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THE INTEGRATION OF MONDLY VR IN CHINESE EFL CLASSROOMS: A CASE STUDY

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The emergence of Virtual Reality (VR) has drastically altered the overall layout of language education. VR-powered technology enables language learners to practice their speaking skills in real-life, stress-free, and interactive conversational scenarios, which conventional teaching methods fail to meet. Hence, the present paper seeks to examine the efficacy of integrating VR-powered technology in English as a Foreign Language classroom settings for the development of speaking skills. To evaluate the impact of VR technology in improving students' speaking skills, the paper employs a mixed-method approach, namely, in-depth case studies and quantitative data analysis. The findings provide evidence-based insights into how VR-supported tools ameliorate students' conversational skills in terms of fluency and accuracy. The applicability of the content in developing conversational skills underlines the strong practical value of the research, as well as makes a solid case for its massive integration in language teaching. Considering its transformative potential, future research is not only warranted but crucial to modernizing and enriching EFL pedagogy.

Keywords: *virtual reality, speaking skills, Mondly platform, effective communication, accuracy, fluency.*

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Introduction

Speaking fluent English with standard pronunciation and accurate use of language structures is one of the weaknesses of many Chinese students. Various empirical studies emphasize that many Chinese struggle with effectively using English in social and academic contexts, highlighting issues that need to be addressed as China aims to develop a larger pool of proficient English speakers for globalization participation (Chea, 2024). Researcher Xu mentioned that the first weakness among most Chinese tertiary EFL students is influent language flow and incoherent answers. Lack of input can lead to insufficient ability in output (Xu, 2019). Hence, in recent years, Chinese educators are trying to improve students' English speaking skills, taking into consideration the fact that English is a global language and mastering it can be helpful in many aspects of human life. However, recent studies conducted in Chinese foreign language teaching sphere demonstrate that the majority of Chinese English teachers still focus on memorization of vocabulary (known as 死记硬背), as well as unlimited practical drills of grammatical structures. Recitation input has a very important position among the Chinese traditional teaching methods (Yuan, 2023). Relying barely on paper-based textbooks or traditional methods has lost its efficacy and validity. Therefore, Chinese ESL teachers should employ various teaching methods to improve students' speaking competencies.

The findings of the recent studies show that Chinese teachers do not accentuate the actual application of vocabulary, or word-expressions in different contextual conversations, which stand as obstacles in developing students' speaking skills (Sulaiman, 2025, Shadiev, 2023, et al.). As a matter of fact, these obsolete teaching methods fail to meet the core objectives of teaching foreign languages and impede students speaking practice in real-life contexts.

In recent years, more and more studies emphasize the importance of using effective methodology and relevant resources that are practical for holding real-life communication selecting and tailoring teaching methodologies to suit specific educational contexts and learner profiles that can simulate the natural language acquisition processes (Peng, 2024).

Such resources and techniques will highly improve the accuracy and fluency of students' speaking. The selection of appropriate methodology and techniques should meet the learners' needs and apply to the learning environment.

It has been proven by many studies that nowadays students prefer digital learning resources over paper-based textbooks. The tech- students of today have easily adopted electronic textbooks as a replacement of printed textbooks owing to their ease of use, cost effectiveness and accessibility (Alfiras & Bojiah, 2020).

This can be elucidated by the fact that students born after 2000's have been mainly surrounded by technological advances, such as social networking websites, the Internet, smartphones, laptops, smart watches, Ipads, and so on. Generation Z and Generation Alpha have experienced a combination of real-world and virtual reality practices. Moreover, many educational institutions in different parts of the world have incorporated novel technologies in their courses, trying to meet the preferences and requirements of individuals. The adoption of smart digital technologies in the education system has grown exponentially over the years, creating new possibilities to improve teaching and enhance learning (Mhlongo et al., 2023).

In the past two years, virtual reality-powered technology has been the focus of many studies due to its high beneficial potential to its applicants. VR technology has enabled educators to develop a wide range of learning experiences, from virtual field trips to complex simulations, that may be utilized to engage students and help them learn (Marougkas et al., 2024). VR technology is employed in numerous fields: healthcare, military, entertainment, education, media, business and so on. The application of VR-based tools in ESL language classroom have enjoyed much popularity in the past 2 years due to its potential benefits to learners and teachers.

VR-powered applications and platforms have substantially shaped language learning and teaching environment by offering the learners the opportunity to immerse into authentic real-life situations. This novel technology promotes practical learning, accelerates communication drills with native speaker avatars, and keeps students focused. VR-powered language learning is a novel and alternative solution to the conventional teaching methodologies that became unengaging over the time. Since the advent of VR technology, many companies have launched VR-powered language learning apps like Mondly, Virtual Speech, FluentU, Alelo, VR4LL.

