



Implementation of Interactive Artificial Intelligence Voice in Speech Shadowing Method to Improve English Speaking Ability in High School Students: Strategy Analysis and Challenges

Purwo Haryono

Universitas Widya Dharma Klaten

E-mail: pwharyonojournal@gmail.com

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Abstract

This study aims to analyze the implementation of Interactive Artificial Intelligence (AI) Voice in the Speech Shadowing method to improve English speaking skills in high school students. The main objectives of this study are to identify implementation strategies, challenges faced, and the effectiveness of using AI Voice in learning to speak English. The method used in this study is a qualitative approach with a multi-site case study type, which was carried out in two A-accredited private schools in Malang City. Data were collected through interviews, observations, and documentation involving teachers and students as key informants. The data analysis technique used is the interactive model of Miles, Huberman, and Saldana, which allows researchers to categorize, organize, and draw conclusions from the data obtained. The results of the study indicate that the integration of AI Voice in the Speech Shadowing method can increase the interactivity of learning and provide direct feedback that accelerates students' mastery of speaking skills. The use of AI Voice allows students to practice with native speakers virtually, which is very effective in improving pronunciation, intonation, and fluency. However, the challenges faced in implementing this technology include limited device infrastructure, curriculum readiness, and student acceptance of new technology. However, overall, the integration of AI Voice has been shown to have a positive impact on improving students' speaking skills. Based on these findings, it is recommended that schools explore the use of technology in language learning in more depth, by providing training to teachers and ensuring the availability of adequate devices. Further research is also needed

to examine the potential and challenges of implementing AI Voice in various educational contexts, in order to improve the quality of English learning at a broader level.

Keywords: *Artificial Intelligence, Speech Shadowing, Speaking Ability*

Introduction

English speaking ability is a very important skill in today's era of globalization, where English functions as an international language that connects various individuals and cultures around the world. As a global lingua franca, English proficiency allows individuals to access information, communicate with various parties from different backgrounds, and open up opportunities to participate in international discussions (Reynolds & Yu, 2020). In a professional context, English speaking ability is the main key in an increasingly globalized world of work, because many multinational companies or global institutions use English as their main language of communication.

Therefore, English speaking skills, especially in terms of fluency and clarity of pronunciation, are needed by professionals to interact effectively in meetings, presentations, or even in business relations between countries (Akongoh, 2021). However, improving English speaking skills among high school students presents various challenges, such as students' discomfort in public speaking, anxiety in speaking in a foreign language, and limited direct practice in a learning environment that often focuses on aspects of grammar or written skills (Hoshina et al., 2022).

In addition, limited access to interactive and effective language learning resources is also a barrier, considering the importance of methods that can provide direct and timely feedback so that students can continue to develop in their speaking skills (Othman & Chuah, 2021).

One of the interactive learning methods to improve speaking skills is Speech Shadowing. The Speech Shadowing speaking learning method is an effective technique in developing speaking skills in a foreign language, especially English. Speech Shadowing involves students in imitating or repeating quickly what is said by a native speaker of the target language, either in the form of sentences, phrases, or words per word (Zia & Karnawati, 2022; Jin, 2023). The goal is to improve pronunciation, intonation, and fluency of speech, as well as help students improve their understanding of the rhythm and nuances of the language.

The definition and basic concept of Speech Shadowing is that students follow and imitate native speech with high intensity, focusing attention on every detail of the pronunciation and sentence structure used by native speakers (Hamada, 2018; Hamada, 2015). The main advantage of the Speech Shadowing method lies in its

ability to significantly improve students' pronunciation and intonation in a short time. This method also supports the development of sharper listening skills, because students are used to hearing the right speech and immediately imitating it. In addition, Speech Shadowing can increase students' confidence in speaking because they get the opportunity to practice repetitively without the direct pressure of social interaction (Foote & McDonough, 2017).

In the context of English teaching, the application of Speech Shadowing can be done in various ways, such as using audio or video recordings from native speakers, as well as providing materials that are relevant to the learning topic. By using the latest technology, students can access various learning resources independently and can practice their speaking skills at any time (Jin, 2023).

