

Research Article

Practice of Artificial Intelligence and Virtual Reality Technology in College English Dialogue Scene Simulation

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English is regarded as one of the most important business languages in the world. Various technologies have been developed to aid language acquisition in this field. The academic and corporate worlds are both responding favorably to technology intrusion in business communication abilities. The new normal condition is presenting a plethora of options to study a language, particularly English for nonnative speakers, using one of the immersive platforms, virtual reality. Striving people must improve their fluency and proficiency in order to stay competitive in the commercial sector. Learners might benefit from considering business-specific English in this situation. The research examines how virtual reality (VR) allows learners to experience business-related situations in a hands-on manner. It also addresses scenarios in which learners might maximize their professional potential. A mixed methodology study demonstrates how virtual reality technologies may be used to enhance English communication abilities. It discusses how different VR applications may pique learners' attention and passion, as well as several strategies for improving Business English.

1. Introduction

It is a new field, but it is gaining ground. The value of an original piece of art often exceeds that of a copy or digital file. Easy to start and run with a wide range of possibilities for further exploration and innovation. An artist's work is interpretive, meant to arouse a response in the viewer's emotions and intellect in accordance with what the artist believes. A good piece of art never fails to leave you speechless. The use of engaging images in advertising may boost a brand's visual identity and inspire people to make purchases. Because of this, artists and other creatives may now learn about the potential of electronic art more easily. To do this, you will need a variety of different kinds of creative abilities and resources. As well as being the fundamental training—technical abilities with a thorough understanding of both science and art—it utilizes computer-related software and design tools to develop and produce artworks.

Virtual reality is a kind of expression, a medium of art communication, and an interactive medium style when it is combined with digital media art. Virtual reality technology allows users to finish this interactive art form via the

use of digital media art. As a result, this combination reduces the gap between the experience of the work of art and the information conveyed by the artist. Digital media artists often use dynamic visuals as the basis for their work. Sophisticated sensing devices are able to gather and react to data signals such as head movements and even ocular rotations in order to allow the user to participate in the whole interaction process. Data may be gathered from a wide range of sensors, including those that measure hydraulics and other fluids, as well as those that are electromagnetic, optical, auditory, inertial, or hybrid in nature, a wearable sensor-based technology that use a variety of classification algorithms to identify autistic movements.

The suggested system defines, monitors, and categorises certain gestures. Linguistic information is made simpler to comprehend by using these techniques. They emphasise our perspective and manage the flow of discourse.

With his simulation of physical reality, Devin Link initially attempted to create a flying model simulator and was able to fulfil the dreams of many individuals who want to fly. Motorcyclist Morton Heyliger created a simulator that replicated the sensation of riding a motorbike around

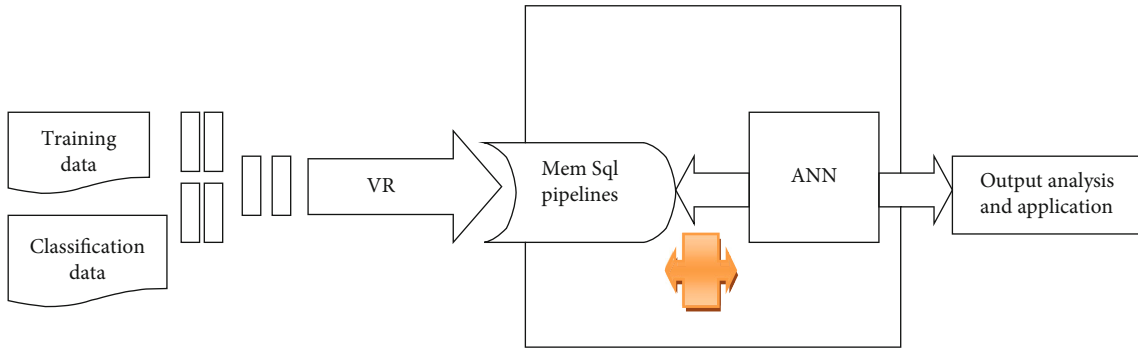


FIGURE 1: Block diagram.

