

## THE USE OF VIRTUAL REALITY (VR) ON ENGLISH STUDENT'S SPEAKING SKILLS IN EDUCATIONAL CONTEXT: A SYSTEMATIC LITERATURE REVIEW

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### Abstract:

Technology has a significant impact on modern civilization and everyday life. Human existence without technology now feels incomplete, because technology has become an inseparable part of our lives. Its use significantly enhances human capabilities, especially in educational contexts. The application of technology in education is very important to prepare future generations to face a rapidly evolving technological landscape. One of the most technological advances in education is Virtual Reality (VR). Integrating VR into the classroom allows students to immerse themselves in a realistic and interactive environment where they can record and evaluate their performance, thereby can improving their fluency. Therefore, this research conducted a systematic literature review to examine the impact of VR use and the factors influencing its effectiveness, particularly on students speaking skills in educational settings. The PRISMA model was used as the method, selecting 13 studies from the initial 133 studies. The results show that VR can effectively and significantly improve students' speaking skills, influenced by various factors. Therefore, VR is a great technological tool that can be used to improve students speaking skills.

### Keywords:

Education; Speaking Skills; Virtual Reality



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## INTRODUCTION

In the 21st century, humans and technology can no longer be separated. Life without technology feels incomplete for humans, while technology depends on humans to control and manage it well. According to Kit et al (2023), technology has had a significant impact on modern civilization, changing communication, work, education and various other aspects of daily life. With increasingly massive technological developments in the current digital era, quality human resources are urgently needed to prepare themselves to be able to survive and compete with other humans in the current era of digitalization (Sepang, Santosa, & Suprianti, 2022). It has simplified daily tasks and even has the potential to replace some human roles. If the use of technology is effective, today's technology will also greatly improve human capabilities and quality of life. One of the most important technological advances in education today is the use of Virtual Reality (VR). The Virtual Reality technology allows interaction with animated objects through computer tools,

immersing users in 3D environment using devices such as VR Cardboard or Box (Kusumadewi et al (2019). Virtual reality technology immerses users in a computer-generated world, giving them the sensation of being physically present in a simulated environment. Users can carry out various activities similar to real life situations, such as chatting with friends, exercising, working, and even selling goods (Fauzi et al., 2021).

One of the important things that must be done to be able to respond to the introduction of technology in the educational context is to give future generations the ability to adapt quickly to technological advances. Combining virtual reality and project-based learning is one of the innovative approaches found to improve students speaking skills (Fakhrurriana & Ningsih, 2023). The application of virtual reality in the world of education, especially language learning, has received enormous attention in research in the context of education as a rapidly developing technological field. According to Audina & Santosa, (2022) the purpose of using virtual reality is to create an immersive experience for students in virtual world. In addition, the use of virtual reality as an audiovisual technology in an immersive environment in the educational context is very beneficial in terms of developing English language skills as a foreign language. Research conducted by Ironsi (2023) and Liu (2023) also investigated something similar, namely looking at the impact of using virtual reality on students speaking skills. This research shows that integrating virtual reality technology in language learning activities has a significant influence, especially on students speaking skills, and this research also emphasizes the priority of student happiness and involvement in integrating virtual reality in language learning activities. With the existence of virtual reality, as mentioned by previous research, it provides great benefits for improving students' English communication skills in the educational context. Through the use of this approach, it is also possible to record and evaluate conversations carried out by students in order to assess the clarity of pronunciation and fluency.

The existence of interactive virtual reality environments can offer students the opportunity to engage in real-life speaking scenarios, encouraging active participation and practical practice. Furthermore, research conducted by Symonenko & Shmeltser, (2020) shows that one of the most effective approaches that can be used to integrate virtual reality into foreign language learning is to combine virtual reality and gamification to create immersive scenarios. The examples of real-life immersive scenarios included simulated of job interviews, daily conversation in the marketplace or an emergency situation where students are need to communicate in a foreign language. The educators can gain valuable insight into the development of students speaking skill by using virtual reality ability to perform data analysis and monitors performance. This allows to more personalized the feedback and more targeted interventions. However, one important thing to consider is the impact VR will have on social interactions outside of the virtual environment and students' overall satisfaction when using the media. With advances in technology, it can stimulate students' experiences in real life which can come from the metaverse area which includes Virtual Reality (Santosa & Banjar, 2024). Moreover, the research from De Vega & Basri, (2024) and Utami et al., (2024) pointed that virtual reality can create an immersive and interesting teaching environment. However, the highlighted in their study is to overcome challenges to ensure successful implementation of virtual reality such as software errors, adaptation issues and the technical support.

