

## The College English Teaching Reform Supported by Multimedia Teaching Technology and Immersive Virtual Reality Technology

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**Abstract**—At present, due to various reforms and developments, such as the reform of educational technology, the reform of the overall teaching mode, the reform of teaching methods, the improvement of teachers' comprehensive quality, etc., the important content of college English teaching reform under the current new situation has been created. Supported by multimedia teaching technology and immersive virtual reality technology, China will surely achieve the important goal of teaching reform. Immersion virtual English teaching environment refers to a new type of college English teaching environment under the modern mode. Its main purpose is to solve the current dilemma in the implementation of immersion English teaching. Supported by the current environment, the traditional immersion college English teaching mode can break through the constraints of time and space, and gradually become a new immersion college English teaching mode supported by high-end computer science and technology.

**Keywords**—*Multimedia teaching technology; Immersive virtual reality technology; College English teaching*

### I. INTRODUCTION

Education is the basis of national rejuvenation and the continuous development of society. It is an important way to promote the all-round development of human beings, and it also depends on the yearning of millions of people for a better life. With the continuous development and renewal of science and technology, knowledge has also begun to renew and develop continuously, which has become the core factor to enhance comprehensive national strength. At present, all countries in the world are competing for excellent talents. It can be seen that talent resources have become the most important resources in the 21st century. College English is not only a compulsory basic course for all college students, but also a course to promote students' understanding of different cultures and knowledge. At present, the majority of College English teaching in China is to explain all kinds of knowledge and skills related to English language, and combine various teaching modes and methods. The Ministry of Education of China clearly emphasizes that the basic requirement of College English teaching in China is to enable students to learn English independently and improve their English ability in many aspects, so as to cultivate students' intercultural communicative competence, and to enable them to continuously improve their comprehensive quality and cultivate international talents for our country. Any language is created through practice in the process of production and life. Different languages represent different cultures and ideas. Language contains abundant thought and

humanistic knowledge. Language is not only a simple piece of vocabulary, but also includes context and background. Therefore, in the process of College Students' learning English, teachers should make students understand that learning English is not only a language, but also the need to deeply understand the background knowledge contained in the language, understand the local conditions and customs of various countries, and broaden their horizons. In addition, in our country, the traditional English teaching mode is mainly to train students to answer only the questions in the text, but not to really apply English to real life. In recent years, with the continuous development of science and technology, multimedia teaching and immersive virtual teaching have also begun to be used in English teaching, which has also promoted the reform of College English teaching mode in China.

### II. DEVELOPMENT STATUS

China's foreign exchange activities are becoming more and more frequent. Therefore, a large-scale reform of college English teaching has begun. Since July 2007, the Ministry of Education of China promulgated The Requirements for College English Teaching, it has not set a clear goal for the reform of college English teaching. It points out that the college English curriculum is mainly based on English teaching theory, with English knowledge and cross-cultural knowledge as its main content, and integrates various teaching modes and methods. Therefore, it is necessary to adopt advanced science and technology and construct various computer and Internet-based courses to provide excellent language learning atmosphere for college students. In the 1960s, the immersion teaching method began to appear in people's vision. It emphasized the creation of a real language environment, combined with the natural learning method, and broke through the traditional English teaching model based on teacher's explanation, which can well meet the requirements of English curriculum reform in China. However, in recent years, because of the backward conditions of universities in China, it is still difficult to implement immersion teaching method in English classes of major universities in China. Therefore, how to ensure the smooth implementation of immersion college English teaching has become one of the most important issues. With the continuous progress of science and technology, the level of education modernization and internationalization in our country is also constantly improving. The computer virtual reality technology produced in recent years can solve the current problems, optimize the immersion-based English teaching method, and provide a strong platform for the

construction of immersion-based virtual English teaching environment.

