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Virtual and Augmented Reality: EBE

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Abstract: English has emerged as a prominent global lingua franca for business endeavors, inciting the development of technological innovations aimed at augmenting language acquisition within this realm. Both the scholarly and corporate communities have wholeheartedly embraced the assimilation of technology into the art of business communication. The prevailing epoch, characterized by the "new normal," presents a plethora of opportunities for non-native English speakers to attain proficiency in the language, particularly through immersive platforms such as Virtual Reality (VR). To uphold a competitive edge in the corporate milieu, ambitious individuals must diligently endeavor to refine their linguistic fluency and aptitude. In this milieu, learners can derive immense advantages from directing their focus towards acquiring business-specific English acumen. This research endeavor delves into the manner in which VR empowers learners to engage in business-centric scenarios, leveraging a pragmatic approach to maximize their vocational potential. A survey, employing a mixed-methodological framework, corroborates the efficacy of VR tools in ameliorating English communication proficiencies. The study elucidates how VR applications can cultivate learners' zeal and fervor while introducing an array of tools designed to augment Business English prowess.

***Keywords**: Virtual Reality, Business English. Language learning, techniques, Vocabulary Enhancement*

1. Introduction

English is widely regarded as a preeminent language in the realm of international business. To thrive amidst fierce competition in diverse business landscapes, individuals must enhance their proficiency in English. A strong command of the English language is a vital factor in securing lucrative employment opportunities. International organizations and multinational companies specifically seek individuals with a comprehensive understanding of English. This requirement extends to various market sectors such as travel guides, advertisement designers, and media managers, among others. In the realm of education, it is theoretically expected that educators employ teaching machines to develop students' ability to replicate transmitted information rather than fostering their creative problem-solving skills (Piaget, 1970). Learning a second language and achieving fluency is no easy feat, as learners must master all four language skills. Non-native English speakers often face significant challenges, including a limited vocabulary and hesitancy to engage in spontaneous conversations. The vast expanse of English vocabulary, replete with numerous synonyms, poses difficulties for learners striving to attain mastery. According to Lessard-Clouston (2013), 'vocabulary' encompasses not only individual words but also phrases and chunks of words that collectively convey meaning. Ensuring the absence of plagiarism, these insights highlight the multifaceted nature of vocabulary acquisition and its significance in language learning.

2. Background Work

Virtual reality (VR) is an immersive technology that transports learners into simulated worlds, offering a three-dimensional computer-generated environment that can be interacted with. Through VR, users can digitally position themselves in any location or imaginary scenario. One of the key aspects of VR is its interactive nature, allowing businesses to bridge the gap between physical and imaginary realms. Video games serve as captivating platforms for language learning and exemplify the potential of virtual reality. They push the boundaries of existing technology and make VR accessible to the general public. ELT practitioners and researchers are increasingly exploring the various applications of virtual reality (Hawkinson, Mehran, & Alizadeh, 2017).

By utilizing virtual reality, artificial environments are created through software, engaging the senses of vision and sound. This technology has proven to be highly effective in enhancing student learning and engagement (R., E. Wiarda, & M. Fleischer, 1990). VR education differs from traditional approaches as it capitalizes on the prevalent use of digital devices in today's educational landscape. By constructing virtual worlds, whether real

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or imagined, learners can interact with the content in personalized ways, promoting deep comprehension with reduced cognitive load. As Albert Einstein once said, "I never teach my pupils, I only attempt to provide the conditions in which they can learn."

Furthermore, VR in education offers the additional benefit of expanding students' exposure to various career paths. It enables learners to explore different fields of work and develop a better understanding of their own interests. In the new normal, VR has gained momentum, transforming not only education but also diverse industries, revolutionizing marketing strategies and approaches.

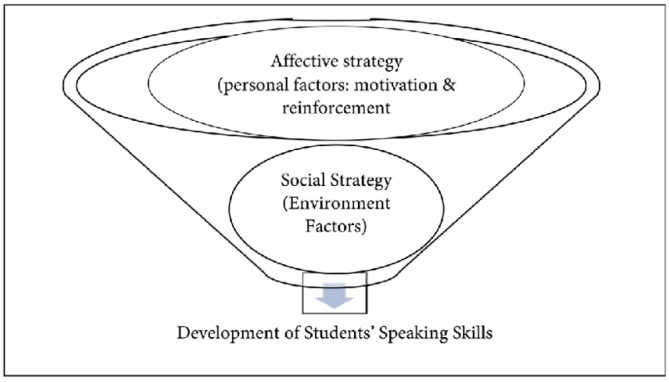

Fig.1: Conceptual frame work of development in speaking skills of tudent.

