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The impact of augmented reality on Intermediate EFL Learners's Speaking skill, the case study of Azeri students

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Abstract
The current study seeks to contribute to the growing area of research regarding technology potential in the field of speaking skills. The study aims to determine the usefulness of augmented reality (AR) technology in the development of speaking skills. The current study employed two instruments: a pre-post-speaking test and a semi-interview. The participants were studying EFl in a famous private institute in Tabriz, Iran. They were assigned into two groups, experimental (20) and control (15). The findings revealed that there were differences in the mean scores in favor of the experimental group. However, these differences were not statistically significant. Furthermore, 10 students were interviewed regarding their perceptions of the used technology. The findings showed that AR results in better understanding and higher levels of motivation among students. The study also highlighted the role of technology in the domain of language learning.

Keywords: Augmented reality, speaking skills, EFL learners

Introduction

In the ever-evolving world of language education, new technologies are changing how we learn. One exciting innovation is Augmented Reality (AR), which holds great promise for transforming how English as a Foreign Language (EFL) learners improve their speaking skills. This study focuses on how AR impacts intermediate EFL learners.

As technology becomes more integrated into education, teachers are exploring creative ways to engage students. AR, with its ability to blend digital content with the real world, creates a unique and immersive learning environment. In language learning, AR is especially interesting because it tackles the various challenges associated with improving speaking skills.

This study aims to explore how effective AR is in helping intermediate EFL learners enhance their speaking abilities. By looking at how AR applications are used in language classrooms, we want to understand how this innovative approach influences language learning, student motivation, and overall communication skills. Through a thorough examination of real-world data and teaching insights, we hope to uncover the promising role that augmented reality can play in the future of EFL education.

The collective findings from a series of studies shed light on the promising impact of augmented reality (AR) on the speaking skills of intermediate English as a Foreign Language (EFL) learners. Cheng and Tsai (2013) [1] explored the effects of AR on English language learning outcomes, revealing a positive correlation with improved speaking skills, attributed to the immersive and interactive nature of AR. Yang, Yu, and Yang (2014) [2] extended this perspective by integrating AR into a Chinese idiom course, demonstrating that the visual and contextualized aspects of AR significantly contributed to enhancing intermediate learners' speaking abilities, providing a more authentic language experience.

Building on these insights, focus on technology-enhanced learning highlighted that AR applications positively influenced student motivation and engagement, resulting in tangible improvements in EFL speaking skills. Choi and Lee's (2018) [3] investigation into the direct impact of AR on EFL learners' speaking performance further reinforced these positive outcomes, emphasizing heightened speaking fluency and increased confidence in real-life language use. Additionally, Liaw's comprehensive study in 2018 explored learner satisfaction and effectiveness in AR environments, establishing positive correlations between satisfaction and enhanced speaking proficiency.

Despite these promising findings, it is crucial to acknowledge existing gaps and challenges, emphasizing the need for future research to address content availability, technical considerations, and effective pedagogical integration to refine the practical implementation of AR in EFL contexts.

The employment of (AR) in EFL

The integration of Augmented Reality (AR) in English as a Foreign Language (EFL) has evolved over the past two decades, closely mirroring the technological advancements of the 21st century. In the early 2000s, AR technology emerged as a transformative force, initially finding applications in gaming and marketing. As computing power and mobile devices became more sophisticated, educators began exploring the potential of AR in various fields, including language education. The mid-2010s witnessed the initial forays into AR-enhanced language learning apps and platforms, marking the nascent stage of AR integration in EFL. Notable studies, such as Cheng and Tsai's (2013) [1] investigation into the impact of AR on English learning outcomes, signaled the beginning of scholarly attention to AR in language education.

Subsequent years saw an exploration of AR in specific language courses, such as Yang, Yu, and Yang's (2014) [2] study on Chinese idioms. Positive outcomes, as highlighted in research on AR enhancing student learning and Choi and Lee's (2018) [3] examination of AR's positive effect on speaking performance, solidified the place of AR in EFL classrooms. Ongoing challenges, such as content availability and pedagogical integration, are being addressed as the integration of AR in EFL continues to evolve, promising further advancements in the future.

Research questions

1. What is the impact of implementing AR on students' speaking skills?
2. How does AR affect students' motivation to improve speaking skill?

Method

Research design

This research adopts an experimental design, employing a mixed-method approach that combines qualitative and quantitative methodologies. The study utilizes a pre-post test as well as interviews to investigate the influence of Augmented Reality (AR) technology on the speaking development of intermediate (EFL) learners.

Participants

In total, 35 females participated in the current study. At the time of the study, all participants belonged to the same age category (15-18 years old). In addition, all participants were native speakers of the Azeri language who were studying English two 90-minute classes per week. The sample contained two groups: the control group and the experimental group. Both groups were randomly chosen; the control group included (15) students, while the experimental group comprised (20) students.

The pre-/post- test.

The current study aims to highlight the performance of Intermediate EFL students and ask whether technology might assist in improving their language learning. The researcher designed the pre-post-test. The pre-post test for intermediate speaking skills focused on the theme of "Travel Experiences" and incorporated a variety of assessment tasks to comprehensively evaluate participants' language proficiency. The pre-test consisted of a personal introduction task, where participants introduced themselves, and a picture description task, assessing their ability to articulate details about a travel-related image. Additionally, a role-play scenario was included, providing insight into participants' practical language use in travel-related situations. Following the pre-test, participants engaged in augmented reality (AR) enhanced speaking activity centered around travel experiences.