Along with the development of technology, language learning, especially English, has undergone a significant transformation. Technology now plays an important role in language education by providing various platforms and tools that can facilitate the teaching and learning process. In this case, the use of technology such as Artificial Intelligence (AI) is increasingly widespread to support more interactive and personalized learning methods. AI enables the delivery of more adaptive language learning materials, where this technology can be adjusted to the needs and abilities of students, provide real-time feedback, and provide opportunities for students to practice anytime and anywhere (Wang, 2023; Chisega-Negrilă, 2023).

One form of technology that is increasingly popular in language learning is Interactive AI Voice, which utilizes artificial intelligence to imitate pronunciation, intonation, and rhythm of speech more naturally and accurately. By using AI Voice, students can practice speaking with native English speakers through direct interaction and receive automatic corrections. The main advantage of using AI in English learning is its ability to provide a more dynamic and personalized learning experience, increase student engagement, and allow them to practice independently without time constraints.

This technology, which was previously limited to the use of computers or mobile devices, now provides opportunities for students to learn more efficiently and effectively, in line with the importance of mastering English-speaking skills as explained in the previous section (Rusmiyanto et al., 2023; AbuSahyon, 2023).

The integration of AI Voice in the Speech Shadowing method offers great potential to improve the effectiveness of English learning in high schools. The use of AI in this context allows speaking learning to be more interactive and responsive. With AI Voice, students not only listen to and imitate the pronunciation of native speakers, but also get instant feedback that helps them correct mistakes in pronunciation, intonation, or rhythm of speech. This is very important because it gives students the opportunity to continue learning independently, correcting mistakes in real-time without having to rely entirely on the instructor (Liu, 2023).

AI also allows for personalization in learning, where students can practice according to their ability level and repeat the material as needed. In addition, the integration of AI Voice is very suitable for the English learning curriculum in high schools, where mastery of speaking skills is one of the main focuses in developing language competence (Ezzaim, 2023; Amin, 2023). By combining Speech Shadowing and AI, speaking learning becomes more structured, effective, and sustainable, where students can practice anytime and get faster and more accurate results (Popenici & Kerr, 2017). The use of this technology is very relevant in supporting more dynamic and adaptive learning, which is increasingly necessary to address the challenges in improving English speaking skills that have been discussed previously.

While the integration of AI Voice in Speech Shadowing offers great potential to improve students' speaking skills, its implementation is not without challenges. One of the main challenges is related to accessibility and availability of devices. Not all schools, especially in resource-constrained areas, have adequate devices to support this technology, which can hinder the widespread use of AI. Furthermore, the implementation of AI Voice in learning requires intensive training for teachers to ensure they can utilize this technology effectively (Zulkarnain & Yunus, 2023; Chouhan, 2023).

This also relates to curriculum challenges, where not all high school English curricula are ready or able to accommodate the use of advanced technologies such as AI. Furthermore, although many students are open to the use of technology, their acceptance of AI in learning can vary (Kim & Kim, 2022; Batanero et al., 2021). Some students may feel awkward or uncomfortable interacting with technology, which can affect their motivation and engagement in learning. Other issues arise in speech processing and the accuracy of feedback provided by AI. AI that cannot handle the nuances of pronunciation or certain accents may provide feedback that is not entirely accurate, which may affect its effectiveness in improving students' speaking skills (Avcı et al., 2019).

However, despite the challenges, the implementation of AI Voice in Speech Shadowing also brings various hopes and potential benefits. One of the main hopes is the improvement of students' English-speaking skills, because this technology allows for more personalized learning, focusing on improving pronunciation and intonation directly (Batanero et al., 2021). With AI, English learning can be more interactive and interesting, encouraging students to participate more actively in class without fear or anxiety, especially in the context of speaking which is often a major challenge for many students (Park, 2023).