The above figure shows the conceptual frame work of language strategies to improve speaking skills with the help of speaking skills.

3. Augmented Reality (AR)

Augmented Reality (AR) is closely related to Virtual Reality, but it differs in the sense that it overlays digital information onto the real world. It enhances the visual representation of all human senses (Kipper, 2013). Instead of completely replacing the real world, AR supplements and reinforces it. Rendering virtual environments or elements for readers or learners necessitates specific hardware technologies. One indispensable component is the Head-Mounted Display (HMD), a device worn on the head or as part of a helmet. The HMD incorporates a small display optic positioned in front of one or both eyes.

Additionally, mobile devices have become increasingly prevalent. Handheld devices such as PDAs, tablets, and smartphones offer compact computing power (Keism & Ozarslan, 2012). The current generation of smartphones has surpassed these devices in terms of capabilities. High-end smartphones and tablets, particularly iPhones and iPads, come equipped with built-in AR hardware. This eliminates the need for users to carry multiple devices to experience AR technology. Learners can access virtual information directly on their device screens. Nowadays, approximately sixty percent of digital natives own smartphones or devices with these capabilities, although most of them primarily use them for gaming purposes. The ongoing pandemic has hindered learners from attending physical classrooms. While several technological tools facilitate virtual interactions, they often fail to engage students mentally. Students spend their time merely listening to or observing lectures without much interest. Animated content, such as fascinating facts, historical events or site reconstructions, and 3D models created with augmented reality, can pique students' curiosity. AR enables students to actively participate in activities assigned by teachers, making classroom work feel less burdensome and fostering a happier learning environment.

Augmented Reality can be described as a precursor to Virtual Reality, taking one step forward in its development. It seamlessly integrates digital data, such as sound and images, into the real world. It can also enhance all sensory perceptions, including visual experiences (Kipper, 2013). In order to present virtual content in the learners' physical environment, various advanced technologies play a crucial role. Among these technologies, the Head-Mounted Display (HMD) is prominent, as users can wear it on their heads or as part of a helmet, with a small optical display in front of each eye. On the other hand, handheld mobile devices like PDAs, tablets, and smartphones offer portable computing power (Keism & Ozarslan, 2012). However, the latest generation of smartphones has surpassed these devices. Modern high-end smartphones and tablets, particularly iPhones and iPads, come equipped with built-in AR capabilities. This eliminates the need for users to carry multiple devices and allows them to access virtual content directly on their devices. Nowadays, nearly sixty percent of digital natives possess smartphones or devices

with such features, although the majority primarily utilize them for gaming purposes

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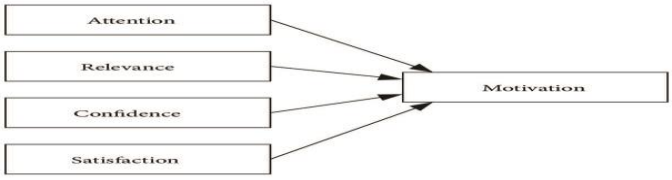


Fig.2: impact of AR application

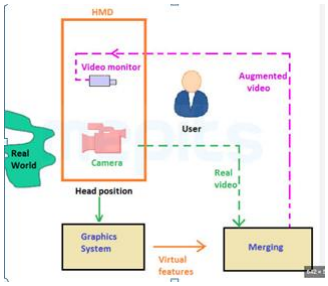


Fig. 3: Impact of AR in learning process

Figures 2 and 3 illustrates the impact of augmented reality applications on language learning and their ability to motivate learners. The ongoing pandemic has reshaped education, prompting innovative approaches to remote learning. Augmented Reality (AR) has emerged as a promising solution to these challenges by infusing interactivity and immersion into virtual classrooms. AR enhances engagement through interactive 3D models, real-world context, and personalized learning experiences. It bridges the gap between theoretical concepts and practical application, offering hands-on simulations, collaborative spaces, and adaptable content. AR's ability to make learning materials accessible, foster motivation, and prepare students for technology-driven futures positions it as a transformative tool in remote education. It addresses isolation, stimulates engagement, and provides dynamic, context-rich learning, overcoming the limitations of traditional online instruction. The current uncertain circumstances prevent students from attending physical classrooms. Despite the availability of various technological tools to support remote learning, these tools often fail to engage students' minds. Students merely go through the motions of listening and following lectures without much enthusiasm.

