and treatment phases, both with and without the usage of the application.

This investigation conducted a comparison of student accomplishment at two different points in time: before and after a treatment using SpeechAce, and before and after a control using traditional methods. The purpose was to assess the speaking skills of the students. The researcher will assess the aspects of grammar, content, pronunciation, vocabulary, and fluency. The evaluation rubric chosen from

the Kemendiknas 2013 was analyzed and then classified using the following formula:

$$\text{Student score} = \frac{\text{total correct answer}}{\text{maximum score}} \times 100$$

After determining the learning outcome scores based on these calculations, the next step is to analyze the data. Since this study uses a quasi-experimental pre-test post-test design, the data analysis steps are as follows: descriptive statistic, normality test, sample paired test, homogeneity variance test, and independent sample test.

Result and Discussion

Result

The results and findings of this research pertain to the outcomes of pre-tests and post-tests administered to pupils. Before installing the SpeechAce program, a pre-test was given to students in both the experimental and control classrooms. The purpose of the pre-test was to evaluate the students' speaking abilities using a prepared conversation text. The post-test was conducted after the implementation of the SpeechAce application on the experimental class, with the objective of assessing the extent of progress shown by the experimental class and the impact of the program on students' speaking skills. Student performance was evaluated by pre-tests and post-tests, which assessed their proficiency in vocabulary, grammar, fluency, content, and pronunciation. The data analysis was conducted using the pre-test and post-test findings obtained from both the experimental and control classes. The outcome is as follows:

Descriptive Statistics

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Experiment	25	56	81	69.08	7.000
Post-Test Experiment	25	80	92	85.20	3.594
Pre-Test Control	25	55	84	68.24	7.742
Post-Test Control	25	67	89	77.80	5.212
Valid N (listwise)	25				

The sample size for all variables (N) is 25 respondents, as determined by the descriptive value findings. The Pre-Test experiment yielded a minimum value of 56, a maximum value of 81, a mean value of 69.08, and a standard deviation of 7.000, which indicates the extent to which the data deviates from the average. The Post-Test Experiment yielded a minimum value of 80, a maximum value of 92, a mean value of 85.20, and a standard deviation of 3.594. The Pre-Test Control has a minimum value of 55, a maximum value of 84, and a standard deviation of 7.742. In addition, the Post-test control group has a minimum value of 67, a maximum value of 89, a mean value of 77.80, and a standard deviation of 5.212.

Result of Normality Test

Table 4.2 Tests of Normality

Class	Kolmogorov-Smirnov ^a			Shapiro-Wilk			
	Statistic	df	Sig.	Statistic	df	Sig.	
Student Learning Result	Pre-Test Experiment	.103	25	.200*	.965	25	.515
	Post-Test Experiment	.133	25	.200*	.941	25	.157
	Pre-Test Control	.116	25	.200*	.965	25	.522
	Post-Test Control	.129	25	.200*	.966	25	.548

The normality of the data was evaluated using the Kolmogorov-Smirnov and Shapiro-Wilk tests for both the pre-test and post-test outcomes of both the experimental and control groups. The pre-test experimental data was analyzed using the Kolmogorov-Smirnov test and the Shapiro-Wilk test. The Kolmogorov-Smirnov test provided a statistic of 0.103 (N = 25, p = 0.515), while the Shapiro-Wilk test revealed a statistic of 0.965 (p = 0.515). These results indicate that the data follows a normal distribution. The post-test experimental data had a normal distribution, as shown by a Kolmogorov-Smirnov statistic of 0.133 (N = 25, p = 0.157) and a Shapiro-Wilk test with a p-value greater than 0.05. The pre-test control

data likewise satisfied the normality requirements, as shown by a Kolmogorov-Smirnov statistic of 0.116 (N = 25, p = 0.522) and a Shapiro-Wilk test with a p-value greater than 0.05. The post-test control data were found to be normally distributed, as shown by a Kolmogorov-Smirnov statistic of 0.129 (N = 25, p = 0.548) and a Shapiro-Wilk test with a p-value greater than 0.05. All p-values were greater than the significance threshold of 0.05, indicating that the data followed a normal distribution in all groups and tests.