In addition, AI can expand access to quality English learning, because students can practice anytime and anywhere, overcoming the time and space constraints usually faced in traditional learning. Another potential benefit is improving the quality of learning for all students, including those in remote areas, by providing access to advanced learning tools that may have previously been unavailable (Zulkarnain & Yunus, 2023; Lawrence, 2023). By addressing these challenges, the use of AI Voice in Speech Shadowing has the potential to enrich the English language learning experience, providing a more inclusive and effective solution in language education.

Literature Review

Use of Technology in English Learning

English speaking skills play a very important role in overall language competence. Speaking skills not only include the ability to pronounce words correctly, but also involve mastery of other aspects such as intonation, pronunciation, and understanding the social context in communication (Putra, 2023). At the secondary school level, the main challenge in developing English speaking skills is the lack of opportunities for students to practice speaking in real and contextual ways. Often, students are only exposed to learning materials that are more focused on reading and writing skills (Chouhan, 2023; Ghorashi, 2023).

In fact, good speaking skills are very important to support academic achievement, especially in oral exams, as well as students' readiness to face the professional world which increasingly prioritizes the ability to communicate effectively in an international language. Good oral skills can improve students' ability to interact more confidently and competently, both in academic environments and in the workplace in the future. (Anwar, 2023).

Given the importance of speaking skills, the English curriculum in senior high schools (SMA) must accommodate the need to develop these skills effectively. However, the challenges faced by many schools are limited time and resources to implement effective learning methods (Zulkarnain & Yunus, 2023; Chouhan, 2023). Interaction-based learning and direct practice are needed to improve students' speaking skills, but traditional methods that emphasize memorization and written tests are often insufficient to create an authentic speaking experience (Kim & Kim, 2022).

Therefore, methods such as Speech Shadowing, which emphasizes imitating the pronunciation and intonation of native speakers, are a very valuable alternative in English learning. This method allows students to practice speaking in a more active and interactive way, which is essential to meet the needs of more dynamic and effective English learning in SMA. By integrating a more practical approach, students can experience a more enjoyable learning experience and be directly involved in more contextual and applicable speaking skills learning (Avcı et al.,

2019; Williams et al., 2022).

Speech Shadowing Method in Language Learning

Speech Shadowing is a language learning technique that involves direct imitation of a conversation or speech spoken by a native speaker. Students listen to audio or video and imitate the pronunciation, intonation, and rhythm of speech in real time, as if they were saying the words out loud. themselves (Adank et al., 2010). The main principle of this method is continuity and speed in imitation, which allows students to improve their speaking, listening, and language fluency skills (Cracco et al., 2018). With By imitating the way native speakers speak, students not only learn proper pronunciation but also how to use appropriate intonation and expressions in real conversational contexts (Wilt et al., 2022).

The main advantage of the Speech Shadowing method lies in its ability to improve speaking skills in a more natural and contextual way. By interacting directly with a native speaker model, students can quickly correct pronunciation errors and develop speaking fluency (Wu et al., 2019, Rossiter et al., 2010). In addition, this method also improves students' listening skills, which in turn helps them better understand the nuances and structures of language. The application of this method in English learning can be done by selecting various audio or video materials, such as everyday conversations, speeches, or interviews, which allow students to practice in a more authentic and relevant context (Wang et al., 2021; Mantell & Pfordresher, 2013).

Method

Research Approaches and Types

This study uses a qualitative approach to explore the implementation of Interactive Artificial Intelligence Voice in the Speech Shadowing method in improving English speaking skills in high school students. The type of research used in this study is a multi-site case study, conducted in two A-accredited private schools in Malang City. The selection of the two schools was carried out by considering their characteristics which already have good quality education and facilities that support the implementation of technology in the learning process.

Research in these two schools will provide broader insights into the differences and similarities in the implementation of the Speech Shadowing method assisted by Interactive AI Voice, as well as the challenges faced in different but similar contexts, considering social, cultural, and academic factors in each school. Data obtained from both sites will be analyzed comparatively to gain a more comprehensive understanding.