Integrating VR-powered tools in EFL learning environment will notably develop students' speaking skills by providing real-life communicative scenarios. Learners like to be engaged in interaction with virtual avatars. VR platforms provide language learners real-life experiences that they cannot experience in ESL classrooms.

Hence, the present study seeks to examine the outcomes of incorporating VR-powered language learning in ESL classrooms for developing speaking skills among primary school students. The findings of this research paper enrich existing literature with evidence-based insights that can serve as guidelines for language teachers in integrating effective language learning technologies in their language instruction. This research paper provides valuable information on the impact of

immersive technology in language acquisition, which can assist language educators get a holistic understanding of the potential of VR-based tools to create an authentic and engaging milieu that simulate real-life interactive scenarios, enabling students to practice language structures beyond the classroom settings. Hence the objectives of this research paper are the following:

1) to examine the efficacy of integrating Mondly VR platform in EFL classroom for developing students' speaking skills (accuracy and fluency),

2) to evaluate the impact of VR-powered technology in developing EFL learners' speaking skills in speaking assessments.

The objectives of the following research paper seek to answer the following research questions:

RQ1: How does the integration of Mondly VR application in EFL classroom settings influence the development of English learners' speaking skills in regard of accuracy and fluency?

RQ2: How do VR-powered learning tools enhance students' speaking competencies during oral assessments?

The literature review presents the theories, practices, and findings of the research conducted on VR technology in language acquisition.

Methodology

To provide an accurate and comprehensive understanding of VR-powered tools in developing speaking, the current study employs a mixed-method approach, namely in-depth case study and quantitative data analysis. Recognized as a tool in many social science studies, the role of case study method in research becomes more prominent when issues with regard to education (Gulsecen & Kubat, 2006).

In this paper, the research questions call for an in-depth understanding of the role of VR-powered technology in boosting ESL learners' communicative skills. Hence, the application of quantitative data analysis is essential to draw comprehensive and valid conclusions.

To answer the research questions, RQ1 and RQ2, quantitative data analysis proved to be the most suitable. Learners' progress scores generated by Mondly report cards, together with a pre and post-test design, were applied in the following research. The above-mentioned research elements provide valid empirical evidence for developing speaking skills through VR-based language learning and teaching.

The role of effective communication

Effective communication is of paramount importance in fostering productive collaboration among individuals in various personal and professional settings. The effectiveness of communication is often determined by how well the message conveyed is received and understood by the other party (Soid et al., 2025).

Uzun (2021) categorizes the following forms of communication: intrapersonal communication (internal dialogs, self-talks, self-reflections, thought analysis), interpersonal communication (communication taking place between two individuals in online or face-to-face contexts), group communication (this form of communication encompasses more than two participants, it can be both formal and informal), and the last one is mass media communication (nowadays communication among people is mainly carried out in social media platforms) (Uzun, 2021).

It is worth mentioning that the overall essence of communication skills still remains unaltered to this day. Carmen Hudson describes communication skills as the capacity to convey ideas clearly, understand others, and build strong relationships. The author underscores the importance of developing active listening skills and adaptive communicative skills in different settings (Hudson, 2016)

Effective communication employs both verbal and non-verbal communicative patterns. According to Huang effective communication is "the ability to step beyond one's own culture and function effectively and appropriately with speakers from different linguistic and cultural backgrounds" (Huang, 2021).

Effective communicative skills will enable individuals to hold successful talks and impart their thoughts and ideas in different social contexts. Communication skills are a very crucial and significant element in an organization, and they are necessary for creating collaboration within the work environment that has effects on organizational performance and decision making (Musheke & Phiri, 2021).

Effective communication skills minimize all kinds of barriers existing among the speakers with different cultural, racial, religious, and linguistic backgrounds, etc. To hold a successful conversation, foreign language learners should possess a decent command of vocabulary, and be able to employ different language structures in different contexts. Articulation is another vital component in effective communication process. Articulation is not well borne in mere anecdote, opinion, or in internalized contemplation. Hence, possessing proper articulation will foster comprehension and mutual understanding among speakers.

English language learners' mental and cognitive abilities, individual differences, learning habits, limited practice opportunities, and lack of comprehensive input from native speakers could also hinder the process of

effective communication and language learning (Yang et all., 2020; Grieve et al., 2021).

Virtual reality in EFL classrooms

The emergence of VR technology has drastically altered many aspects of life, creating new challenges and opportunities for educators. Virtual reality is defined as an approach that "allows the user to subjectively be involved and become immersed within a computer-generated environment (Lamb, 2022).

The main objective of VR is to make the user feel close to another reality, using the human's five senses. This technology integrates a diversity of devices that may be used to help create a realistic and multisensory experience (Pinto et al., 2019).