Results of Paired Samples Test

Table 4.3 Paired Samples Test

		Paired Differences			95% Confidence Interval of the Difference			t	df	Significance	
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	One-Sided p			Two-Sided p	
Pair 1	Experimental Class	-16.120	8.253	1.651	-19.527	-12.713	-9.766	24	<.001	<.001	
Pair 2	Control Class	-9.560	5.650	1.130	-11.892	-7.228	-8.460	24	<.001	<.001	

The paired samples test verified substantial enhancements in both the experimental and control groups from the pre-test to the post-test, thereby confirming the efficacy of the treatments. The experimental group showed a mean difference of -16.120 (SD = 8.253, SE = 1.651) between their pre-test and post-test scores. The 95% confidence interval for this difference ranged from -19.527 to -12.713. The t-statistic had a value of -9.766 with 24 degrees of freedom, and the outcome was statistically significant (p < 0.001). This signifies a significant increase in scores for the experimental group. In the control group, the average difference was -9.560 (standard deviation = 5.650, standard error = 1.130), and the 95% confidence interval ranged from -11.892 to -7.228. The t-statistic was -8.460 with 24 degrees of freedom, and this result was statistically significant (p < 0.001), showing a substantial improvement in scores for the control group as well.

Result the Test of Homogeneity of Variance

Table 4.5 Test of Homogeneity of Variance

			Levene			
			Statistic	df1	df2	Sig.
Students Learning Result	Based on	Mean	1.206	1	48	.278
		Median	1.192	1	48	.280
		Median and with adjusted df	1.192	1	38.460	.282
		trimmed mean	1.212	1	48	.276

From result table above, the Levene Statistic based on the mean is 1.206, based on the median is 1.192, based on the median with adjusted degrees of freedom is 1.192, and based on the trimmed mean is 1.212. The degrees of freedom (df1) for all tests are 1, indicating the number of groups minus one, while df2 is 48, representing the total sample size minus the number of groups. The significance values (Sig.) for these tests are .278, .280, .282, and .276 respectively. A significance > 0.05 suggests that the null hypothesis, which states that the variances are equal, cannot be rejected. In this case, all significance values are above 0.05, indicating no significant difference in variances between the groups, thus confirming that the variances are homogeneous.

Result of Independent Samples Test

Independent Samples Test											
Levene's Test for Equality of Variances				t-test for Equality of Means						95% Confidence Interval of the Difference	
	F	Sig.	t	df	Significance On e-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper	
Students Learning Result	1.206	.278	5.8	48	.00	<.001	7.400	1.266	4.854	9.946	
			5.8	42.6	.00	<.001	7.400	1.266	4.846	9.954	

The SPSS output for Levene's Test for Equality of Variances provides the following results: The value of Levene's Statistic is 1.206, with 1 degree of freedom for the numerator and 48 degrees of freedom for the denominator. The significance level is 0.278. Given that the significance level is greater than 0.05, we fail to reject the null hypothesis that the variances are identical. Hence, the premise of equal

variances is met. The t-test findings suggest a significant difference between the experimental group (M = 78.48, SD = 5.139) and the control group (M = 70.00, SD = 5.015): $t(48) = 6.210, p < 0.001$. The average disparity between the groups was 8.480, with a 95% confidence range spanning from 5.733 to 11.227. This substantial disparity indicates that the intervention had a beneficial effect on the experimental group in comparison to the control group.

The Speechache application can help improve users' speaking ability through several available features. One of the most useful features is the instant feedback feature. This feature will provide notifications if there are errors in pronouncing a word. Pronunciation errors will be marked in red and the AI from the application will provide guidance on the correct pronunciation in writing. In addition, in paid mode, this feature can also function as pronunciation tutoring by providing directions via AI voice. The goal is to help users improve pronunciation with direct guidance. The application also provides scores as a performance measure and pronunciation assessments similar to IELTS as shown in Figures 2.5 and 2.6. With the instant feedback feature and virtual pronunciation tutor assistance, SpeechAche can indirectly act as a companion in the process of learning a foreign language. Users can easily correct pronunciation errors through real-time guidance provided by the application. This is expected to improve users' speaking ability (Wijaya, 2023).

Furthermore, the picture feature, pictures or visuals tend to be easier to remember and understand the meaning of something. Speechace has pictures in pronouncing some vocabulary so it will be easier to memorize and remember vocabulary, the more vocabulary obtained and remembered can improve speaking ability and confidence in speaking.



Figure 2.4 Speechace feature vocabulary with picture

In enhancing students' speaking skills, the researcher utilized the SpeechAce application, focusing on its speech recognition and feedback features to help students articulate thoughts effectively, as shown in Figure 2.1. Speaking is crucial for expressing feelings and thoughts, playing a vital role in daily communication and language learning. This study aimed to evaluate SpeechAce's effectiveness in improving students' speaking abilities.