Method of collecting data

The data collection method in this study used three main techniques, namely interviews, observations, and documentation. Interviews were conducted with the aim of digging up in-depth information from teachers and students related to their experiences in using Interactive Artificial Intelligence Voice in the Speech Shadowing method. These interviews were semi-structured, allowing researchers to obtain more open and in-depth answers regarding the perceptions, challenges, and benefits felt by the two groups of informants. Observations were conducted during the learning process to monitor the implementation of the methods and technologies directly, as well as the interactions between students and teachers.

Meanwhile, documentation was used to collect related materials, such as curriculum, lesson plans, and activity notes related to the implementation of technology in the classroom.

Research Informants and Informant Determination Techniques

The informants in this study consisted of two main groups, namely teachers and students involved in English learning using Interactive AI Voice and the Speech Shadowing method. The selection of informants was carried out using a purposive sampling technique, namely by selecting individuals who have experience or direct involvement in this learning process. Teachers were selected based on the criteria of those who teach English at the high school level and have used or are involved in the use of AI technology in teaching.

The selected students were those who took English classes that implemented the Speech Shadowing method with the help of AI, and who were willing to share their experiences during the learning process.

Data Analysis Techniques

Data analysis in this study used an interactive model developed by Miles, Huberman, and Saldana. The analysis process was carried out iteratively and continuously throughout the study. The first step is data collection through interviews, observations, and documentation, then the data is analyzed through the data reduction stage to identify important themes that emerge. After that, the data is presented in narrative or table form to facilitate understanding. The next process is drawing conclusions, which is carried out continuously and strengthened by the validity of data triangulation from various sources (interviews, observations, and documentation).

Through this technique, researchers can explore the meaning and patterns that emerge from the data, as well as understand more deeply about the implementation and challenges of using AI Voice in the Speech Shadowing method in English learning.

Results

Implementation of AI Voice Implementation Strategy in Speech Shadowing

The implementation of Interactive Artificial Intelligence Voice in the Speech Shadowing method is an innovative approach that aims to improve English speaking skills in high school students. In this study, various strategies for implementing AI Voice technology were applied to facilitate more effective and interactive speaking learning. The following table presents the various strategies used in implementing AI Voice, complete with perspectives from teachers and students regarding its effectiveness.

Table 1. Implementation of AI Voice Implementation Strategy in Speech Shadowing

No	Strategy	Strategy Description	Informant Interview Results	
			Informant (Teacher)	Informant (Student)
1	Using the AI Voice Application for Pronunciation Practice	Teachers use the AI Voice app to train students to pronounce English sentences and phrases more accurately through real-time feedback from AI.	Assessing AI applications as effective tools in teaching.	Feel more confident because you get direct feedback from AI.
2	Implementation of Speech Shadowing Method with AI Voice as a Companion	Students listen and imitate the pronunciation of the AI, following the rhythm and intonation in the English sentences.	The teacher provides instructions on how to use technology correctly.	Students feel helped by the AI voice guiding them.
3	Instant Feedback from AI Voice for Speaking Skill Improvement	After students shadow, the AI provides instant feedback on pronunciation errors and provides automatic corrections.	Teachers integrate feedback from AI into the student evaluation process.	Instant feedback lets me quickly spot mistakes and fix them.

4	Setting the Difficulty Level of Exercises Based on Student Ability	AI can adjust the difficulty level of speaking exercises based on the student's progress, providing more complex exercises as skills improve.	Teachers direct the use of this feature to optimize individual learning.	This feature helps me learn at a pace that suits my abilities.
5	Using AI Voice to Improve Natural Intonation and Pronunciation	Students are instructed to imitate the AI's natural pronunciation to improve speech fluency and voice clarity.	Teachers use this feature for natural conversation practice in English.	I feel more confident in speaking because the AI voice is so natural.
6	Combination with Collaborative Learning and AI Voice	This method combines Speech Shadowing with collaboration-based learning, where students work in small groups and use AI Voice as a guide.	Teachers organize group sessions that use AI to learn together.	Students feel more motivated when learning in groups, with the help of AI as a tool.
7	Integration with Project-Based Learning	AI Voice is used to support students in speaking projects, where they conduct presentations or speaking discussions on a specific topic guided by AI.	Teachers facilitate project-based learning with the help of AI to improve the quality of student presentations.	This project made me more excited because AI helped me prepare the presentation better.