Manhattan. It is a metaphor in the truest sense. Ivan Suzelan created a helmet-mounted display in 1968 that could show three-dimensional computer pictures and monitor the user's head movement. We call it the Sword of Damocles. The user has touched the handle, despite the fact that it is rather big. Interacting in the application sector of aviation in the 1980s, virtual reality technology was implemented with amazing success in the United States. Major corporations started to create virtual reality technologies in the 1990s, particularly in hardware. Virtual reality headsets have also been created by firms, creating a surge of commercialization of the technology. Virtual reality has come a long way since its inception in the 1990s. It has been possible to constantly increase computer hardware rendering effects, display resolutions, and the human-computer interface system via ongoing innovation and development. As a result, virtual reality gadgets have become more adaptable, and user experience has improved. A wide range of areas, including education, business, culture, and the arts, has already benefited from virtual reality gadgets.

In the same way that traditional art and computer algorithms are distinct, digital media art is likewise different. It is a mix of the two, in a way. As a result, three distinct virtual reality technologies are used in this study to mobilise students' characteristics in various areas, and exploratory experiments are conducted on these teaching approaches and compared to standard teaching methods. Analysis of our experiment's outcomes is based on student scores and subjective evaluations.

2. Literature Survey

When art was first discovered, humans were limited to seeing it with their eyes. Virtual reality technology, on the other hand, has made it possible for individuals to see aspects of art that they previously could not see. In fact, it manages to create an illusion of realism that is not based on anything actual. New windows are opened for humans to perceive the environment using diverse artificial intelligence technologies, making the human experience raised to a new level.

Both digital media art production and artificial intelligence technologies have a mutually beneficial effect on one another. Virtual reality technology's artificial intelligence

TABLE 1: Sample data.

| Age range | Man | Woman | Total |
|-----------|-----|-------|-------|
| ≤17 | 9 | 11 | 20 |
| 18 | 15 | 22 | 37 |
| 19 | 4 | 3 | 7 |
| ≥20 | 2 | 1 | 3 |
| Total | 30 | 37 | 67 |

Note: $\chi^2 = 0.591$; $P = 0.623$.

implementation has improved as a consequence of these procedures and produced superior results [1]. It is also proposed to use visual saliency to improve the efficiency of retrieving information. Using this method, the visual pattern may be clearly labelled, and the baselines for various circumstances can be established [2]. Finally, research published in literature [3] looks at how to determine the optimal picture compression ratio for fingerprints, in particular, in order to better permit the identification of the system. It is also possible to offer an encryption system for four images processed holistically using quaternion algebra, which reduces the likelihood of correlation weaknesses and increases security.

Using virtual technology in cinema and television advertising has been around for a long time, particularly in industrialised nations like the United States. People may view anything that exists in virtual form on a computer screen. Technology in virtual worlds has almost reached the level of international roaming in the US [4]. It has a large number of researchers and, as a result, many successful products that make use of virtual reality technology.

According to Bin et al. [2019], a combination of curricular theories, review of related literature, and on-the-ground inquiry was used to explore the potential impact of AI in middle school English courses. Artificial intelligence (AI) will be used to aid in the instruction of college English as part of this strategic objective. The English education system is enhanced and given a more personal touch when English instruction is added. Improvements to English training via the use of AI are now being studied [5].

According to Pan et al. [2021], vivid situations, immersive learning environments, and visualising abstract information are just a few of the benefits of using virtual reality (VR) technology. From four viewpoints, this research

| | |
|--|---|
| Step: 1 start the process. | |
| Step: 2 Assign the VR English dialogue samples. | $s(x) = 1/1 + e^{-x} = e^x/1 + e^x.$ |
| Step: 3 estimate College English | $h^1 = S(V^{(0)T}W + a)$ |
| Step: 4 find Dialogue scene | $V^{(1)} = S(h^{(1)}W^T + a)$ $p(h^{(1)} V^{(0)}; W)$ $p(V^{(1)} h^{(1)}; W)$ $p(v, h)$ |
| Step: 5 filter the statements | $E(v, h) = -\sum_{i \in \text{visible}} a_i v_i - \sum_{j \in \text{hidden}} b_j h_j - \sum_{ij} v_i h_j w_{ij}$ $\Delta w_{ij} = \alpha (\langle v_i h_j \rangle_{\text{data}} - \langle v_i h_j \rangle_{\text{model}})$ |
| Step: 6 ANN-based VR analysis | $CD_k(W, v^{(0)}) = -\sum_h p(h v_k) (\partial E(v_k, h) / \partial W) + \sum_h p(h v_k) (\partial E(v_k, h) / \partial W)$ |
| Step: 7 stop the process | |

ALGORITHM 1: VR ANN.

examines how VR and English instruction are evolving. Virtual reality (VR) technology has the potential to improve language instruction and foster new ways of teaching English [6].

