English Teaching Courses for Students Majoring in Occupational Health in Higher Vocational Education Based on Virtual Reality

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Abstract. With the rapid development of modern technology, virtual reality technology is also used in our lives. This article discusses the virtual reality technology to simulate the English teaching courses for students majoring in occupational health in higher vocational schools. Virtual reality technology is a new technology derived with informatization. It is a process of building a virtual environment to make people feel the five senses. In English teaching, building a direct English environment is the best way to learn English. For non-native English students, constructing a real English language environment can make English teaching more effective. Through the introduction of virtual reality technology, this paper explores the possibility of using virtual reality technology in English teaching, using constructivism to construct a real language environment, allowing learners to truly experience the native English environment, increasing their interest in learning, and improving teaching effects. Aiming at the boring characteristics of the English learning process, based on virtual reality technology, an English learning education system is designed to encourage teachers to use interactive, graphical, game-like examples to teach and motivate students to use words and sentences. It also promotes students’ learning and understanding of the course through game teaching. This article conducts research on the performance and interest of students in English teaching by studying the English teaching courses of students majoring in virtual reality technology in health. Virtual reality technology is penetrating into various fields of daily life at an unprecedented speed. The combination with various disciplines is becoming more extensive and deeper. For traditional English linguistics and related disciplines, the huge impact of virtual reality technology is self-evident, but it also expands the research space for traditional system functional linguistics and pragmatics.

Keywords: Virtual Reality Technology; Higher Vocational Occupation; Health Professional Students; English Teaching.

1. Introduction
With the popularization of 5g technology, information technology has brought subversive changes to people's life style. It is also inevitable for the development of the times to introduce information...
technology into the field of education. As a cutting-edge technology in the development of information technology, virtual reality technology can easily realize the design of experimental scenes with low cost, high efficiency and high simulation. Therefore, the application of virtual technology in modern teaching reflects the deep integration of new technology and modern teaching, a practical teaching activity, because information technology will permeate all aspects of modern teaching. Even the experimental results will be evaluated, which also marks the status and role of information technology in modern teaching, and has realized the evolution from auxiliary to leading [2].

Since VPL first proposed the concept of virtual reality technology in the 1950s, virtual reality technology has integrated computer image technology, computer simulation technology, sensor technology, display technology and other science and technology in the multi-level information space [3]. To create a virtual information environment on the network can make users feel a sense of engagement and interact with the environment, which helps to advocate creativity [4].

A certain English Research Institute has tried to use virtual reality technology in professional English education and achieved good results, but there is almost no virtual reality technology in College English education. The author thinks that there are two reasons. One is that college English contains a wide range of fields, which has become a weak target; the other is that the level of learners is uneven [6]. This makes the design of virtual scene difficult and the prognosis is poor [7]. However, virtual reality technology has great potential for the reform of College English education. Its expansion will greatly make up for the bottleneck of the slow development of foreign language education in China, which is restricted by context. There is little integration and development of College English education and virtual reality technology. In the existing foreign language education, we should use the experience of virtual reality technology to make up for the shortcomings of application programs, and gradually improve the construction of virtual reality technology in College English education. Make full use of the advantages of virtual reality technology to realize different situations of education, provide high-quality education platform and services for College English education, strengthen the fun and entertainment of English learning, and promote autonomous learning [9]. Under the guidance of big data, the relevant theoretical research and interaction design research based on this foundation will make up for the current defects of virtual reality technology related research in College English education, and provide learners with better quality, more effective and more comfortable time and education materials.

2. Method

2.1. Least Squares Method

ARMA(p,q) model, denoted as

\[ 
\beta = \varphi_1, \ldots, \varphi_p, \theta_1, \ldots, \theta_q 
\]

\[ 
F_t(\beta) = \varphi_1 x_{t-1} + \cdots + \varphi_p x_{t-p} - \theta_1 \varepsilon_{t-1} - \cdots - \theta_q \varepsilon_{t-q} 
\]

The residual term is:

\[ 
\varepsilon_t = x_t - F_t(\beta) 
\]

And the residual sum of squares is:

\[ 
Q(\beta) = \sum_{t=1}^{n} \varepsilon_t^2 = \sum_{t=1}^{n} (x_t - \varphi_1 x_{t-1} - \cdots - \varphi_p x_{t-p} + \cdots + \theta_q \varepsilon_{t-q})^2 
\]

The parameter value of the group that minimizes the residual sum of squares is the least square estimate of F.