The table above illustrates the various strategies used in the implementation of AI Voice in the Speech Shadowing method, which include the use of technology for pronunciation practice, providing instant feedback, adjusting the level of difficulty, and integration with other learning methods such as collaborative and project-based. Based on data from informants, the use of AI Voice allows students

to obtain direct feedback that helps them correct pronunciation errors, improve intonation, and practice speaking fluency.

In addition, the combination with collaborative and project-based learning methods provides a more comprehensive learning experience, where students can practice in groups and work on speaking projects supported by AI, thereby increasing their motivation and engagement in learning English.

Challenges in Using AI Voice for English Learning in High School

The use of AI Voice in English learning in high school offers a lot of potential, but it is not without a number of challenges faced by teachers and students. In this study, the challenges that arise in the implementation of this technology have been identified to provide a clearer picture of the obstacles that need to be overcome. The following table presents the challenges faced in the use of AI Voice for English learning at the high school level, with information obtained from interviews with teachers and students.

Table 2. Challenges in Using AI Voice for English Learning in High School

No	Challenges in Using AI Voice	Challenge Description	Informant (Teacher)	Informant (Student)
1	Limited Access to Technology and Infrastructure	Some schools experience obstacles in providing adequate hardware and internet connections to run the AI Voice application optimally.	Teachers revealed that not all students have adequate access to use AI Voice.	Some students complained about slow internet connections and lack of devices for access.
2	Challenges in Adapting Curriculum to Technology	Adapting the English learning curriculum with the integration of AI Voice technology requires time and adjustments to new teaching	Teachers find it difficult to design learning that integrates this new technology.	Students felt that the learning material was somewhat hampered at first due to the curriculum changes.

		methods for teachers.		
3	Problems in Using Accurate Feedback Features	AI Voice provides feedback that is sometimes imprecise or out of context with what the student is saying, which can lead to confusion for students.	Teachers noticed inaccuracies in AI feedback that sometimes did not help students well.	Students get frustrated when AI gives feedback that doesn't match their pronunciation.
4	Student Resistance to New Technologies	Some students are less accustomed or hesitant to use new technologies such as AI Voice, so their application is less than optimal in the learning process.	The teacher observed that some students initially showed discomfort in using AI Voice.	There are students who feel awkward or embarrassed using AI Voice in front of the class.
5	Lack of Students' Digital Skills	Some students do not have adequate digital skills to make optimal use of AI Voice applications, affecting the effectiveness of learning.	Teachers noted that some students needed further training on using the application.	I found it difficult to use some of the app's features due to my lack of digital skills.
6	Limited Use for All Aspects of Language Skills	AI Voice focuses more on pronunciation, but is less able to train other skills such as writing and listening, so only some aspects of the	Teachers revealed that the use of AI Voice is still limited to developing speaking skills	AI Voice helps with speaking, but I feel like I need more listening and writing practice.

		language can be improved.	only.	
7	Limited Time for Using Technology in the Classroom	Limited learning time hinders the optimal use of AI Voice technology, as not all class time can be allocated to speaking practice using AI.	Teachers have difficulty dividing their time between traditional teaching and the use of AI Voice technology.	Practice time with AI Voice is limited due to the large amount of other material that needs to be learned.

The table above reveals a number of challenges faced in implementing AI Voice for English learning, both in terms of technical aspects, curriculum, and adaptation of its use. Limited access to adequate technological devices and stable internet connections are the main obstacles experienced by schools and students. In addition, curriculum adjustments and accurate use of AI Voice are additional challenges for teachers.