However, incorporating interactive and immersive content, such as captivating facts, historical information about events and locations, and visually stunning 3D models created using augmented reality, can capture students' interest in their daily routines. With the assistance of augmented reality tools, students can actively participate in diverse activities assigned by their teachers. This approach ensures that students do not perceive their coursework as a mere obligation but rather as an enjoyable and engaging part of their classroom experience.

Leveraging VR and AR for Advancing Business English Competence

Virtual reality (VR) and augmented reality (AR) tools offer learners the opportunity to immerse themselves in realistic business scenarios, allowing them to practice various skills such as team management and delivering keynote speeches at conferences. These technologies recreate authentic business situations, providing learners with a comfortable and realistic learning environment. The visual immersion and surround sound effects of VR and AR make learners feel as if they are truly present in the digital world, creating a sense of satisfaction (Agarwal, R., & J. Prasad, 1998). For instance, imagine a student or learner who needs to interact with individuals from different countries for business purposes, where language and cultural understanding are crucial. Using VR or AR technology, the learner can develop strategies and gain experience in navigating these interactions, enhancing their skills in a virtual setting that closely resembles the real world. The visual immersion and the incorporation of 360-degree surround audio tricks the user into perceiving the digital environment as if it were real.

Incorporating Virtual Reality (VR) and Augmented Reality (AR) into education offers immersive and personalized learning. Learners engage with interactive content that aligns with their digital habits, reducing screen fatigue. Practical skills like communication and collaboration are honed in simulated scenarios. These technologies bridge real-world applications and theoretical concepts, fostering critical thinking. students also benefit from instant feedback and assessment. Additionally, VR and AR prepare students for modern workplaces, promote inclusivity, and motivate lifelong learning. Challenges include initial costs and technical expertise. Striking a balance between digital and real experiences is crucial. Preparation of students for modern workplaces plays a crucial role at business communication specially, in learning English.

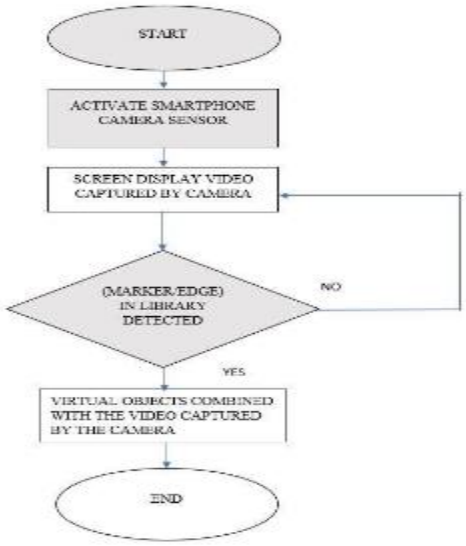


Fig.4: Working process of Augmented Reality

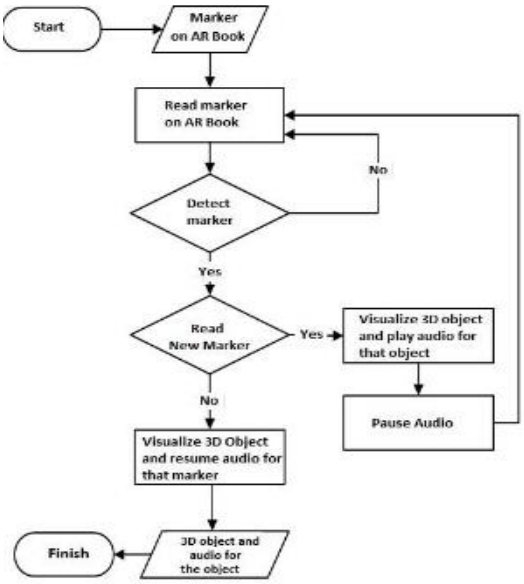


Fig.5: use of Augmented Reality system

Figures 4 and 5 provide a clear depiction of how learners can practice various situations, comprehend their roles, and actively participate in meetings with increased confidence. Additionally, these tools aid in the development of communication skills and foster an understanding of language and culture. Voice analysis technology can also offer learners with valuable feedback on their speaking pace and tone, surpassing the effectiveness of conventional methods such as practicing in front of a mirror.