In addition, the interactive, smart, creative and customized learning experiences can improve overall language proficiency especially in speaking skills. The use of virtual reality is the potential technology to improve students learning outcomes in languages that founded in research conducted by Yousif et al., (2019). The results of this research observe changes in thinking models that occur as a result of the use of Virtual Reality (VR) in language teaching which provides interesting opportunities for improvement and development in the future. Furthermore, research conducted by Azir et al., (2024) and Muhammad, (2023) also recognized the impact of virtual reality by showing potential and flexibility of virtual reality in various educational settings. however, their research also concerns around the software quality, curriculum consistency and health aspects that need to be considered. Moreover, research conducted by Yan et al., (2023) continued the discussion by providing further understanding of the role of virtual reality (VR) in improving oral skills in context-based learning environments. Their research points the advantages of using virtual reality by highlighting the ability to increase motivation, engagement and transfer language skills to real-life settings in encouraging authentic language use. Virtual reality applications can offer instant feedback on grammar and pronunciation, simulate real-time interactions and customized information to suit the individual user preferences and their learning styles. My systematic literature review aims to improve language education by comprehensively examining the impact of Virtual Reality interventions on speaking abilities. This research involves creating framework to enhance and engage teaching methods by systematically review about previous studies that emphasize about the impact of virtual reality on students speaking skills. Therefore, this study aims to answer the several research question, such as 1. What is the effect of using Virtual Reality on students speaking skills in educational context?; 2. What are the factors that can impact students speaking skills in educational context through using Virtual Reality?

## **METHOD**

The method that used in this study is Systematic Literature Review (SLR), which involves an analyzing and evaluating the results and findings of the previous study in particular topic to reach certain objectives. The data and information in this study were collected from any journals and articles that published between 2019-2024. The reviewed articles in this literature review study came from the electronic database such as google scholar and publish or perish which accessed by using several keywords, such as "virtual reality in speaking skills", "English speaking skills" and "the use of virtual reality in improving students speaking skills".

All of the journal articles sources were collected and accumulated using the method of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) by guidelines from Page et al., (2021). This PRISMA methods model is used to specify the properness criteria, describe the data collection processes, identify the sources of the study information, provide specific data and present the result. The included criteria of this study such as, 1) using virtual reality on student speaking skills in educational context; 2) published in the year of 2019-2024; 3) must using English. On the other hand, the excluded criteria of this study such as 1) using virtual reality on student speaking skills in other context; 2) published under the year of 2019; 3) other language. By collecting

journal articles using the PRISMA model, initially around 133 studies were collected and finally 13 studies were selected based on inclusion and exclusion criteria. The data can be seen in Figure 1.