In the passage of time, various innovative methods have been created to meet the needs of EFL learners and teachers. However, due to the limited exposure of the target language, learners frequently fail to achieve their learning goals.

The increasing popularity of VR technology has triggered scholars and language teachers to incorporate VR technology in various domains of education. According to Marougkas, VR technology creates immersive and interactive educational experiences by stimulating real-world events (Maroughkas et al., 2024). More specifically, it enables EFL learners to enhance the language in a more practical way.

VR is an extraordinary means that can boost students' learning and reform the learning and teaching experience (Parmaxi, 2020).

VR has the potential to provide access to places and daily life situations where English learners can consistently be exposed to the target language. Slater has demonstrated that users whose primary representation systems are visual are more likely to experience presence in a visual virtual environment than users whose primary representation systems are auditory or kinaesthetic (Slater et al., 1998).

Teaching speaking skills: integration of RALL technology

In the course of time, teaching foreign languages has undergone dramatic alternations in terms of methodology and classroom layout. In the last century, language teachers focused on repetitive drills of monologues or dialogues as the keystone of practicing speaking. However, technological advances have deeply impacted foreign language teaching and learning. Since then, language teachers have started to figure out the drawbacks of old methods of teaching spoken English and have made an attempt to come up with innovative methods that will align with

technological innovations. For instance, Hamid and Baldauf (2008) highlight the failings and inadequacies of the communicative method in their own sites of research. All of these researchers' view CLT as a method that is already outdated and in need of replacement (Hassan et al., 2012).

Since then language teachers have considered social interaction as a crucial factor in language enhancement. Verga et al, state that social interaction influences human communication, and more specifically, language learning (Verga & Kotz, 2013).

Social interactions with teachers and peers provide a rich context for language development (Burchinal et al., 2008).

Over the years, technological innovations have significantly revolutionized the methodology of teaching speaking. At first, language teachers used TV programs, radio, CD (DVD) and ROM disks to practice speaking. Later on, with the advent of computers, language teachers embraced a new era: Computer-Mediated Language Learning. Teachers embraced computers as tools to enhance language abilities (Asrifan et al., 2020). The latter was followed by the mass application of smartphones, tablets and interactive boards. Many studies underscored the positive influence of MALL on ESL learners' speaking. More particularly, vocabulary acquisition was the most investigated language teaching area. An informal context was the most popular educational setting for MALL practice. Mobile phones/smartphones were the most used devices, and social applications/software, particularly WeChat.

Lately, VR-language learning tools have entered in the picture of language acquisition. VR-based applications effectively enhance students' learning in a short period of time. VR provides a highly immersive learning experience by simulating environments (Hamilton et al., 2021). This unique feature allows students to engage with language learning in a realistic and interactive manner. For kinesthetic learners, the interactivity offered by VR is particularly beneficial, as it provides hands-on experiences that enhance language acquisition (Garduno et al., 2021).

VR-based apps, compared to other technological advances, enjoy much popularity among ESL learners due to their anxiety-free environment. A study conducted by Zhang reveals that by providing an immersive experience, VR technology creates a safe and controlled environment for university students to confront and manage their anxiety and fear (Zhang et al., 2025).

The review of the literature illustrates that even though descriptive research is widely accessible, there are few experimental studies assessing how VR-powered applications affect ESL learners' communication skills. Hence, this research work makes an attempt to fill the research gap by addressing the need for additional

empirical research to examine how the integration of VR-based apps in EFL classrooms will improve learners' communication skills in close future.

Participants

The research was conducted in Beijing Limai International school (People's Republic of China) in the 2023-2024 academic year. Beijing Limai International Bilingual school is located in Chaoyang district, and is equipped with the latest tech-innovations and facilities: spacious AI classrooms, VR headsets, reliable Internet connectivity, etc. After introducing our research goals to school authorities and ESL teachers, the school's administrative department granted us permission to carry our research out. Staff members' willingness to support us in conducting our research helped us a lot, making the process smooth.

Taking into consideration the fact that high school students were getting ready for their AP and A-Level exams, and any potential disruption could impact their GPA scores, and primary school students lack technical skills, get distracted easily, our research team mainly focused on middle school students (grade 6-8). The study included both male and female participants. The selected participants were mainly Chinese whose mother tongue is not English.

To ensure that student-participants would have the same experiences of applying VR-powered tools to develop communicative skills, our research team selected students from the same class level. They were chosen based on their English speaking proficiency, which was assessed by CSE (China’s Standard of English, the results were marked as pre-test scores). This strategy ensured that selected student-participants share common foundation in language proficiency. Moreover, in the pilot test including around 150 students, the majority of participants mentioned that they had experienced VR tools before on an irregular basis. In alignment with the selection criteria, 20 participant students were selected to conduct an in-depth study on the effectiveness of the integration of VR-based tools in EFL classroom settings.