According to Luo et al. [2020], when it comes to teaching materials, cultural communication, and assessment, traditional foreign language instruction falls short of meeting the unique learning demands of each student. Using artificial intelligence in foreign language instruction may alleviate many of the drawbacks of traditional methods, such as a lack of time, space, or resources and a tedious assessment process. This study concludes by proposing a concept for an interactive platform for teaching foreign languages and by introducing the platform's fundamental artificial intelligence technology [7].

According to Shorey et al. [2019], to start preparing student nurses for their clinical settings, researchers created and evaluated virtual patients (VPs) that they could engage with. Development of VPs for teaching nursing student communication skills may lead to authentic learning environments that boost students' self-efficacy and confidence in their ability to communicate effectively [8].

According to Ke et al. [2020], for the purpose of educating university graduate teaching assistants, this research examined the advantages and limitations of a virtual reality-based learning environment. Using virtual reality as a teaching tool, the researchers found that teachers were better able to engage their students in the learning process by including interactive teaching and demonstrations into their lessons. To develop and implement a VR-supported learning intervention, we suggest integrating experience, affordance, and learner analysis [9].

According to Chen et al. [2021], using robotics, artificial intelligence, and virtual reality technologies, this action research project is aimed at developing an application system and training materials for English tour-guiding in the field. Because the research concludes that technological growth has created new possibilities for educational innova-

tion while also creating new obstacles, it is essential to offer teachers with training to help them explore these opportunities and overcome the challenges they have faced [10].

According to Guan et al. [2020], we show that, as sophisticated technologies in education continue to grow, certain fields of study seem to have survived the time of test, while others have suffered highs and troughs. To begin a conversation on the advantages and disadvantages of integrating AI and DL into classroom instruction, this paper was written [11].

According to Johnson et al. [2009], those learning a second language or a new culture might benefit from the TLCTS (Tactical Language and Culture Training System). TLCTS courses have been utilised by more than 40,000 students from throughout the globe. It explains the architecture of TLCTS and the AI technologies it utilises, as well as the findings of several assessment studies that indicate the advantages of learning other languages and cultures using this method [12].

According to Kim et al. [2019], robotics research has made it possible for machines to aid humans in a variety of ways. Using chatbots in the classroom is becoming more common, and researchers are looking at ways to incorporate this technology into the classroom. Following the findings of this study, new research paths and educational implications for chatbots in the area of language learning are provided [13].

According to Johnson et al. [2005], computer games nowadays have the capacity to teach as well as amuse its players. In order to keep players engaged and motivated, game designers utilise a variety of approaches. Nonplayer characters in the game are controlled by artificial intelligence, and intelligent coaching gives further support [14].

According to Ma [2021], this article focuses on the AI- and ML-based VRT college English immersive context teaching approach. The goal is to help students enhance their English language skills. When two freshman classrooms at a university were compared, the experimental class used virtual reality technology to educate from a