Some students also show resistance to the use of new technology, and some find it difficult to use the application due to a lack of digital skills. However, although AI Voice is very useful for practicing pronunciation, there are still limitations in covering all aspects of language skills, such as listening and writing. All of these challenges need to be overcome so that technology can be applied more effectively in supporting English learning in high schools. Evaluation of the Effectiveness of Using AI Voice in Improving Students' Speaking Skills

Evaluating the effectiveness of using AI Voice in improving students' speaking ability is an important aspect to understand the extent to which this technology can contribute to English learning at the high school level. The following table presents various aspects of the evaluation involving the improvement of pronunciation skills, confidence, intonation, and student engagement in speaking learning. The data presented based on interviews with teachers and students provides a comprehensive picture of the impact of AI Voice on the learning process.

Table 3. Benefits of the Agro-Eco-Edu-Tourism Program in the Teaching Factory (TeFa) student speaking, in accordance with the third research objective:

No	Evaluation Aspects of the Effectiveness of Using AI Voice	Evaluation Description	Informant (Teacher)	Informant (Student)
1	Pronunciation Skills Improvement	The use of AI Voice helps students improve their pronunciation of English words and sentences through feedback provided by technology directly and accurately.	Teachers observed that students' pronunciation became clearer and more precise after using AI Voice.	I feel like my pronunciation is getting better after getting correction from AI.
2	Increased Confidence in Speaking	Students become more confident in speaking English due to the support of real-time AI feedback, which makes them feel supported in practicing.	Teachers noted that students spoke more often in class after using this technology.	I am more confident in speaking English because AI helps me correct my mistakes.
3	Ability to imitate intonation and rhythm of speech	AI Voice helps students to imitate the intonation and rhythm of speaking more naturally, leading to improved	Teachers saw improvements in how students imitated the rhythm and intonation of speech after practicing with	Practicing with AI made me more fluent in imitating natural speech.

		overall speaking fluency.	AI.	
4	Student Involvement and Participation in Speaking Learning	The use of AI Voice makes students more engaged in learning because it provides a more interactive and engaging experience.	Teachers felt that students were more active in participating in speaking sessions after using AI Voice.	I feel more motivated to participate in speaking practice after using AI.
5	Time Required to Improve Speaking Skills	Students experience faster improvement in their speaking skills thanks to the immediate feedback provided by AI, which helps them correct mistakes faster.	Teachers saw rapid progress in some students in a relatively short time.	I feel like my speaking skills are improving faster because the AI provides live corrections.
6	Effectiveness in Independent Teaching and Out-of-Class Learning	AI Voice supports independent learning outside of school hours, giving students the opportunity to practice at any time, without the constraints of time and place.	Teachers believe that AI gives students the freedom to learn outside the classroom, enhancing independent learning.	AI allows me to practice speaking anytime and anywhere, even outside of class hours.
7	AI's Ability to Provide	AI provides fairly relevant feedback	Teachers noted that most	I found the feedback from

Constructive and Relevant Feedback	and helps students identify pronunciation mistakes and how to correct them, although some students struggle at first.	students responded well to AI feedback, although some needed time to adapt.	the AI to be very helpful, although it sometimes took some getting used to.
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The table above shows that the use of AI Voice has a significant impact on improving students' speaking skills. In terms of pronunciation, students showed clear improvements thanks to direct feedback from AI that helped them correct pronunciation errors appropriately. In addition, AI Voice also increased students' confidence, as they felt more supported and given the opportunity to practice without fear of making mistakes.

Improvements in intonation and fluency were also seen, along with students' ability to imitate a more natural way of speaking. Student engagement in learning became more active, with many students feeling more motivated and involved thanks to the more personal and dynamic interactions provided by this technology. In addition, AI Voice's ability to provide constructive feedback also makes it easier for students to learn independently, making the learning process more flexible.