Due to random disturbances, \( \varepsilon_{t-1}, \varepsilon_{t-2}, \cdots \) Unobservable, and so \( Q(\beta) \) Nor is \( \beta \). The explicit function of, Due to the full use of the information of the sequence observations, the accuracy of the least squares estimation is very high.
In practical applications, the most commonly used method is the conditional least squares estimation method. By assuming that the unobserved sequence value in the past is equal to 0, that is
\[ x_t = 0, t \leq 0 \]  \hspace{1cm} (5)

According to this assumption, the finite term expression of the residual sequence can be obtained:
\[ \varepsilon_t = \frac{1}{n} \sum_{i=1}^{t} \pi_{t,i} \]  \hspace{1cm} (6)

Then the residual sum of squares is:
\[ Q(\beta) = \sum_{t=1}^{n} \varepsilon_t^2 = \sum_{t=1}^{n} [x_t - \sum_{i=1}^{t} \pi_{t,i}]^2 \]  \hspace{1cm} (7)

By iterative method, when the above formula reaches the minimum value, this value is the least square estimated value of the parameter port.

2.2. Literature Analysis Method
This article will specifically make a systematic review of the application research of virtual reality technology in language learning. According to the respective characteristics and relevance of language learning and virtual reality technology in related research. The purpose of this research is to summarize the development trends of language learning research supported by virtual reality technology, describe research trends, and provide valuable suggestions for future research directions.

2.3. Experimental Research Method
Experimental research is another important research method of this research. The psychological influence factors of learners in the virtual reality environment, the performance of learning behavior, and the learning effect in different realities of learning scenarios are very complicated, and experimental research is needed. To make up for the research information that cannot be obtained by the literature review research institute, at the same time, the new learning model also needs to be verified and adjusted through teaching experiments. The research will be carried out around 100 non-English major students, and follow the teaching experiment research, behavior experiment research and psychological experiment The research is carried out, and strive to obtain cross-cutting research results and pursue higher research value.

3. Experiment

3.1. Subject
The subjects of this experimental study are the author's 240 first-year students (40 boys and 200 girls) from several majors in a vocational college. Among them, there are 60 English majors, 60 oral English majors, 60 business management majors, and 60 preschool education majors. All majors of higher vocational colleges have college English courses, and students mainly focus on study, and will not be affected by various internships. Sophomores have to take longer professional internships and gradually have employment pressure. Juniors have half a year to do on-the-job internships, and the remaining time for graduation thesis writing and job hunting. Therefore, choosing freshmen as the research object, the result is more objective.

3.2. Experimental Method
(1) Design research method
This research will analyze and explore common life and learning scenarios in English communication, clarify the types and scenarios of virtual scenarios; further determine the constituent elements and plot arrangements of learning scenarios, and put forward sufficient functional requirements for the development of virtual learning scenarios. Ensure that the designed language learning environment is scientific, reasonable, and suitable for English learning.
(2) Questionnaire survey method

The questionnaire survey method is a direct and effective method to understand the question to be investigated from the surveyed through a uniformly designed questionnaire. This study uses the English Listening Self-efficacy Questionnaire adapted by Zhou Chenhui and the English Listening Learning Strategies Questionnaire adapted by Li Qiong to survey 240 freshman students of roughly several majors in a vocational college, and use SPSS17.0 to collect the questionnaire data perform statistical analysis, discuss the results, and finally draw conclusions.

(3) Case analysis method

Through checking the English teaching situation with the freshmen of a vocational college and how useful virtual reality technology is in English teaching.

(4) Theoretical analysis method

First, it discusses the related theories of virtual reality technology, defines the concept of virtual reality technology, expounds the degree of use of virtual reality technology in English majors, analyzes the content of virtual reality technology, and also discusses virtual reality technology based on detailed discussions. Discuss the application degree of realistic technology in various majors in higher vocational schools.