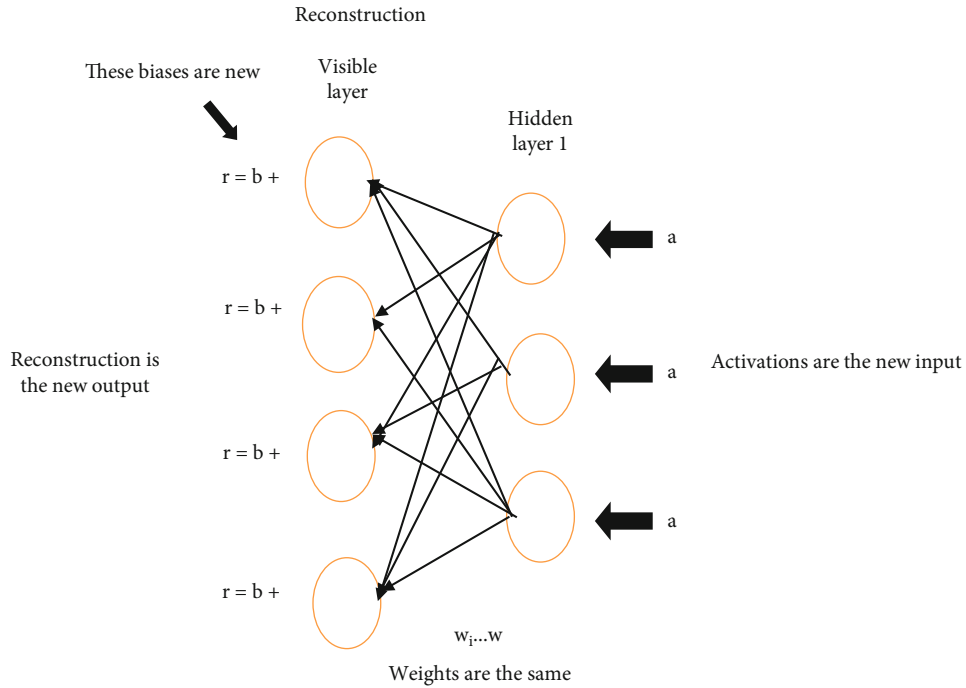


FIGURE 2: ANN-based VR.