Figure 1 The PRISMA Model

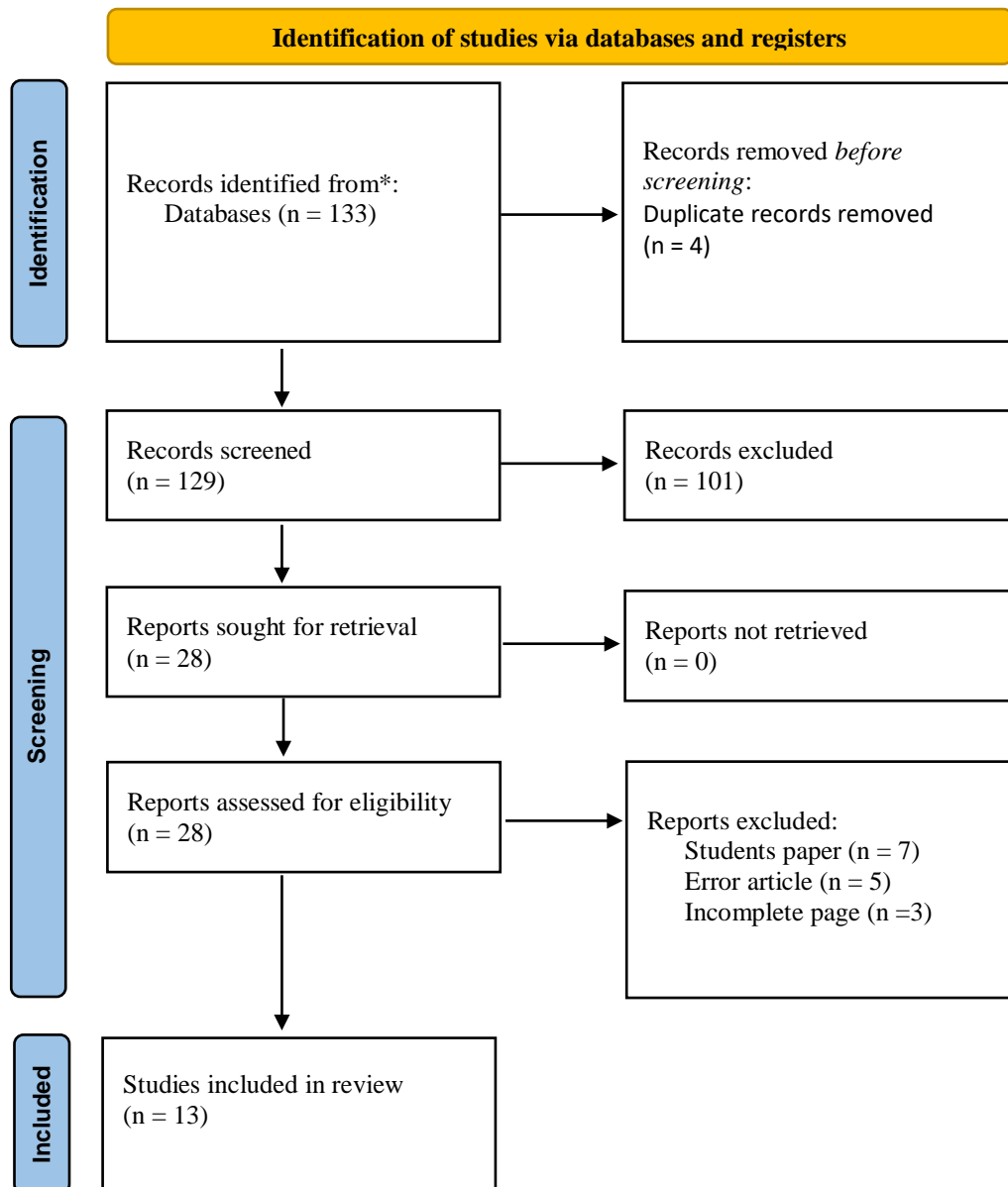


Table 1 Inclusion and Exclusion Criteria

Inclusion	Exclusion
Using virtual reality on student speaking skills in educational context	Using virtual reality on student speaking skills in another context
Published in the year of 2019-2024	Published under the year of 2019
Must using English	Other language

## RESULTS AND DISCUSSION

### *Results*

The articles that have been chosen focus discuss about the advancement of virtual reality and students speaking skills. Most of the studies have been conducted using virtual reality on students speaking skills, especially using virtual reality to improve student speaking skills. The previous studies have been provided information about using virtual reality on students speaking skills. In this study, used the following criteria, such as exploring the effects of using virtual reality on students speaking skills and developing virtual reality to improve the student speaking skills are more fluent. For the detailed information about the findings from previous study, the author will explain in Table 2 toward this explanation.