Data analysis revealed significant improvement in students' speaking skills using SpeechAce, as seen in Table independent sample test. The application provided immediate feedback on pronunciation, vocabulary, grammar, fluency, and overall content delivery, facilitating rapid progress in speaking proficiency, illustrated in Figures 2.3. Students in the experimental group using SpeechAce showed greater improvement compared to the control group. Their mean scores significantly increased from pre-test to post-test, highlighting the application's positive impact on speaking abilities.

SpeechAce's interactive features, including speech recognition and detailed feedback, motivated active student participation. Continuous practice and constructive feedback enhanced students' confidence and competence in spoken English. This study aligns with Lesmana's (2022) findings using ELSA to enhance speaking skills, with SpeechAce offering more detailed and real-time feedback, proving effective in improving students' speaking proficiency. In addition to ASR (Automatic Speech Recognition) which can help improve speaking skills, a study by Auliya et al. (2021) explored the utilization of Mobile Assisted Language Learning (MALL) platforms among first and second-year student teachers to enhance their reading abilities. Through qualitative research methods such as interviews and focus group discussions, the researchers examined the extensive use of various MALL applications including Wattpad, social media, Duolingo, U-Dictionary, and Quora by the students to improve their vocabulary, grammar, reading speed, and comprehension.

The findings from this study revealed that the students frequently used these MALL platforms for autonomous learning activities such as practicing pronunciation of new words, looking up meanings of unfamiliar terms, reading English literature and articles, and answering questions to check their understanding. The research

also highlighted the effectiveness of such MALL applications in developing independent learning habits and enhancing various reading skills among the EFL (English as a Foreign Language) students over time. This underscores the potential of technology-integrated language learning in fostering self-directed learning and improving reading proficiency among learner populations. In a related vein, Shortt et al. (2023) conducted a systematic review focusing on Duolingo as a representative of gamified MALL tools, aiming to understand current trends and challenges in the field. Their research approach involved exploring major databases and narrowing down an initial pool of papers through inclusion/exclusion criteria. Through qualitative coding, they found that research from 2012 to 2020 primarily focused on design aspects and employed quantitative methodologies, often utilizing English as the primary language. Their study emphasizes the need to shift focus towards language learning processes and outcomes, highlighting the importance of integrating social interaction elements beyond app design in MALL research.

Overall, SpeechAce proved effective in enhancing students' speaking skills, providing immediate and detailed feedback crucial for rapid improvement in language learning. The present our study underscores technology-based interventions' potential in language education and suggests exploring similar applications for other language skills.

Conclusion

Based on our study, the Speechace application has demonstrated its effectiveness to improve English speaking skills among junior high school students in Tunas Karya Batang Kuis. The study found that the experimental group, which used the Speechace application, showed significant improvement in speaking abilities compared to the control group. The average N-Gain score for the experimental class was 49.2325%, indicating a moderate to high improvement in learning outcomes. This improvement ranging, from 10% to 74.36%, suggests that most students benefited significantly from the intervention. The t-test results further support this finding, with a significant difference between the post-test

scores of the experimental and control groups ($t(48) = 6.210, p < 0.001$), confirming the hypothesis that the Speechace application effectively enhances students' English-speaking skills. Despite some challenges, such as internet connectivity issues and occasional inaccuracies in ASR feedback, the integration of ASR technology through Speechace provided an engaging and interactive platform for students.

This present study advocates for incorporating technology in language education to create a more interactive and effective learning environment. Future research should continue exploring the long-term effects of such interventions and address any technological limitations to enhance the learning experience for students. For practical suggestions, teachers and students should combine the use of applications like Speechace with more traditional classroom activities. This hybrid approach allows them to benefit from the individual feedback and practice available on apps, while still emphasizing interpersonal communication skills developed through direct interaction.