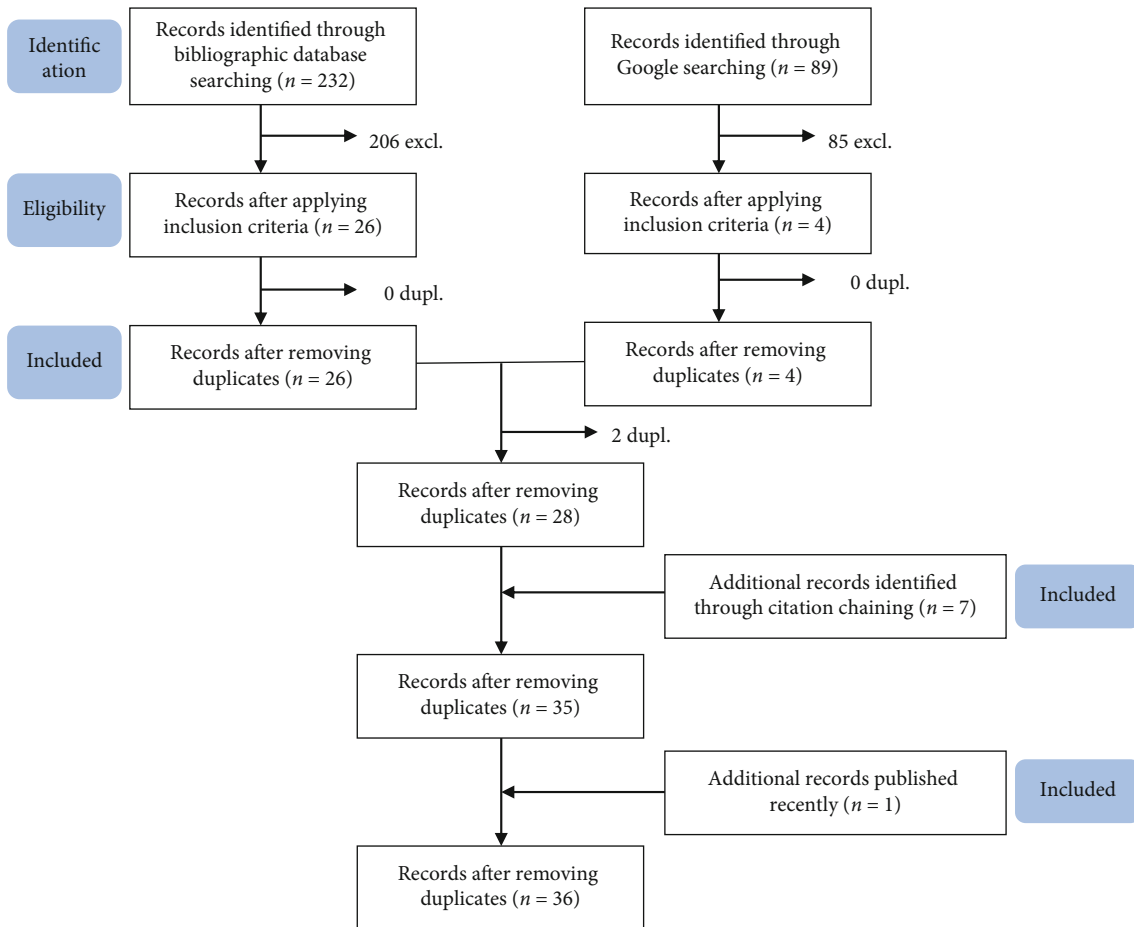


FIGURE 3: Flow chart of VR.

TABLE 2: Test cases.

| Row | Set |
|------------|---|
| Test set 1 | (Virtual reality QR Augmented reality QR Mixed reality QR Extended reality) |
| Test set 2 | (Artificial intelligence QR Machine learning QR Deep learning QR Neural networks) |
| Search 1 | #1 AND #2 |
| Test set 3 | (Interactive simulation QR Virtual environment) |
| Search 2 | #3 AND #2 |

TABLE 3: Comparison of measures.

| S. no. | Method | Accuracy | VR score | Training gain | Detection score |
|--------|--------|----------|----------|---------------|-----------------|
| 1 | RFO | 90.12 | 93.24 | 90.27 | 76.23 |
| 2 | DT | 91.36 | 95.25 | 92.56 | 87.54 |
| 3 | GB | 93.54 | 91.36 | 89.45 | 69.34 |
| 4 | ResNet | 94.28 | 94.218 | 96.35 | 81.45 |
| 5 | ANN | 96.37 | 97.37 | 98.34 | 85.47 |

constructivist viewpoint, although the manage group used multimedia equipment and standard education techniques. This indicates that students' English levels can be improved by using constructivist theory and virtual reality technology into college English immersive context education [15].

According to Huang et al. [2021], as new technologies arise, they have an effect on how students are taught and educated. AI applications in education, as well as examples of how AI may help improve the educational system, is also included [16].

According to Qian [2022], virtual reality technology has grown in popularity over the last several years, and it has also become a new approach to digital media art in the process. Regardless of the virtual reality technology employed, all results showed that efficacy was substantially greater than conventional approaches. As a result, we discovered that pupils were more receptive to pictures and images than they were to written text [17].

According to Ban et al. [2021], education and teaching reforms have led to an increase in online teaching opportunities. Short text messages created by e-learning may be used for introduction analysis to optimise classes and improve innovative capacity and collaboration. In this approach, the features of the characters may be fully realized and investigated [18].

According to Divekar* et al. [2021], the use of AI and XR in numerous foreign language teaching apps has increased the accessibility of experimental learning techniques analogous to global fascination programmes, such as the use of virtual reality. AI and XR work together to generate conversational engagements that mimic real-world encounters in order to help students learn foreign languages more effectively [13].

According to Xiaohong et al. [2021], there is a lot of room for the use of AI technologies in foreign language acquisition as globalisation continues to progress. This study investigates the efficacy of a foreign language learning sys-

tem powered by AI. AI in multilingual language learning applications may be built using practical technology for the benefit of future development of foreign language learning, learning a foreign language and using it to make bedding [19].

According to Liu et al. [2021], it is tough to construct realistic teaching settings in most of the already created virtual classrooms. As a result, this article examines the goals and concepts of an Internet-based virtual learning models and outlines the system's fundamental design. There is a good teaching impact in practise because of the high level of accuracy and interaction of the scenario [20].

According to Wang et al. [2021], there are five benefits to this system: (1) it is effective in that it allows users to learn a language at their own speed and at any location. There are several languages supported by the system, making it accessible to learners of many backgrounds [21].

According to Qian [2022], virtual reality technology has grown in popularity over the last several years, and it has also become a new approach to digital media art in the process. As a result, we discovered that pupils were more receptive to pictures and images than they were to written text [22].