Research instruments

Data collection contains elements of quantitative research analysis, namely pre and post-test scores from speaking assessment and progress report cards from Mondly VR application. The following quantitative instruments (pre and post-test) were employed to evaluate the efficacy of VR tools among learners. Response accuracy results in the Mondly report card and speaking assessment scale served as keystones for answering the research questions.

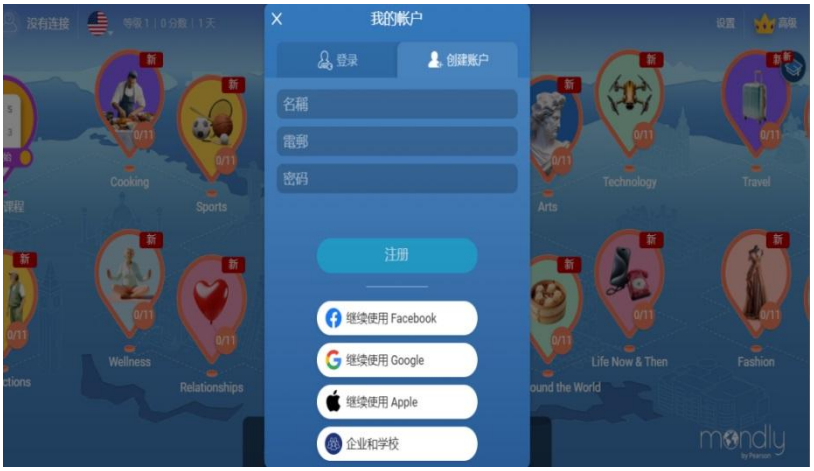
Taking into consideration the reviews and popularity among learners, Mondly VR application was chosen for conducting the following study. Our research team ensured that topics chosen from Mondly application completely accorded with the school syllabus taught at Beijing Limai International school.

Mondly VR application was founded by Alexandru Iliescu and his brother Tudor Iliescuin in 2013 in Romania, Brasov (mondly.com/vr). The VR applications seeks to provide a room for improving EFL learners' speaking and pronunciations through interactive drills with avatars. The following application empowers students to interact easily with virtual objects and avatars in an online real-life environment such as ordering food at a coffee shop, travelling in a foreign country, buying food in a supermarket, and so forth. Classes are categorized into three levels (basic, intermediate and advanced) based on learners' language proficiency. To draw the attention of students, classes are designed in an interactive and creative way. In other words, Mondly VR applications enables students to practice speaking in real-life scenarios by improving their fluency and accuracy, instead of having dialogue drills in actual classroom settings. Our research team carefully chose the following 7 topics that are highly in accord with the school syllabus: 1) Ordering in a Restaurant, 2) Planning Holidays, 3) In a Movie Theatre, 4) At the hospital, 5) My Family, 6) Weather and Seasons, 7) Countries and Languages. Students communicated with the avatars regularly and their answers were evaluated and recorded by the application.

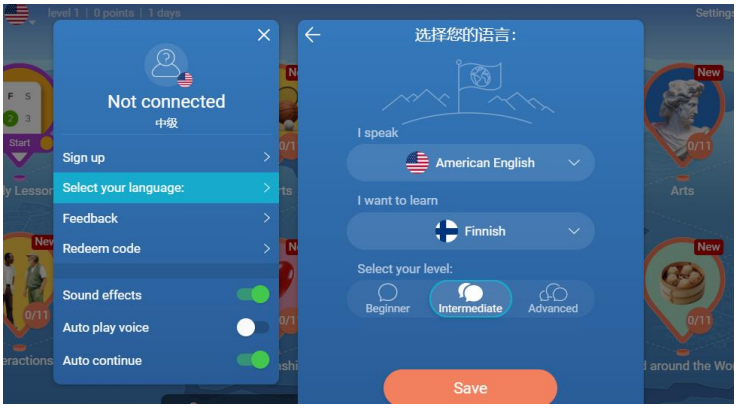
Incorporation of Mondly Virtual Reality in EFL classroom

The current study employed chronological order to present the application of Mondly VR tool in EFL classrooms.

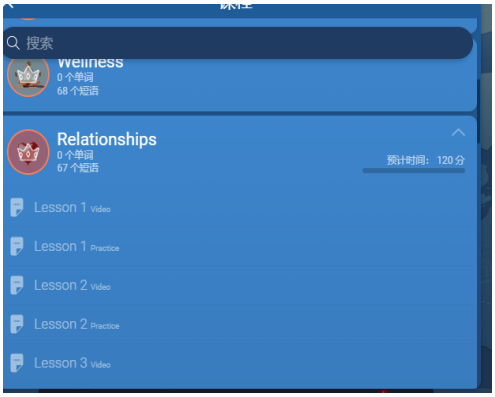
Step 1: Students need to register to get logged in the VR application.