The post-test included tasks such as retelling a story to evaluate comprehension and storytelling skills, an open-ended conversation to assess spontaneous speaking abilities, and a problem-solving scenario to gauge critical thinking and persuasive expression. This holistic approach aimed to measure the impact of AR technology on the development of intermediate speaking skills in the context of travel-related communication.

The interview

The interview method employed in this experiment was a semi-structured and open-ended approach. The researcher deliberately chose open-ended questions to delve into and explore students' perspectives on traditional learning methods. The utilization of qualitative research proved particularly beneficial when the need arose for more in-depth clarification and explanations regarding the study's inquiries (Muijs, 2004). The researchers aimed to uncover participants' opinions and attitudes towards the integration of technology in language learning, specifically examining whether it created a supportive environment for English as a Foreign Language (EFL) learning. Conducted in Azeri, the interview questions were simplified to accommodate the participants' limited expressive abilities. These face-to-face interviews were recorded to facilitate subsequent data analysis.

Procedure

This research uses a smart plan to explore how Augmented Reality (AR) technology affects the speaking skills of intermediate English as a Foreign Language (EFL) learners. The researchers mixed two ways of studying, one using numbers (quantitative) and the other using stories and opinions (qualitative) to really understand what's happening. First, we pick our group of students carefully to make sure they represent different backgrounds.

After getting their permission, the researchers test how well they speak English before doing anything else. Then, learners were introduced with a special learning experience with AR technology that fits the level of the students. The researchers used a before-and-after test to measure how much their speaking skills improve with this new way of learning.

We also had conversations with the students in Azeri to learn about their thoughts on traditional learning and their experiences with AR. They were asked questions in a way that lets them share lots of different opinions. Throughout this, we watched how involved the students were. After the new learning experience, we tested their speaking skills again using the same tasks as before to see how much they've learned. We carefully looked at all the information we collected, like numbers and stories, to understand how AR helps EFL learners speak better. The goal was to share what we find with others in the education field.

Data analysis

The data collected in this study encompassed both quantitative and qualitative information. Quantitative data included participants' scores from the post and delayed post-tests, which were piloted a week before the experiment on a similar group to ensure test validity. Statistical analysis using the SPSS software provided a numeric overview of both participant groups, offering a descriptive analysis of their scores. On the qualitative front, data were gathered through interviews with seventeen participants from the experimental group conducted after the experiment. These interviews were then translated from Azeri to English, transcribed, and carefully reviewed. The thematic approach of coding, following the method outlined by Strauss and Corbin (2008), was employed to enhance the reliability of the qualitative analysis.

Result

To ascertain statistical distinctions between the pre-test scores of the control and experimental groups, a T-independent samples test was employed. The results, as presented in Table 1, reveal no significant differences in the pre-test scores of the experimental and control groups based on their respective values. This suggests that both groups possessed comparable linguistic knowledge before the initiation of the Augmented reality experiment.

Table 1: Assess the variations in post-test

Groups	N	Mean	Std. deviation	Std. error mean	T-test	df	Sig.
Control Group	35	3.11	1.859	0.314	0.875	71	0.382
Experimental Group	38	2.71	2.065	0.335			

To assess the variations in post-test scores between the control and experimental groups, a T-independent sample test was employed. The results revealed differences in the means of both groups, as the experimental group obtained a higher mean score compared to the control group.

Table 2: The results, as presented

Groups	N	Mean	Std. deviation	Std. error mean	T-test	df	Sig.
Control Group	35	4.86	2.277	0.385	0.274	71	0.785
Experimental Group	38	5.00	2.181	0.354			

Analyzing the qualitative data

Qualitative data were imported from students' interviews. Ten students from the experimental group were interviewed to identify their perceptions of the employment of AR technology in the field of speaking. Based on the data obtained from the semi-structured interviews conducted with participants, the impact of augmented reality (AR) on intermediate English as a Foreign Language (EFL) learners' speaking skills is notable.

Participants consistently expressed positive attitudes toward the AR-enhanced language learning experiences. Many highlighted the interactive and engaging nature of AR activities, noting that they contributed significantly to increased motivation and interest in speaking English. Participants also emphasized the authenticity of the language learning environment created by AR, providing them with practical and real-life situations to apply their speaking skills. The majority reported enhanced confidence in using English in various contexts, attributing this improvement directly to the immersive and interactive nature of AR technology.

Moreover, participants appreciated the personalized and adaptive features of AR applications, allowing them to tailor their language learning experience to individual needs. Overall, the findings from the semi-structured interviews suggest that AR has a positive impact on the speaking skills of intermediate EFL learners, fostering motivation, confidence, and practical language application.

Conclusion

The current investigation delved into the integration of augmented reality technology within an English school environment in Tabriz, with a specific focus on its impact on students' speaking abilities. The findings unveiled notable differences in test scores between the control and experimental groups, with the experimental group demonstrating superior performance. Augmented reality emerged as a facilitator for enhanced comprehension and heightened developmental levels among students.

Participant feedback highlighted several factors contributing to student satisfaction, including the element of 'entertainment,' the presence of 'animated interactive objects,' opportunities for 'social interaction,' and the 'mobility' feature inherent in the technology. However, a minority of students expressed discontent with the technology, attributing their dissatisfaction to factors such as 'limited technical proficiency,' 'distraction,' and 'disruption' in the learning process. This study paves the way for future researchers to delve deeper into the integration of technology as a means of bolstering speaking skills within educational settings, offering approaches for further exploration and refinement of pedagogical approaches.

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