According to Lameris et al. [2022], experimenting with the notion of AI's effect on education was the goal of this investigation. It is clear what the ethical implications are, as well as a set of suggestions for implementing AI-assisted teaching and learning in practise [23]. According to Sepasgozar [2022], case-based storytelling is the teaching method used in the development and implementation of new virtual tour models for on-the-job training. Student behaviour was analysed in order to determine whether it might help establish a new VTAM (virtual teaching acceptance models) as a hypothetical structure used for gauging the adoption of educational technologies. Perceived usefulness, engagement, social presence, contextual learning, and immersion are just a few of the characteristics that make up VTAM's blend of technology and learning aspects [24].

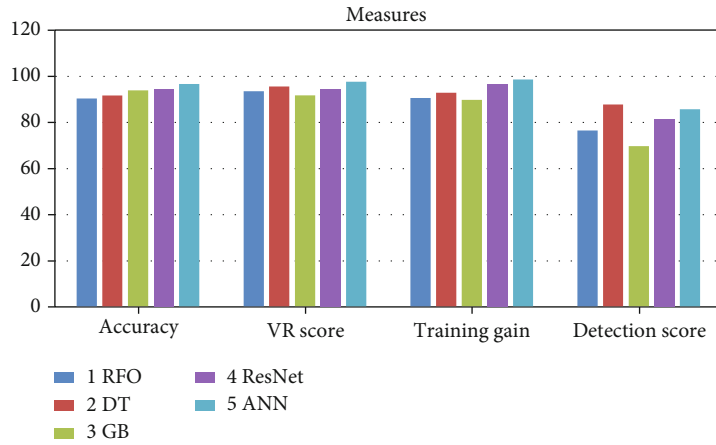


FIGURE 4: Measures comparison.

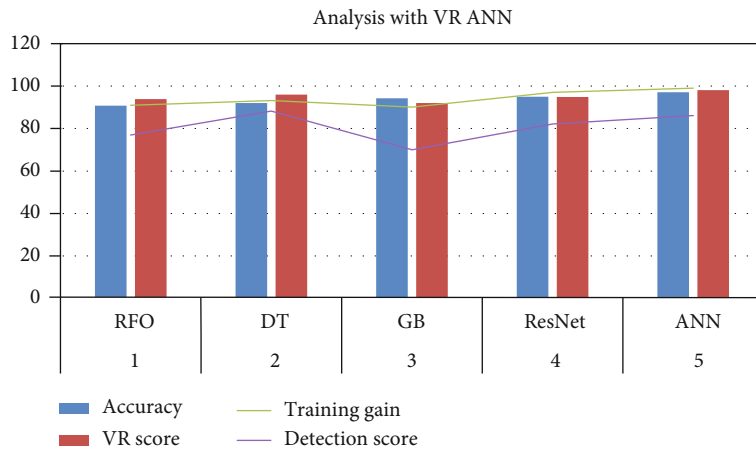


FIGURE 5: Testing analysis.

3. Methodology

Followers were divided into two equal groups, group A and group B, each with fifty students. A one-week training programmer on “developing corporate communication skills with a specific emphasis on speaking” was delivered to these two groups. Group A students were taught how to have oral talks without utilizing VR or AR, while group B students were taught how to use various VR and AR technologies in various areas such as oral presentations, impromptu, and group discussions. Data gathering and student views were examined and interpreted after five weeks of continuous training utilizing VR and AR equipment.

Interacting with coworkers, running a meeting or a business networking event, answering interview questions, giving a presentation or a keynote speech, and offering feedback to peers were just a few of the situations they faced during their learning term. During the final week of the course, students were given a test and asked to provide comments on it. Students in group A were able to achieve 30 percent perfection in the prescribed speaking activity, whereas students in group B were able to achieve 60 percent perfection while speaking with confidence. According to the com-

ments, 70% of students regarded the course to be good and beneficial. With the exercises built using virtual reality and augmented reality technologies and applications, they might acquire greater confidence and improve their communication abilities. As a result, the hypothesis is not null. The current research in the near future, virtual reality, and augmented reality are projected to be major technologies. Although the gaming business is one of the most well-known applications of VR and AR, the technology is not confined to it. Some business schools have already integrated VR and AR, and the number will undoubtedly rise in the future, benefitting the majority of students.

