

Virtual and Augmented Reality: Empowering Business English for Competitive Advantage

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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.

Key words: Virtual Reality, Business English. Language learning, techniques, Vocabulary Enhancement

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.

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

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from traditional approaches as it capitalizes on the prevalent use of digital devices in today's educational landscape. By constructing virtual worlds, whether real 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.

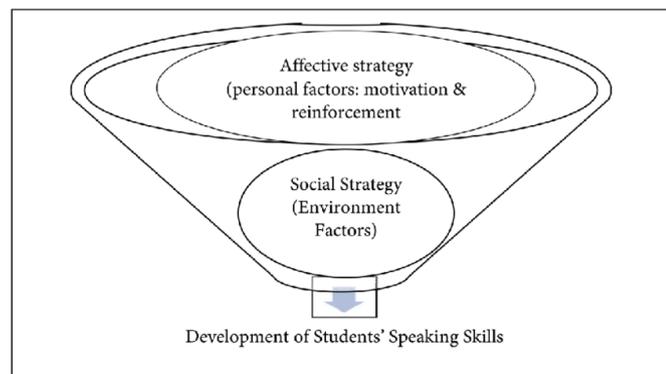


Fig.1: Conceptual frame work of development in speaking skills of student.

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

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. The display of virtual environments or elements to readers or learners requires certain hardware technologies. One crucial item is the Head-Mounted Display (HMD), which users wear on their heads or as part of a helmet. The HMD features a small display optic 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

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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 & Ozarlan, 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.

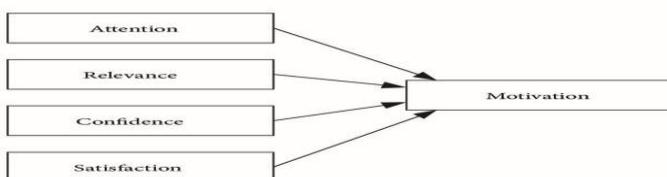


Fig.2 : impact of AR application

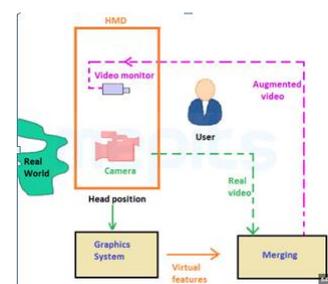


Fig. 3: Impact of AR in learning process

Figures 2 and 3 illustrate the impact of augmented reality applications on language learning and their ability to motivate learners. 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, 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.

Role of VR and AR in improving Business English

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.

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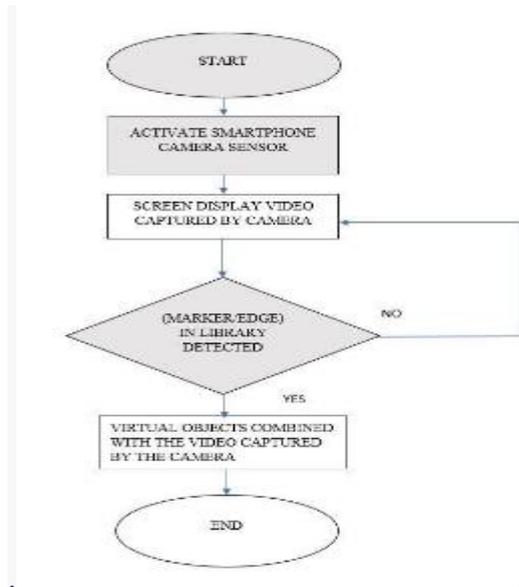


Fig.4 Working process of Augmented Reality

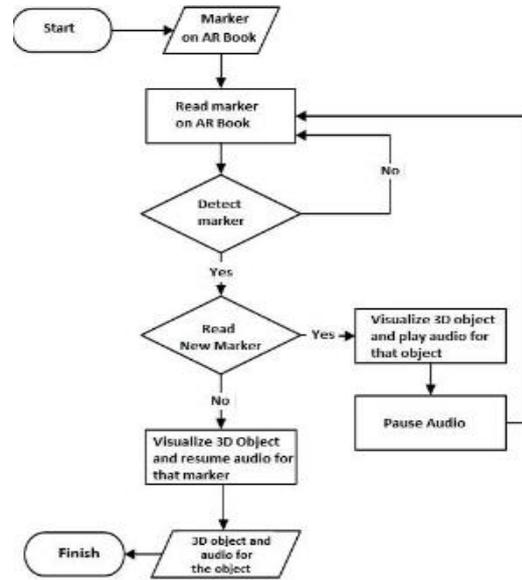


fig.5: use of Augmented Reality system

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 provide 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 process of knowledge construction. 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.

Speaking skills practice for business environment using VR and AR tools

The app 'Public Speaking VR' offers learners a platform to practice 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 present a topic and upload their presentation. The app 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.

Another app, 'SpeakEZ-AR,' focuses on helping learners overcome their fear and unease with public speaking. By wearing 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.

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The app 'VR Scenario' focuses on impromptu speaking skills. By using various business-related presentation slides that change every thirty seconds, learners can enhance their quick thinking abilities. They must visualize the slide and speak accordingly, while their English speaking skills are assessed during the speech. Immediate feedback is provided to help learners understand their mistakes and practice for improvement. To explore the benefits mentioned above, a sample study was conducted with a group of one hundred students.

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.