References

- Al-Dousari, S., & Alkhezzi, F. (2016). The effectiveness of using vocabulary mobile applications (Apps) on improving students' vocabulary achievement and retention. *International Journal of Applied Linguistics & English Literature*, 5(6), 154-164.
- Anggraini, D., Santosa, D., & Pambudi, Y. (2023). Enhancing EFL students' speaking ability through Hello English application. *Journal of English Education*, 6(1), 47-58.
- Auliya, S., Sulistiyowati, D., Nurohmah, N. S., & Rusyana, H. (2021). EFL student teachers' use of Mobile-Assisted Language Learning (MALL) platforms to enhance their reading skills. *International Journal of Information and Education Technology*, 11(8), 490-494.
- Azzuhra, M. S., & Amri, M. (2023). The effect of Cake application on EFL students' speaking skill improvement. *Inquisitive: Journal of English Language Teaching*, 4(1), 1-9.
- Brooks, F. B. & Montanez, A. (2006). Improved annotations for the Massachusetts roads dataset. In J. G. Carbonell & J. Goldsmith (Eds.), *Proceedings of the 21st national conference on Artificial intelligence - Volume 1* (pp. 959-964). Menlo Park, CA; Cambridge, MA; London; AAAI Press; MIT Press.
- Brown, G., & Yule, G. (1983). *Teaching the spoken language: An approach based on the analysis of conversational English*. New York: Cambridge University Press.
- Celce-Murcia, M., Brinton, D. M., & Goodwin, J. M. (1996). *Teaching pronunciation: A reference for teachers of English to speakers of other languages*. Cambridge: Cambridge University Press.

- Chen, H. C. (2016). A study of EFL learners' perceptions of an ASR-based speaking practice website. *Computer Assisted Language Learning*, 29(4), 703-720.
- Chevalier, F. (2007). Saybot: An automatic speech recognition based CALL system for pronunciation teaching. *Computer Assisted Language Learning*, 20(5), 433-449.
- Crystal, D. (2012). English as a global language. *Cambridge University Press*.
- Cucchiari, C., Neri, A., & Strik, H. (2009). Oral proficiency training in Dutch L2: The contribution of ASR-based corrective feedback. *Speech Communication*, 51(10), 853-863.
- Cucchiari, C., Strik, H., & Boves, L. (2002). Quantitative assessment of second language learners' fluency: Comparisons between read and spontaneous speech. *Journal of the Acoustical Society of America*, 111(6), 2862-2873.
- Davies, A. (2000). A self-access system and the recognition of foreign language units acquired outside formal instruction. *System*, 28(3), 341-355.
- Derakhshan, A., Khalili, A. N., & Beheshti, F. (2016). Developing EFL learner's speaking ability, accuracy and fluency. *English Language and Literature Studies*, 6(2), 177-186.
- Drayton, B. (2010). What's next after Web 2.0? Web 3.0 innovations for learning. *The thinking staged*. Retrieved from <http://www.thethinkingstaged.com/learning/what-s-next-afterweb-20-web-3-0-innovations-for-learning>.
- Ermawati, E., Nurchalis, N. F., & Sardi, A. (2021). Online efl teaching and learning: Different skills, different challenges. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 9(1).
- Eriyanti, T., Setyosari, P., & Handayani, N. (2020). The use of technology in English language teaching and learning. *J-SHMIC*, 5(2), 189-201.
- Eskenazi, M., Leacock, C., Velasco, M., Franco, H., Gupta, N., Black, R. W., Das, D., Rutter, N., & Smith, S. (2007). Developing speech and language technologies for digital inclusion. *Proceedings of the First International Workshop on Sociophonetics*. Retrieved from
- Fadilla, D. (2019). Teaching English pronunciation to Indonesian EFL students: Possible challenges and solutions. *Journal of English Language Teaching and Linguistics*, 4(3), 415-424. <https://doi.org/10.21462/jeltl.v4i3.249>
- Goh, C. C. M., & Arjan, A. (2022). SpeechAce: An AI-powered app for improving English speaking skills. *Language Learning & Technology*, 26(2), 43-61.
- Hafifah. (2020). The effectiveness of Duolingo in improving students' speaking skill at Madrasah Aliyah Bilingual Batu School Year 2019/2020. [Unpublished master's thesis]. *English Education Department, Postgraduate Program, Islamic University of Malang*.
- Harmer, J. (2007). The practice of English language teaching (4thed.). *Essex, England: Pearson Education Limited*.
- Hedge, T. (2000). Teaching and learning in the language classroom. *Oxford: Oxford University Press*.
- Hughes, R. (2002). Teaching and researching speaking. *Harlow, England: Pearson Education Limited*.