This study exclusively uses students from one profession as test subjects for experimental studies, ignoring the fact that students from various majors have diverse logical reasoning styles. As a result, the author will raise the size of the sample and kind of study items in the next research project. Figure 1 shows that the listening is important. Figure 1 indicates that the new class’s hearing and speaking scores are much higher than the control class’s. Overall, the experimentation class’s average writing score is somewhat higher than the control class’s, which might be related to strong language abilities and outstanding linguistic awareness.

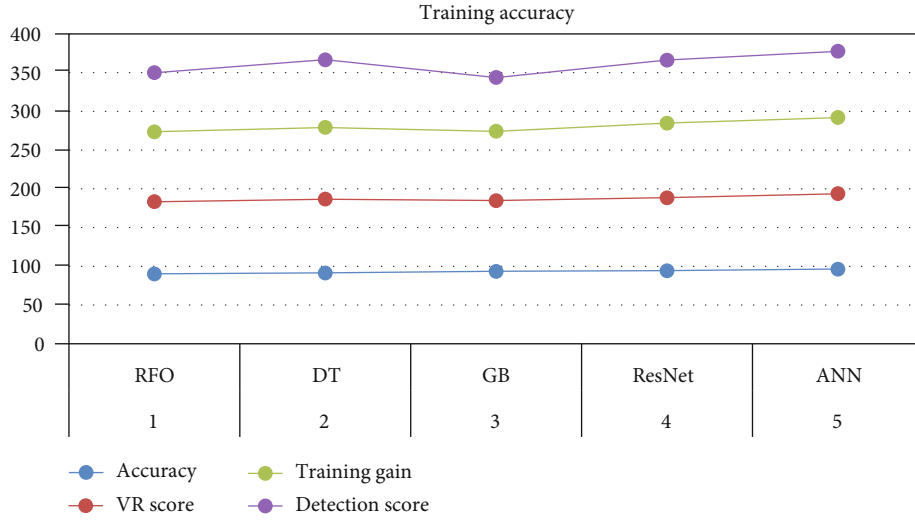


FIGURE 6: Training analysis.

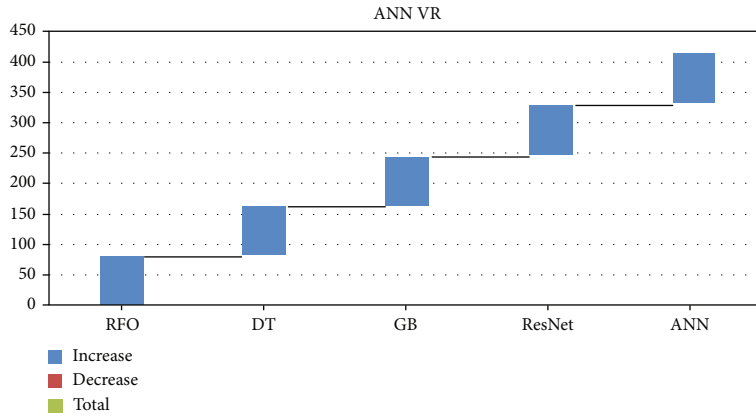


FIGURE 7: ANN VR.

Table 1 gives the sample data of the age range of the experimentation class.

$$Z = \frac{\bar{x}_a - \bar{x}_b}{\sqrt{(s_a^2/n_a) + (s_b^2/n_b)}}. \quad (1)$$

E-commerce is one of the fields where virtual reality is proving to be beneficial to businesses. VR also ushers in a whole new era in professional business. This technique is being used extensively by trainers in this field. Because of the diverse nature of VR and AR, the student may glance about the room and communicate with individuals who are accessible online. The student will be able to adjust to the circumstance more quickly and effortlessly. Learners will be able to picture the project more clearly, which is a crucial component in the corporate world. Virtual reality helps the student to vividly picture the buildings as they develop them, saving time and money. AR also allows a student to engage and immerse themselves in the actual world via a range of applications. As a result, virtual reality and augmented reality are a benefit to architects, engineers, and architectural

learners. This technology would allow for virtual tours of numerous sites. It is regarded as one of the most important aspects of the corporate world, and it is advantageous to those who work in the real estate market. The builder may provide their customers a virtual tour of the property to assist them picture the location or layout of their home, allowing them to make a better selection without wasting time.