4. Results

From the results, it can be seen that a vocational college is very interested in the application of virtual reality technology in English majors. Because English majors are very boring in the classroom, English majors are very interested in using virtual reality technology in English teaching. Figure 1 can know.

![Figure 1. Students' satisfaction with virtual reality technology education](image)

As shown in Figure 1, the contribution of teaching module to students' understanding of key concepts is more obvious than that of enhancing students' overall learning. About one third of the students think that the teaching module greatly affects their understanding of the concept. About 60% of the respondents said that the impact on concept understanding reached a satisfactory level. Based on the students' perspective, these modules are more beneficial in helping them understand specific content topics than learning more extensively in the course. From this we can know that virtual reality technology is very necessary in English teaching, and students are also very interested in it.

The application of virtual reality technology in English teaching and non English major teaching has the following comparison, as can be seen from Figure 2.
It can be seen from Figure 2 that the application of virtual reality technology to the teaching of the two majors has produced a very good phenomenon, but in contrast, virtual reality technology is more easily accepted and liked by students in the English major teaching mode. It can be seen that virtual reality technology is more suitable for use in English major teaching and is very suitable for students.

Through the questionnaire survey, the degree of understanding of these 240 students on virtual technology is shown in Table 1.

Table 1. Table of understanding of virtual reality technology

|                   | English major | Oral English Major | Business Administration Major | Preschool Education Major |
|-------------------|---------------|--------------------|-------------------------------|--------------------------|
| Know well         | 30 people     | 25 people          | 18 people                     | 20 people                |
| Okay              | 15 people     | 15 people          | 16 people                     | 10 people                |
| general           | 10 people     | 15 people          | 16 people                     | 24 people                |
| Don't understand  | 5 people      | 5 people           | 10 people                     | 6 people                 |

It can be seen from Table 1 that English majors know more about virtual reality technology than non-English majors, and English majors should also apply virtual reality technology to English majors. Higher vocational English education based on 3D virtual reality technology emphasizes the characteristics of "student-centered and teacher-supported", allowing students to participate in the learning curriculum with the main goal of the learning curriculum. Under limited objective conditions, it is possible to use virtual reality technology to create a good virtual environment, improve the subjective environment quality of students' learning, fully mobilize students' enthusiasm and enthusiasm for learning, and provide students with a high-quality language environment for learning business English. In addition, students can also use computers to learn virtual reality language without going to school, so they can learn anytime and anywhere, so education costs are greatly reduced. Teachers are only responsible for learning guidance and guiding students to complete corresponding learning tasks, which can reduce teachers' workload and save teachers' resources. High-quality educational resources are collected through online virtual classrooms, and excellent teachers and schools jointly develop relevant learning courses to reduce education costs in an overall manner. At the same time improve the efficiency of education.

5. Conclusion

As an emerging technology industry, 3D virtual reality technology is still in its infancy in teaching and applying higher vocational English, but its virtual platform includes educational topics, educational
scripts and educational contents. In addition, the interactive characteristics of virtual reality technology are used to enable students to study independently, fully stimulate their interest in learning and improve their language learning effect. A certain English organization has tried to apply virtual reality technology to English education. Although it has achieved good results, virtual reality technology has hardly been used in College English education. There are two reasons for this. One is that college English covers a wide range of fields and is relatively weak; the other is that the level of learners is uneven. This makes the design of virtual scene difficult and the prognosis is not good. However, virtual reality technology has great potential for the reform of College English education. Its expansion will greatly make up for the bottleneck problem of the slow development of Chinese language education in foreign countries. There is little integration and development of College English education and virtual reality technology. In the existing foreign language education, we should use the experience of virtual reality technology to make up for the shortcomings of application programs, and gradually improve the construction of virtual reality technology in College English education. We should make full use of the advantages of virtual reality technology to realize different situations of education, provide high-quality education platform and service for College English education, strengthen the fun and entertainment of English learning, and promote autonomous learning. Generally speaking, virtual reality technology plays an important and irreplaceable role in College English education. College Students' continuous improvement of their English ability can also help them to establish more self-confidence in their study and life, so that they have more possibilities in interpersonal communication and future life. Virtual reality technology has become an indispensable part of the education industry, which will bring greater wealth and value to the education industry in the future.

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