**Table 2** The Overview of Related Study

NO	Author(s)	Findings
1.	Damio & Ibrahim, (2019); Ironsi, (2023)	Both studies find that Virtual Reality technology significantly increases student interest and engagement in speaking activities, reduces the anxiety associated with public speaking and improves overall speaking skills by providing a more immersive and interactive learning environment.
2.	Azir et al., (2024); Muhammad, (2023); Yan et al., (2023)	These studies find that integrating Virtual Reality into language teaching significantly improves English speaking skills among vocational students and increases engagement. They emphasize the value of Virtual Reality in providing authentic, immersive learning experiences that enhance language acquisition and performance.
3.	De Vega & Basri, (2024); Fakhurriana & Ningsih, (2023); Utami et al., (2024)	These studies highlight Virtual Reality's Role in enhancing student engagement and motivation in language learning environment. They discuss how Virtual Reality can provide immersive and interactive experiences that make language learning more engaging and effective.
4.	Frantz & Grosenbacher, (2021); Kryston et al., (2021)	Both studies indicate that Virtual Reality increase confidence, reduces anxiety and improves public speaking skills with practice. They emphasize the importance of regular Virtual Reality practice session to achieve significant improvements in public speaking performance and reduce anxiety.
5.	Wong et al., (2024)	This study finds that incorporating Virtual Reality learning games effectively improves academic performance. However, it notes that there is still room for improvement in student engagement and suggests further development in Virtual reality integration strategies.
6.	Soto et al., (2020); Yuanyuan, (2024)	Both studies highlight the effectiveness of Virtual Reality in enhancing language skills. Virtual Reality based English speaking platforms can improve the learning outcomes. They also emphasize that the benefits of Virtual Reality in providing adaptive learning approaches and immersive environments that enhance student confidence, motivation and overall language fluency.

## *Discussion*

### **General Overview of Virtual Reality Technology in Speaking skills**

Virtual Reality (VR) is a technological tool that is able to enable humans to communicate in the virtual world created by the tool that can interact with other humans in a certain place. Virtual Reality is a communication tool that makes real virtual experiences and immediate (Frantz & Grosenbacher, 2021). In addition, Ironsi (2023) stated that Virtual reality in the twenty-first century has been an increasingly popular technology in learning aid that believed to have potential learning enhancement. Moreover, Kryston et al., (2021) also stated that virtual reality along with gamification and simulating a real-life situation was found to be the most effective technique in VR based foreign language learning. In this case, virtual reality is a tool that can provide the user with an illusion or fictional world, so that the user can clearly see the real world represented by virtual reality in the virtual world. The unique features of VR make it an exciting learning tool (De Vega & Basri, 2024). According to Damio & Ibrahim (2019), Virtual Reality can provide the different representation of real-life, immersing students in a way that 2D multimedia cannot immerse, representing the natural complexity of the real world in precise tasks and showing different contexts. Virtual reality is often perceived as a more natural environment for discussion compared with traditional academic environments.

Speaking skills are a very important ability to master because mastering good speaking skills makes it easier to communicate with other people, both formally and informally. However, mastering this speaking skill is not an easy thing so to be able to master it requires lots of opportunities to practice (Muhammad, 2023). Incorporating virtual reality in the classroom can enable students to reduce their anxiety in learning English language skills especially in speaking because this technology does not reveal their identity and provide a comfort environment for them (Yuanyuan, 2024). Speaking skills is one of the abilities of the English language learners. The study from Azir et al., (2024) stated that Speaking skills, which play an essential role in promoting an effective communication, cultural understanding and the practical language skills in different contexts. Among all of the communication skills in the world, speaking is highly valued. Speaking skills are directly relevant and applicable in everyday communication, makes language learning valuable, as it provides students with practical, meaningful and greater impact on student lives. According to Yan et al (2023), the importance of speaking skills is emphasized by their role, which enables learners to express their needs in the target language and facilitate meaningful communication with the native speakers and fellow learners. In addition, Aprianti & Ayu (2020), stated that the goal or aims of speaking skills is for students to communicate and this is the earliest language production skill that someone can acquire before they can write. Therefore, study from Soto et al., (2020) stated that people who has good speaking skills can enquire the whole world because speaking skills is the most important skills for all of the learners who want to learn English.