The app “VR Scenario” helps prepare the student for spontaneous speaking. The student may improve their rapid thinking abilities by utilizing numerous business-related presentation slides using this software. Every thirty seconds, the slide changes. The student must picture the slide and talk in accordance with it. During the speech, his or her English-speaking abilities are assessed, and quick feedback is given so that the learner may comprehend the error and improve his or her skills. Sample research was done for a group of hundred students, taking into account all of these advantages. Algorithm 1 gives VR-based ANN for English dialogue samples.

Educators, according to the constructivism viewpoint of students, are the presenters of knowledge, but this does not

imply that they are the authority of knowledge or that they may force their particular deeper knowledge on educators. Teachers must pay attention to students' comprehension of their own knowledge since knowledge is derived from and belongs to students' own system of knowledge. Teachers may only advise pupils on how to improve or expand their knowledge. Students should not be passive recipients of new information; they should be actively involved in the production and creation of new information. As a result, instruction must be classroom and professor, allowing pupils to learn on their own shown in Figure 2

Each item in random access to teaching has a particular learning goal and emphasis so that learners may make a leap in their comprehension, and it includes the following teaching connections. It gives the pupils with a circumstance relevant to the core material of the current learning issue and then randomly enters the learning. Group collaborative learning entails a group discussion of information gained in a variety of contexts Figure 3.

Table 2 highlights the learning ecosystem's design; education must be supported and encouraged rather than tightly regulated; the online learning ought to be a place that encourages and supports knowledge.

4. Results and Discussion

VR technology may be used to help teaching by simulating anything. Smart technology simulations produce what pupils are exposed to throughout the practice process, ensuring student safety. The second factor is practicality. The relevance of students' practical competence is emphasized in situational education using VR technology. Students' interests are confined to a few areas in everyday instructional activities, and space is limited. The training methods and experience method are not the same as in prior schooling, and the students' experiences are also not the same. Comparisons of various methods are presented in Table 3.

The essential needs of VR-based situational teaching include physical equipment, such as computer hardware, applications, software, VR glasses, and gamepad operators; instructors should be experienced in utilizing VR technology on the basis of suitable hardware and equipment shown in Figure 4

Respectability: the educational material must be within a student's accepted level, and the scenario arrangement must be realistic and adhere to curricular requirements. Various methods that are favorable to extending students' original thinking; the information is genuine, and the educational scenario is more visualized; and repeat experience to lessen the influence of the teaching environment are some of the benefits of situation education based on virtual reality technology Figure 5

The third factor is life. The goal of situational education with VR technology is to keep it as near to reality as possible while yet allowing students to enhance their cognitive skills. Meet the training goals, and create and administer the programmer in accordance with the requirements shown in Figure 6.

The above Figure 7 clearly explains about incorporated public speaking that incorporates virtual reality and augmented reality technology may provide learners with the best opportunities to improve their communication skills.

5. Conclusion

The current research found that utilizing VR and AR in English teaching and learning may help students improve business language abilities. The research looks at a variety of prospective pedagogical apps/tools for improving communication skills in a variety of business settings. A mixed methodology study demonstrates how virtual reality technologies may be used to enhance English communication abilities. It discusses how different VR applications may pique learners' attention and passion, as well as several strategies for improving Business English. Future study in this area may be explored in future studies. For example, study would include more respondents with varying levels of English language ability and education to explore how to fulfil the desire for virtual and augmented designs in different settings, as well as the elements that impact collaboration in different activities. Finally, it would be good if augmented reality and AR/VR could be a common educational tool. Because of the motivating components and their reliance on mobile smart phones, these products are most important to young postgraduate trainers. The use of virtual reality and augmented reality technologies in corporate public speaking may give learners with the finest possibilities for enhancing their communication abilities.

Data Availability

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Conflicts of Interest

The author states that this article has no conflict of interest.

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