Discussion

Speech Shadowing method offers an innovative approach to improve students' speaking skills, especially in more effective pronunciation. Research shows that audiovisual shadowing, which combines visual and audio input, can improve speech output better than using audio alone (Venezia et al., 2016). This strengthens the learning process, allowing students to imitate the correct speech pattern. In addition, the instant feedback feature of AI Voice provides an opportunity for students to immediately identify pronunciation errors and make improvements (Wei, 2023). This real-time feedback also helps students improve their intonation and fluency.

Further research shows that the use of AI tools in language learning can accelerate the transition from structured teacher-led instruction to more independent learning (Wei, 2023). AI Voice also offers adjustment of difficulty level according to individual students' abilities, creating a more personalized and effective learning experience (Tapalova & Zhiyenbayeva, 2022). This adjustment contributes to increasing students' motivation and engagement in the learning process. The integration of collaborative and project-based learning methods with AI Voice also provides significant added value.

Students can practice in groups, share feedback, and collaborate on AI-powered speaking projects, enhancing the overall learning experience (Eden, 2024). Research shows that collaborative learning environments can increase student motivation and engagement in language learning (Moulieswaran & S, 2023).

The use of artificial intelligence (AI) technology in English language learning at the senior high school level offers significant potential, but also faces a number of complex challenges. One of the main challenges is limited access to adequate technological devices and a stable internet connection. Many schools, especially in remote areas, do not have the necessary infrastructure to support the effective use of AI in English language learning (Liu, 2023; AbuSahyon, 2023). This can result in inequities in learning opportunities among students, where those with better access are able to make the most of the technology, while others are marginalized (Azizah, 2023).

From a curriculum perspective, the adjustments required to integrate AI into English language learning are also challenging. Teachers need to understand how to use this technology effectively and adapt it to the existing curriculum. Research shows that while AI can provide personalized feedback and support learning, there are still concerns about the accuracy and relevance of this technology in the broader context of language learning (Hockly, 2023; Gyawali, 2022; Wei, 2023). In addition, some students show resistance to the use of new technologies, which may be due to a lack of digital skills or discomfort in interacting with AI systems (Enzelina, 2023; Abid, 2022).

This suggests the need for better training and support for students and teachers to overcome these barriers. Furthermore, although AI is very useful for practicing pronunciation, it still has limitations in covering all aspects of language skills, such as listening and writing (Drozdova et al., 2017). These limitations can hinder the development of comprehensive language skills, which are important for students in the context of learning English as a foreign language.

Research shows that social interaction and feedback from teachers remain crucial in the language learning process, and AI cannot completely replace these roles (Popenici & Kerr, 2017; Moulieswaran & S, 2022). Therefore, it is important to develop a balanced approach that combines AI technology with traditional teaching methods to ensure that students have a comprehensive and effective learning experience.

The use of AI Voice in English language education has been shown to have a significant positive impact on students' speaking ability. Studies have shown that AI can provide immediate feedback that helps students correct pronunciation errors, improve their intonation, and fluency (Gyawali, 2022; Qiao, 2023; Makhoulf,

2021). In addition, more personalized and dynamic interactions with AI increase students' confidence, as they feel more comfortable practicing without fear of making mistakes (Enzelina, 2023; Wei, 2023). Students' engagement in the learning process also increases, which contributes to their motivation and active participation (Rusmiyanto et al., 2023).

AI Voice enables a more flexible and independent learning experience, so students can learn according to their own needs and pace (Yang & Kyun, 2022; Zou et al., 2023). Thus, AI Voice not only improves speaking ability but also creates a more supportive and effective learning environment for students.

Conclusion

Based on the results of the research conducted, it can be concluded that the implementation of Interactive AI Voice in the Speech Shadowing method has proven effective in improving students' speaking skills in high school. The integration of AI technology provides significant advantages in terms of interactivity and accessibility, allowing students to receive direct feedback that accelerate the learning process.

In addition, the use of AI Voice provides an opportunity for students to practice with native speakers virtually, which improves their fluency and pronunciation. Thus, Speech Shadowing supported by AI Voice is able to improve the quality of English learning, especially in the speaking aspect. which is often considered difficult by many students.

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