### **Virtual Reality Impact on Students Speaking Skills**

Virtual Reality is a technological tool that allows individuals to improve their communication techniques, increasing their fluency. There has been much investigation into using virtual reality in student speaking fluency. According to the study from Utami et al., (2024) there are many benefits by the use of advanced technology, such as improved strategies for teaching and the opportunities to increase language learning through immersive and engaging virtual reality experiences. Furthermore, virtual reality has a potential in providing an understanding of the use for focused and effective teaching methods, which can be adapted in language learning in specific context (Wong et al., 2024). This is especially valuable in education, where students need to practice their speaking skills. By creating more interactive, realistic and engaging experiences, as well as providing the students an opportunity that can improve their oral communication and the speaking skills in variety context, the teacher can better to enhance their students' speaking skills. Both studies conducted by Azir et al., (2024) and Muhammad, (2023) emphasizes virtual reality can encourage students' motivation to more active engage in speaking practice, making the learning experiences more enjoyable and increasing the student's participation in the speaking learning process.

In the same context, virtual reality has the advantages in encouraging the use of mother tongue through the ability to increase motivation, engagement and the language skills transfer to real-world situations. In addition, study from Soto et al., (2020) and Yuanyuan, (2024) highlighted about the importance virtual reality and immersive environments as advanced technologies of audiovisual of English as a Foreign Language (EFL) development. To creating, engaging and integrating an innovative technology into educational setting is crucial get an interactive and efficient learning environments that can meet the need and preferences of different students. Moreover, research conducted by Fakhurriana & Ningsih (2023) found a new approach to improving speaking skills by integrating virtual reality technology with project-based learning. This research was conducted to find out how the influence of virtual reality can motivate and improve students' language learning abilities so they can be more actively involved and how this can also create a more in-depth and interactive learning experience.

### **Factors that Can Impact Student Speaking Skills through Using VR**

The influence of virtual reality in the educational environment has a significant impact on students' speaking abilities. By providing a more immersive learning environment, the use of virtual reality can enhance students' learning experiences thereby increasing student engagement and encouraging them to use authentic language learning (Frantz & Grosenbacher, 2021). With this technology, students can record which will later be used to check the clarity of pronunciation and fluency so that later they can improve their ability to speak and discuss as revealed by research conducted by Fakhurriana & Ningsih (2023) by combining virtual reality with project-based. With the instant feedback system in virtual reality technology, it allows students to identify and correct the mistakes they make in real time, so that in the end they will be able to improve their speaking fluency over time. This is in line with the findings of the study from Ironsi (2023) which highlight

the positive influence caused by virtual reality on speaking skills and emphasizes the importance of student involvement and overall satisfaction in language learning. With elements of social interaction, it can build self-confidence and speaking skills in a supportive environment so that later students can communicate and collaborate with peers or virtual characters.

Apart from that, research by De Vega & Basri, (2024) and Utami et al., (2024) emphasize the potential of virtual reality for enhancing specific language skills, especially in speaking and listening skills and demonstrate its adaptability in an educational variety environment. They also provide a detailed understanding of the advantages and disadvantages of using virtual reality in language learning. With the use of high quality and realism VR Content allows for more realistic conversations and more effective practice opportunities. In addition, research conducted by Yuanyuan, (2024) explores the creation of virtual environments and integrates such interactive conversation elements and adaptive learning mechanisms, thereby improving students' speaking skills within a VR-based language learning framework. The easy accessibility and user friendly of virtual reality technology can have significant impact on its effectiveness, as students will prefer to use the platforms that are easy to use and access.

## CONCLUSION

Virtual Reality offers a unique and immersive environment for students to practice their communication skills without the pressure of face-to-face interaction. Integrating Virtual Reality (VR) into language learning is very effective in improving students' language skills, especially in speaking skills. The use of virtual reality can help to improve pronunciation, fluency and the overall about the communication skills through simulated situations. This interactive approach can not only increase enthusiasm for learning but can also produce a more enjoyable and effective learning experience by fostering active participation and increasing students' self-confidence. Moreover, the capability of virtual reality in offer immediate feedback and adapt learning experiences is highly beneficial. It is can make the students to participate in authentic conversation, receive feedback and practice speaking across various context by utilizing virtual world and interactive elements. Utilizing this technology can assists students to develop practical language skills while expand their understanding of culture and effective communication strategies. As virtual reality advances, its potential to revolutionize language education and empower students to master in speaking skills becomes clearer.

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