Step 2: Students are required to choose the target language they want to learn, as well as their mother language. Mondly VR provides accurate translation of the teaching content, phrasebook, etc, to avoid any misunderstanding. Students can choose 25 languages to learn.



Step 3: Our research team chose lesson topics which matched with the syllabus employed in Beijing Limai International School. Students started taking the designated topic on a regular basis. Mondly categorizes classes in three types: beginner, intermediate and advanced. Based on students' pre-test scores (majority got B1), our research team tasked them to choose intermediate level.



Each module consists of 4 major elements: VR-powered video practice, vocabulary practice, conversation practice, grammar drills and test.

Step 4: Students are tasked to put on their VR glasses, click on the button "start". Once they press the start button, they are immersed in a real-life scenario. The virtual avatars start communicating with students. Subtitles are also provided to ease the understanding. In the real-life scenario, students are supposed to provide answers to the interlocutor's questions. The answers are automatically recorded and assessed. The accuracy, fluency and pronunciation should meet the standards of the VR tool, otherwise the virtual avatar keeps asking the same question over and over again, until the response is satisfactory.

Step 5: Our research group was able to check the progress of each student with the help of teacher's dashboard. Assessment dashboard is available both for parents and teachers. A thorough assessment of fluency, accuracy, content taught, etc., appears in the dashboard after the completion of each class. The online dashboard enables teachers to track the progress of students on daily, weekly and monthly basis. In addition to that, personalized feedback is also provided, which can serve as a reference for teachers in their further lesson planning.

After 8 weeks, students completed the experimental course successfully. The absentees were provided another chance to complete the tasks at the weekend. Taking into consideration the technical issues, malfunction of laptops, VR classes were conducted with the assistance of Chinese homeroom teachers.

Findings

The findings of the following research are analyzed and presented based on the research questions. The first research question was analyzed on the basis of the report cards generated by Mondly VR platform. Mondly progress report cards were then synthesized by employing statistical analysis. The second research question was analyzed on the basis of pre and post-test scores. Sample T-test was used to assess the efficacy of VR-powered technology in developing students' speaking skills.

Research Question 1: The first research question seeks to reveal how the integration of the Mondly VR-powered tool in EFL classroom settings improves students' speaking skills in terms of fluency, pronunciation, and accuracy. Therefore, it attempts to evaluate the effectiveness of Mondly VR application across different real-life conversational scenarios based on the thorough analysis of respondents' answers.

Twenty student-participants were involved in Mondly VR-powered classes and their response accuracy scores were recorded by the application (the data of students' response accuracy is presented in Table 1 in percentages). It is worth mentioning that participants' speaking performances in various real-life communicative scenarios significantly vary. More specifically, participants 7, 11, and 17 had high level of accuracy and fluency across many classes, while participants 3 and 15 recorded very low accuracy scores, especially in "At the hospital" and "Countries and Cultures" lessons.

Participant-students demonstrated different levels of accuracy in different classes (data is presented in Table 2). More particularly, lesson five "My Family" has the highest level of accuracy with a mean 81.07 %, while the lesson entitles "At Hospital" which required students to hold a basic conversation with the doctor and receptionist, is marked with the lowest level of response accuracy 49.87 %. This can be mainly related to the fact that participant students have experienced varying levels of familiarity and difficulty with the content. The average mean accuracy of all the participant students is 65.57%, which is a moderate level of speaking proficiency.

It is obvious that participants of Mondly VR lessons demonstrated different levels of academic progress in terms of fluency, accuracy of responses, and pronunciation. Participants 7, 11 and 17 demonstrated stable and consistently growing progress in different classes. Meanwhile, the lessons for participants 3 and 15 were quite challenging in terms of pronunciation, fluency and accuracy. This fact highlights that these students were in need of teacher intervention and support.

Partici-pants	Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6	Lesson 7	Lesson 8
1	51	44	67	88	78	61	92	84
2	78	55	50	86	68	40	65	76
3	55	17	36	67	43	57	43	65
4	56	56	26	57	87	59	87	75
5	56	43	32	64	76	76	76	85
6	67	87	56	67	43	86	43	64
7	54	76	85	64	79	45	78	65
8	89	89	45	87	56	59	65	98
9	65	56	64	78	45	100	40	89
10	54	45	76	55	78	88	84	100
11	78	62	69	56	67	45	87	56
12	65	74	100	56	98	64	78	45
13	55	87	58	100	62	76	55	78
14	45	50	86	55	65	69	56	67
15	64	66	77	56	86	77	56	98
16	67	67	65	63	77	58	78	62
17	76	71	45	87	56	86	55	65
18	45	15	64	78	45	77	56	86
19	84	78	76	60	78	65	63	77
20	79	88	66	49	87	100	54	32

Table 1: Accuracy based on Mondly progress report cards

After the support and intervention of teachers, student-participants showed different levels of response accuracy (see Table 2).