The integration of virtual reality (VR) into education aligns with constructivist learning theory, which views learning as an active and contextualized procedure of knowledge creation. Unlike older theories like behaviorism, constructivism emphasizes the learner's active role in constructing their own understanding and validating it through social negotiation (Ertmer & Newby, 1993). With VR, there is a unique immersion that closely mirrors reality, eliminating the gap between the learner's consciousness and the medium itself. In VR, the learner is not merely interpreting the medium; they become internalized within it. This groundbreaking characteristic of VR as a medium was highlighted by Chris Milk, the founder of VRSE, known for its immersive video experiences created using virtual reality technology.VR provides learners with an unparalleled level of immersion and engagement, allowing them to practice and develop essential skills while bridging the gap between virtual and real-world experiences.

Utilizing VR and AR Tools for Enhancing Speaking Skills in a Business Environmnet

The app 'Public Speaking VR' offers learners a platform to follow public speaking skills by simulating photo-realistic situations. This immersive environment allows learners to experience similar settings and audiences, enabling them to identify and address distractions that may arise while speaking. To use the app, learners need to current a topic and upload their presentation. This also analyzes pitch, intonation, and voice characteristics, providing valuable feedback for improvement. Learners can take multiple tests and practice sessions using the app until they achieve proficiency. These simulated situations help learners deliver their presentations with confidence, particularly when explaining product details. Furthermore, learners can enhance their pronunciation skills through this app, which facilitates faster development of their speaking abilities. Other VR-based apps such as 'Ummo,' 'Like so,' 'Speak app,' and 'Samsung Befearless' have also been developed to assist learners using VR technology.

Augmented Reality glasses, learners can choose different audiences for their practice sessions, creating a tailored environment for improving their speaking skills.

In the business realm, VR technology has revolutionized the interview process, especially during the ongoing pandemic. Many companies now conduct interviews using VR as a primary medium. Candidates are provided with a link to log in to the virtual interview platform, where a virtual conference room is created. This allows interviewers to ask questions, observe the interviewee's body language, and receive responses. Major organizations are increasingly adopting this technology to facilitate various interviews and discussions.

The benefits of virtual reality extend to the e-commerce sector as well. VR has introduced new dimensions to professional business practices, and trainers in this field are leveraging the technology extensively. Learners can explore virtual rooms, interact with online participants, and adapt to different scenarios more easily and quickly. Clear visualization of projects is crucial in the business environment, and VR allows learners to design and view

structures without wasting time and resources. Augmented Reality also offers a wide range of applications for learners to interact with the real world, making it valuable for architects, engineers, and individuals involved in architectural planning. Additionally, virtual tours of properties have become possible, benefiting the real estate industry. Builders can provide clients with virtual tours, enabling them to visualize the property and make informed decisions without delays.

The 'VR Scenario' app centers around impromptu speaking skills. It utilizes diverse business-related presentation slides that transition every thirty seconds, challenging learners to improve their quick-thinking abilities. Participants are required to visualize each slide and articulate their thoughts accordingly, allowing for an assessment of their English speaking skills during the speech. Immediate feedback is provided to aid learners in comprehending their mistakes and practicing for improvement. To delve into the mentioned benefits, a sample study was conducted with a cohort of one hundred students.