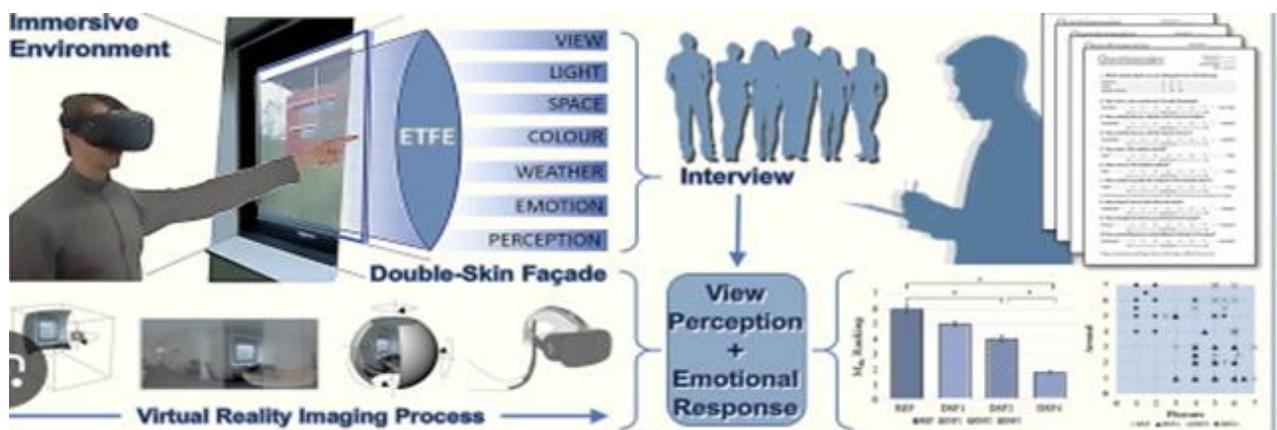


Fig. 7: A tool for evaluating learner acceptance of view using Virtual and Augmented Reality

Results and Discussion

A total of one hundred and fifty students participated in this study and were randomly assigned to two equal groups, namely Group A and Group B. Both groups underwent a week-long training program focused on enhancing business communication skills, with particular emphasis on speaking. Group A received training that primarily involved conventional oral discussions without the use of virtual reality (VR) and augmented reality (AR) technologies. In contrast, Group B received training that incorporated a variety of VR and AR tools for activities such as oral presentations, impromptu speaking, and group discussions. Following the completion of five weeks of intensive training utilizing VR and AR technologies, data collection was conducted, and the students' perceptions were subsequently analyzed and interpreted.

Figure 1:

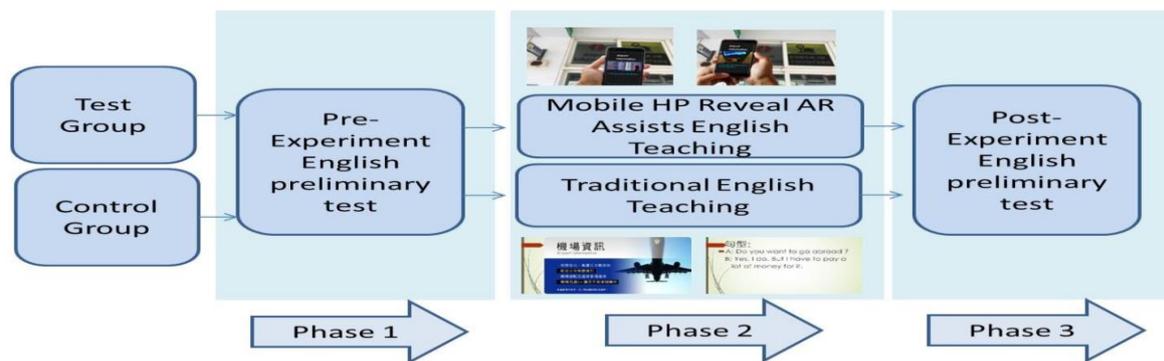


fig. 6: Mobile AR app has used in the research programme.

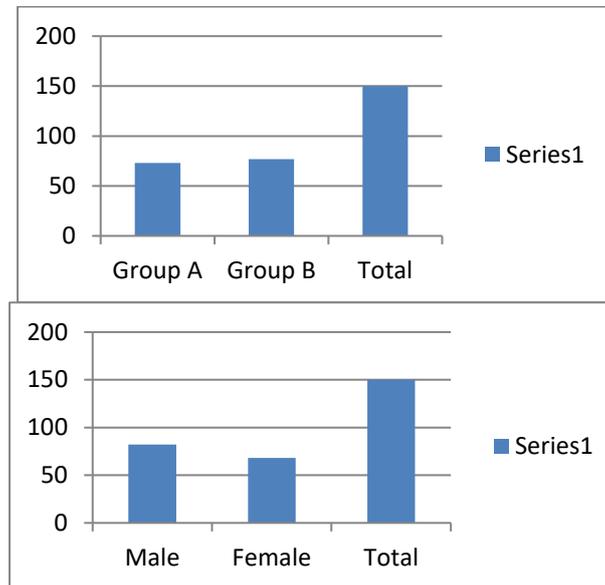
Table 1: learner group information

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

The table 1 specifies the number of students considered for the intervention program to test their whether tools used would be able to improve the required learning outcome. In this procedure eighty two students were male and the remaining sixty eight were female. The same information also provided in the form of table 2.



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 conducted in the final week of the training, and students were requested to provide feedback. 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 students found the course satisfactory and valuable. They expressed the belief that Virtual Reality and Augmented Reality activities could enhance their confidence and communication skills. 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.

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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