Lessons	Total Score	Percentage of Average Response Accuracy
(1)	55+44+67+88+78+61+92+84	71.13
(2)	78+55+50+86+68+40+65+76	64.75
(3)	55+17+36+67+43+57+43+65	48.13
(4)	56+56+26+57+87+59+87+75	62.88
(5)	56+43+32+64+76+76+76+85	63.50
(6)	67+87+56+67+43+86+43+64	64.13
(7)	54+76+85+64+79+45+78+65	68.25
(8)	89+89+45+87+56+59+65+98	73.50
(9)	65+56+64+78+45+100+40+89	66.38
(10)	54+45+76+55+78+88+84+100	72.50
(11)	78+62+69+56+67+45+87+56	65.00
(12)	65+74+100+56+98+64+78+45	72.50

(13)	55+87+58+100+62+76+55+78	71.38
(14)	45+50+86+55+65+69+56+67	61.63
(15)	64+66+77+56+86+77+56+98	72.50
(16)	67+67+65+63+77+58+78+62	67.13
(17)	76+71+45+87+56+86+55+65	67.13
(18)	45+15+64+78+45+77+56+56	55.75
(19)	84+78+76+60+78+65+63+77	72.63
(20)	79+88+6+49+87+100+54+32	61.88

Table 2: Response accuracy

Research Question 2: The second question, "How do VR-powered applications improve ESL learners' fluency and pronunciation in an oral test?", is analyzed based on the statistical results of the pre and post-test scores taken from oral assessments. Speaking assessments were conducted based on the standards of the Common European Framework of Reference for Languages (CEFR). CEFR levels of evaluating students' speaking abilities range from A1 (beginner) to C2 (native level).

To assess students' speaking skills based on CEFR standards, a pre-test assessment was arranged before the actual initiation of Mondly VR-powered classes, and after that, students started taking VR-powered classes for seven weeks on regular basis. Mondly VR-powered classes contained various real-life scenarios, where speakers practiced their speaking. After the successful completion of the VR lessons, participants took a post-test speaking exam based on CEFR standards as well. The target of the post-test assessment was to measure and identify the changes in students' speaking skills. The outcomes of the post-test assessment vary from student to student (see Table 3).

Participants	Sex	CEFR Level (pre-test)	CEFR Level (post-test)	Differences after VR application
1)	Male	A2	A2	0
2)	Female	B1	B2	1
3)	Female	A2	B2	2
4)	Male	B1	B2	2
5)	Male	A2	B1	1
6)	Male	B1	B2	1
7)	Male	A2	B1	2
8)	Female	A2	B1	1
9)	Female	B1	B2	1
10)	Male	B1	B2	1
11)	Male	A2	B1	2

12)	Male	A2	A2	0
13)	Female	B1	B2	1
14)	Female	B1	B2	1
15)	Male	A2	B1	1
16)	Female	B1	B2	1
17)	Male	A2	B2	2
18)	Female	B1	B2	1
19)	Female	B1	B2	1
20)	Male	A2	B1	1

Table 3: Post-test assessment

Table 4 summarizes the average results of pre and post-tests. In the pre-test level, there were 9 students in the A2 level. After the 8-week VR lessons, only two student-participants were recorded to be in the A2 level, while others showed significant progress, improving their speaking competence to B1 and B2 levels. Most students elevated at least one level, which is considered to be a significant achievement.

CEFR level	Pre-test scores	Percentage	Post-test scores	Percentage
A2	9	40%	2	6.888867
B1	11	60%	6	22.3746
B2	0	0	12	71.2334
Total	20	100	20	100

Table 4: Summary of Speaking Assessment

For the analysis of pre and post-test scores, our research team employed statistical methods, namely a paired sample T-test. The statistical analysis of pre and post-test scores highlights the major differences of students' speaking skills after VR-powered classes. The results reflect the efficacy of VR-powered technology in improving students' speaking skills. The mean differences of pre-test and post-test scores, students' number and standard deviations assessed after VR classes based CEFR levels are presented on Tables 5 and 6.

Differences	Mean average	N	Standard Deviation
A2	2.3333	10	.91650
B1	.9889	10	.43333
Total	1.0667	20	.69362

Table 5: Pretest Scores Differences

Differences	Mean average	N	Standard Deviation
A2	.0000	2	.0000
B1	.6667	6	.68735
B2	1.2727	12	.56810

Table 6: Post Scores Differences

As we can see from Table 6, students who got CEFR A2 level showcased a mean post-test difference of 0.0000. This applies only to two participants; hence, the statistical deviation is not valid. Generally, participant-students with pre-test A2 level showcased substantial improvements in post-test scores. Only two students did not have any progress. This outcome could be dependent on many factors which are clearly discussed in the next part of the paper.