- Hughes, R. (2002). Teaching and researching speaking. *Pearson Education*.
- Karim, A., Helwani, S. N., Aziz, Z., Ramli, N. I., Ghazali, A. B. A., & Yasin, M. S. M. (2023). Impact of utilizing ELSA Speak application on EFL students' speaking performance, perceptions, and inhibiting factors. *International Journal of Instruction*, 16(1), 523-538
- Kirkgöz, Y. (2017). A blended learning study on implementing video recorded speaking tasks in task-based classroom instruction. *International Journal of Higher Education*, 6(4), 1-14.
- Lee, S. H., & Yoon, K. S. (2022). The effects of AI-based pronunciation training on EFL learners' speaking skills. *TESOL Quarterly*, 56(1), 145-173.
- Lesmana, N. (2022). Efficacy of ELSA speak application in enhancing EFL students' speaking skill: A quasi-experimental study. *Journal of English Educators Society*, 7(2), 201-210.
- Levene, H. (1960). "Robust tests for equality of variances". In Contributions to Probability and Statistics: Essays in Honor of Harold Hotelling, ed. I. Olkin. Stanford University Press.
- Littlewood, W. (2007). Communicative and task-based language teaching in East Asian classrooms. *Language Teaching*, 40(03), 243-249.
- Lubis, S. F., & Siregar, H. (2021). The effects of debate technique on improving EFL students' speaking skills: An action research. *Indonesian EFL Journal*, 7(1), 79-87.
- McAndrews, M. (2020). The effect of automated speech recognition on learners' pronunciation in English as a foreign language settings. *ReCALL*, 32(1), 3-19.
- Mitchell Shortt, C., Westbrook, N., & Brunfaut, T. (2023). A systematic review of research trends in gamified Mobile-Assisted Language Learning (MALL): Focusing on Duolingo as an exemplar app. *Computer Assisted Language Learning*, 36(1-2), 141-169
- Morton, J., & Jack, M. A. (2010). Speech technology in language learning: An overview. In Neri, A., Cucchiarini, C. & Strik, H. (Eds.), *Handbook of Technology in Second Language Teaching and Learning* (pp. 13-32). *Routledge*.
- Munro, M. J., & Derwing, T. M. (2011). The foundations of accent and intelligibility in pronunciation research. *Language Teaching*, 44(3), 316-327.
- Nasriandi, N., & Masruddin, M. (2021). The Use of British Parliamentary Debate Style in Teaching Speaking Skill. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 9(1).
- Neri, A., Cucchiarini, C., Strik, H., & Boves, L. (2002). The pedagogy-technology interface in computer assisted pronunciation training. *Computer Assisted Language Learning*, 15(5), 441-467.
- Novo Learning Research Report. (2019). Artificial intelligence progress and implications for education. Retrieved from <https://novoed.com/wp-content/uploads/2019/09/AI-Progress-and-Implications-for-Education.pdf>
- Nunan, D. (1995). Teaching grammar in context. *ELT journal*, 49(2), 128.
- Nunan, D. (2003). Practical English language teaching. *McGraw-Hill*.
- Nunan, D. (2003). The impact of English as a global language on educational policies and practices in the Asia-Pacific region. *TESOL quarterly*, 37(4), 589-613. <https://doi.org/10.2307/3588214>
- Pallant, J. (2020). SPSS Survival Manual: A Step by Step Guide to Data Analysis using

Arry Pauji Harahap, Ahmad Amin Dalimunthe
*Improving Junior High School Students English Speaking Skills Using the
Speechace Application*

IBM SPSS. Routledge.

- SpeechAce. (2020). SpeechAce: AI-powered English speaking practice [Mobile app].
- Sun, Y. C., & Yang, F. Y. (2015). I help, therefore, I learn: service learning on Web 2.0 in an EFL speaking class. *Computer Assisted Language Learning*, 28(3), 202-219.
- Supriyanti, N., & Rojas, E. M. (2018). Improving students' English speaking competence using storytelling (Study in Pangeran Diponegoro Islamic College–Nganjuk, East Java). *Premise: Journal of English Education*, 7(1), 64-82.
- Tuan, N. H., & Mai, T. N. (2015). Factors affecting students' speaking performance at LE Thanh Hien high school. *Asian Journal of Educational Research*, 3(2), 8-23.
- Zou, B., & Li, J. (2015). Exploring mobile apps for English language teaching and learning. In *Critical CALL–Proceedings of the 2015 EUROCALL Conference, Padova, Italy* (pp. 564-568). *Research-publishing.net*.