4. Methodology

The research paper employed a quantitative methodology to examine the effects of virtual and augmented reality applications on business English skills and their potential to confer a competitive advantage. The study utilized a survey-based approach, designing a structured questionnaire to collect data from a diverse group of professionals across various business sectors. The questionnaire encompassed items that assessed participants' usage of virtual and augmented reality applications for language learning, their perceived improvements in business English skills, and their perception of the competitive advantages facilitated by these technologies. The collected data underwent rigorous analysis utilizing statistical techniques such as descriptive statistics, correlation analysis, and regression analysis. These analytical tools were employed to explore the relationships between variables and ascertain the degree to which virtual and augmented reality applications contribute to enhancing business English proficiency and securing a competitive edge. The quantitative findings derived from this research furnish valuable insights into the effectiveness of virtual and augmented reality technologies in fostering business English skill development, as well as their potential impact on attaining a competitive advantage in the corporate landscape.

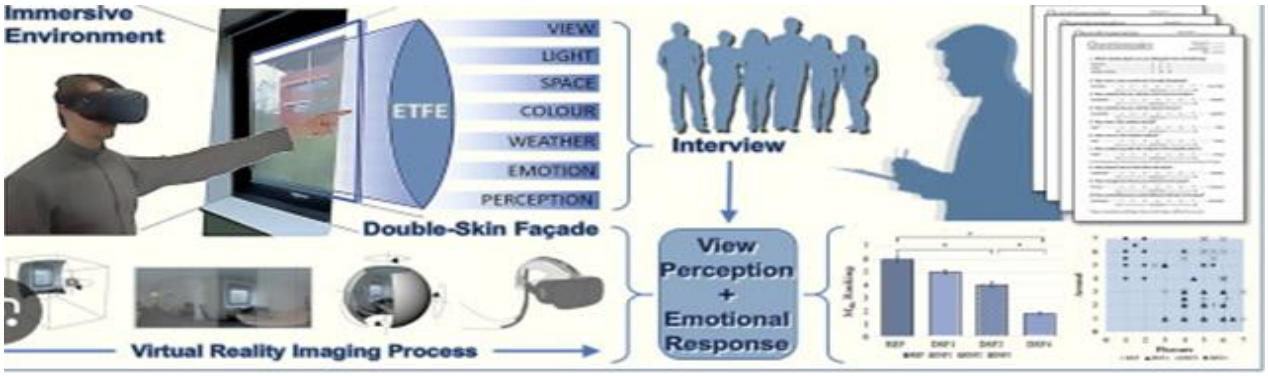


Fig: 6 Virtual and Augmented Reality analysis process

5. Results and Discussion

A total of one hundred and fifty students participated in this research, with random allocation into two equivalent groups: Group A and Group B. Both groups engaged in a week-long training program aimed at enhancing business communication skills, with a specific centered on speaking. Notably, Group A underwent training primarily through conventional oral discussions, without the incorporation of virtual reality (VR) and augmented reality (AR) technologies.

In the comprehensive assessment conducted in the final week, Group A students demonstrated a commendable 30% improvement in their assigned speaking tasks, while Group B exhibited a more significant 60% improvement. Impressively, approximately 70% of the students found the course to be satisfactory and valuable.

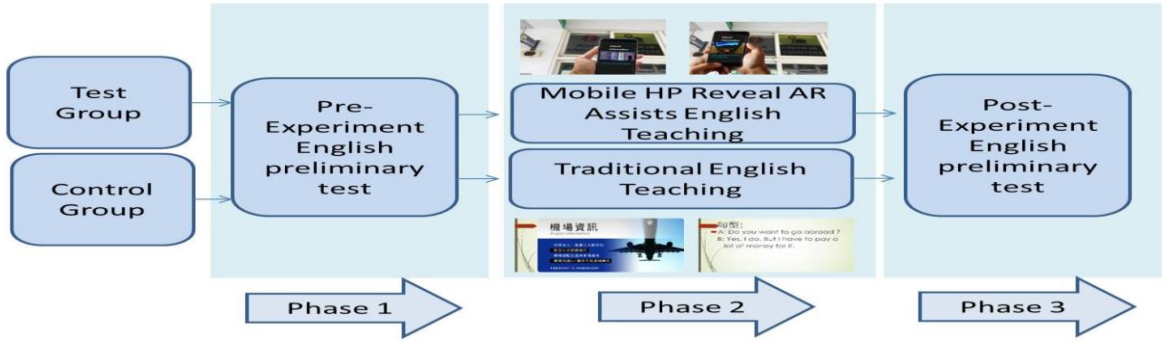


Fig. 7: The research program incorporated the use of a Mobile AR app.