Participants with pre-test CEFR B1 level exhibited certain progress with a 1.6667 mean difference of the post-test score. 0.77735 is the standard deviation among 12 other students with B2 level, which means the progress rate varies in this subgroup.

After the final analysis of pre and post-test mean differences, we can deduce that the overall impact of VR-powered lessons on developing speaking skills is notably positive. Students at A2 level showcased 2.3333 mean difference, which implies dramatic improvement. 0.81650 is the standard deviation across the other student-participants of this level. 0.8889 is the mean improvement score of pre and post test results of B1 level students, which indicated that students in this subgroup experienced quite positive change. 0.3333 is the lowest standard deviation of this subgroup. The total mean difference among all the subgroups is 1.0667. The standard deviation of all the student-participants is 0.59362 which stands for the variability of the improvement in the entire sample. The mean post-test scores signify that the application of VR-powered tools in ESL classroom settings has positive efficacy in improving students' speaking skills.

Paired Differences										
						Conf. Inter. of Differences				
			Mean	Std. Deviation	Std. error mean	Lower	Upper	T	Df	Sig 2 (tailed)
1st Pair	Pretest	Post-test	-1.06766	-59372	.14328	-1.49550	-83793	6.957	12	.000

Table 7: Paired Sample Test

Moreover, our research team employed a paired sample T-test to evaluate the significant variations between pre and post-tests scores among all participants. The

outcomes reflect the holistic image of the impact of VR-powered technology in EFL classroom settings for ameliorating students speaking skills. -1.06766 is the mean difference between pre and post test scores, which signifies a decrease in scores, highlighting the fact that students improved their speaking skills after completing the VR-mediated classes. 0.59372 is the standard deviation in the observed differences. This variability highlights the fact that the level of improvement is also dependent on individual factors as well. The p-value (.000) is less than the significance level (0.5). The low level of p-value provides strong basis against the null hypothesis. Overall, we can notice, that a-8-week VR classes positively impacted students' speaking skills.

Discussion

Research Question 1: The findings of our research clearly illustrate that the levels of accuracy and fluency after the application of Mondly VR-powered application vary among students. This could be related to many factors: language proficiency, learning habits, study skills, individual learning differences, prior knowledge, familiarity with the vocabulary, task complexity, individual cognitive load, etc.

These factors play a critical role in language acquisition. Hence, the different levels of accuracy are mainly related to the usage of complex language structures in different communicative scenarios.

Students who obtained high scores in and after VR lessons may have certain learning strengths: the ability to employ linguistic structures and language expressions in certain contexts, strong comprehension skills, vocabulary memorization drills, and so forth. These students tend to demonstrate higher level of confidence and proficiency while interacting in English. Language proficiency can be one of the factors determining students' academic performance (Azkiyah, n.d.).

While, students with relatively low scores may undergo numerous challenges such as: comprehension issues, poor vocabulary, uncertainty in applying complex linguistic structures in different communicative contexts, etc. These shortcoming might be related to learners' lack of practice, limited exposure of the target language, and so on. Aina et al. (2013) revealed that students with a low English proficiency could not achieve higher scores in content areas which can be related to many factors (Aina et al., 2013).

And finally, the accuracy level observed in and after VR-powered classes might be linked to the complexity of the task, as well as levels of engagement. The results indicated that task complexity affected learners' anxiety levels and was

detrimental to their L2 speaking fluency, pronunciation accuracy, and accentedness (Mora et al., 2023).

Lessons with relatively high level of accuracy rates may contain more familiar topics to students, whereas lessons with low levels of accuracy may include challenging topics, which, in turn, can decrease learners' inner motivation.

To sum up the findings of this discussion, it should be highlighted that incorporating learner-centered individual tasks in EFL speaking classes can create an inclusive and positive environment, maximizing the outcomes of foreign language enhancement, however, the outcomes vary from student to student.

Research Question Q 2: By analyzing the mean scores of pre and post-tests, it is obvious that the application of the 8-week VR classes positively influences speaking assessments among middle school students. Many students upgraded their levels from A2 to B1 and B1 to B2. However, the mean scores of two students with insufficient differences (0.0002, 0.0000) raise some questions. Numerous internal and external factors and circumstances could influence learners' ability to demonstrate progress in improving speaking skills in the 8-week VR classes period, such as health issues, social anxiety or shyness on making mistakes, mental load, psychological pressure by the excellence of the other participants, criticism and stress from family members, lack of readiness, miscomprehension of the task questions, and so on (Grieve et al, Aydin et al., Alrasheedi, et al., 2020). Most Chinese students have a high anxiety while taking speaking assessments (Jiang, 2023).

Generally, students maintain test anxiety due to some factors: fear of being judged by other classmates or parents, losing face in class, physical problems, etc.

Therefore, student-participants who obtained the same level before and after post-test might be influenced by these factors as well.

On the other hand, the other five students in the same subgroup who were tested as A2 level before completing the VR classes, demonstrate a notable improvement in their speaking skills. Undoubtedly, practice drills and the exposure of authentic language played a crucial role in the improvement of students' speaking skills. 8 students with a pre-test B3 level made a notable progress to B4 level. The low variability of the mean scores of these students points out the uniformly impact of VR application for B1 level students. Generally, VR classes are highly interactive enabling students to have unlimited practice opportunities. Both studies conducted by Azir et al., (2024) and Muhammad, (2023) emphasize 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 speaking. Virtual reality has a medium-large positive effect on students' learning gains (Villena-Taranilla et al.,2022). Besides that, VR

classes allow learners to improve their language skills at their own pace. Overall, the application of VR-powered applications in ESL classroom for improving speaking skills is highly effective, as it provides an environment for language exposure and practice opportunities.

Conclusion

The core objective of this study is to examine the significant efficacy of virtual reality technology, namely the Mondly VR-powered platform, in improving the speaking proficiency of ESL learners. By immersing students in real-life conversational scenarios, VR-powered technology creates an interactive and stress-free environment that fosters both fluency and accuracy. The comparative analysis of participants' speaking performances before and after the application of VR-powered tool uncovers substantial improvements in learners' communicative competencies, highlighting the importance of technology-driven approaches in language education and pedagogy. The findings of our research paper illustrate that VR-powered learning not only supports language skills development but also fosters learners' intrinsic motivation, autonomy and self-confidence in applying English in real-world contexts. Therefore, the incorporation of VR technology should be considered as a strategic innovation in ESL teaching instructions. Future research should focus on revealing long-term impacts, feasibility, and implementation across diverse educational layouts to fully evaluate the transformative potential of VR-supported immersive language learning technologies.

The present research is also marked with certain drawbacks: namely relatively limited amount of participants and homogenous demographics. Hence, the outcomes may not apply to more diverse groups with different linguistic, racial, etc., backgrounds, and in different educational settings. Therefore, future studies, with a focus on diverse samples, will enable us to get a comprehensive understanding of the issues under investigation. Moreover, analyzing students' insights based on qualitative data analysis would provide more accurate and precise understanding of the impact of VR-powered language learning in developing students' speaking skills.

Conflict of interests
The authors declare no ethical issues or conflict of interests in this research.

Ethical standards
The authors affirm that this research does not involve human subjects.

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MONDLY VR-Ի ԻՆՏԵԳՐՈՒՄԸ ԱՆԳԼԵՐԵՆԻ՝ ՈՐՊԵՍ ՕՏԱՐ ԼԵԶՎԻ ՈՒՍՈՒՑՄԱՆ ՄԵՋ. (ՉԻՆԱՍՏԱՆԻ ՄԻՋՆԱԿԱՐԳ ԴՊՐՈՑԻ ՕՐԻՆԱԿՈՎ)

Գևորգ Գրիգորյան
Նինգ Հուեյչուն
Նաիրա Գասպարյան

Սույն հետազոտությունը նպատակաուղղված է բացահայտելու վիրտուալ իրականության հիմքով ստեղծված Մոնդլի հարթակի արդյունավետությունը անգլերենը՝ որպես օտար լեզու դասավանդելու գործընթացում: Ուսումնասիրությունը իրականացվել է Չինաստանի ժողովրդական հանրապետության միջնակարգ դպրոցում՝ կիրառելով խառը մեթոդաբանություն, որը ներառում է քանակական տվյալների վերլուծություն և իրավիճակային-փաստարկային քննություն: Արդյունքները ցույց են տալիս, որ վիրտուալ իրականությամբ

միջնորդավորված հարթակներով ուսուցումը էապես բարելավում է սովորողների խոսքի սահունությունն ու ճշգրտությունը, և բարձրացնում է ներգրավվածությունն ու մոտիվացիան: Հետազոտությունը հաստատում է, որ Մոնղլի վիրտուալ հարթակի ինտեգրումը կարող է արդյունավետ և նորարարական գործիք լինել օտար լեզուների դասավանդման գործընթացում:

Հիմնաբառեր՝ *վիրտուալ իրականություն, բանավոր խոսքի հմտություններ, Մոնղլի հարթակ, հաղորդակցական իրազեկություն, ճշգրտություն, սահունություն:*