Table 1: Learner Group Information

S.No	Group A	Group B	Total
1	73	77	150

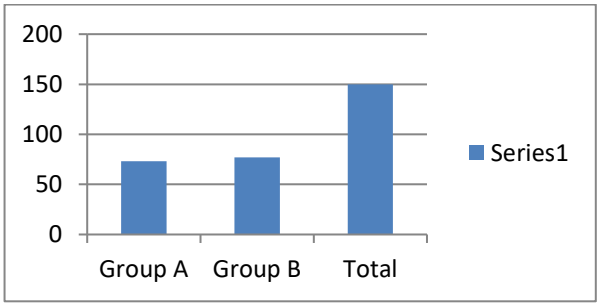
Table 2: Number of Male and Female Learners

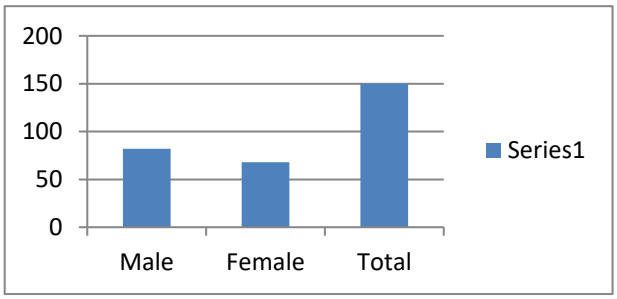
S.No	Male	Female	Total
1	82	68	150

Table 1 provides details on the student count in the intervention program, assessing the effectiveness of the tools in improving targeted learning outcomes. The distribution shows that Group A had 73 students, Group B had 77 students, with a total of 150 participants.

Table 2 presents the gender distribution among the learners, indicating that out of the total 150 students, 82 were male, and 68 were female. This information is consistent with the data presented in Table 1.

During the training period, students were exposed to various scenarios such as simulated employee conversations, chairing meetings, business networking, interview question responses, delivering presentations, impromptu speeches, and participating in managerial group discussions. It is also crucial to provide relevant reading material that contributes to expanding vocabulary within the business domain. The cognitive process of reading online text has been the subject of several studies, highlighting the non-linear nature of reading in hypertext through Virtual and Augmented Reality tools, as opposed to the linear progression associated with traditional text reading methods. The seamless transition between different texts is facilitated, allowing for a more flexible and interactive reading experience.





A comprehensive assessment was carried out in the final week of the guidance, and learners were requested to provide questionnaire. Group A students exhibited a 30% improvement in their assigned speaking tasks, whereas Group B showed a notable 60% improvement, demonstrating confidence in their speaking abilities and utilization of field-specific vocabulary. The feedback received indicated that 70% of the learners initiated the course satisfactory and valuable. They expressed the belief that Virtual Reality and Augmented Reality activities could enhance their confidence and communication skills. Also by the end of this stipulated time, i.e. the last week's assignment Group B managed to display a significant enhancement in their speaking skills in contrast to Group A due to their training that incorporated a variety of VR and AR tools for

activities such as oral presentations, impromptu speaking, and group discussions.

Therefore, the hypothesis was supported, suggesting the increasing significance of VR and AR technologies in the future. While the gaming industry has already embraced these technologies, their potential extends beyond this realm. Several educational institutions have already implemented VR and AR, and their utilization is expected to grow, benefiting a larger number of students.

6. Conclusion

This study establishes the effectiveness of utilizing Virtual Reality and Augmented Reality for teaching and learning business communication skills in English. It serves as an exploration of various pedagogical tools and applications to enhance communication skills in diverse business contexts. Future research could involve a larger participant pool with varying levels of English proficiency to further investigate the preference for Virtual and Augmented designs across different contexts, while also examining the factors influencing collaboration in various activities. Given the prevalence of screen reading in today's society, especially among the younger generation, integrating Virtual Reality and Augmented Reality into education at all levels proves beneficial. These tools offer motivational aspects and align with the dependency on smartphones among young trainers. The adoption of VR and AR in business communication skills training provides learners with optimal opportunities for improving their communication abilities.

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