### III. INTRODUCTION OF VIRTUAL REALITY TECHNOLOGY

Virtual reality is a multi-disciplinary and comprehensive high-end technology developed in the last 20 years. It is also a new research paradigm beyond the traditional qualitative and quantitative research fields. In the past ten years, virtual reality technology has been gradually recognized and widely used in various fields, such as military, education, entertainment, telemedicine and so on. Virtual reality technology includes a variety of special devices, such as helmet mounted display, data gloves, tracking system, etc. It is mainly an advanced artificial synthetic computer user interface, which can simulate the real world through a variety of perceptual ways, aiming at creating a strong sense of super-lifelike presence and human-computer interaction experience in the three-dimensional high-simulation virtual environment. Virtual reality technology combines various advanced technologies, such as high-speed three-dimensional image technology, voice feedback technology, tactile feedback technology, and so on, so as to create a super-compelling interactive environment with a variety of characteristics, such as immersion, interaction, imagination and so on. In addition, users of virtual reality environment can integrate into the virtual reality environment as a whole and fully experience various experiences.

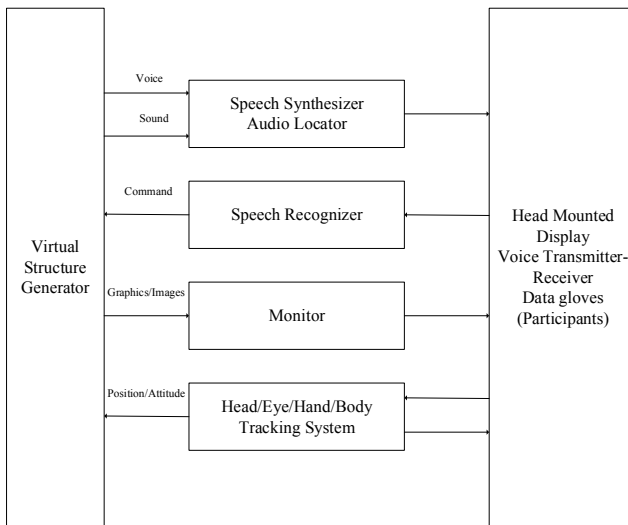


Figure 1. The Structure Diagram of Virtual Reality

### IV. THE REFORM OF HOLISTIC TEACHING MODE

Modern science and technology have provided a good foundation and condition for the reform of traditional English teaching mode. We should make full use of modern information technology and network technology to bring the Internet into English classroom and change the teaching mode of classroom. We should insist on taking students as the main body. Teachers and students should communicate and interact more. In different stages, both teachers and

students play an extremely important role in the teaching process. Teachers mainly provide guidance and help to students, and inspire and guide students when they are thinking hard or unable to find the right answer. Teachers should teach students in accordance with their aptitude and constantly encourage and praise students. In addition, the new teaching mode also makes full use of computer network technology and immersive reality technology, so as to promote English teaching to break through the limitations of time and space of traditional teaching mode, and to promote its continuous development and progress in the direction of diversification. Specifically, teachers can design various teaching software and teaching situations according to students' English proficiency, adopt grading method, and comply with the principles of English teaching, so as to realize the practicability, knowledge and interest of English classroom, and thus enhance students' interest in learning.

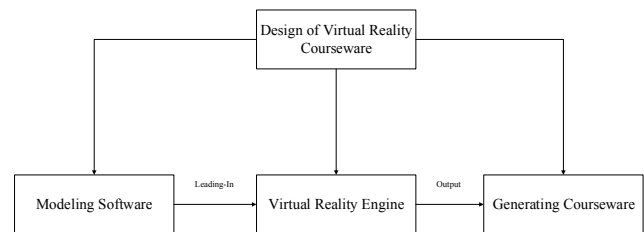


Figure 2. The Realization of Virtual Reality Courseware

### V. EDUCATIONAL TECHNOLOGY REFORM

#### A. Multimedia Assisted Instruction Technology

Multimedia assisted instruction technology has been widely developed in recent years. In our country, most primary and secondary schools and universities have constructed multimedia teaching environment, which has played a positive role in promoting teaching methods and teaching theory, but also has a far-reaching impact. Multimedia teaching is based on computer and classroom English multimedia teaching mode, emphasizing the communication between teachers and students in the teaching process. In addition, due to the change of the teaching process, the status of teachers and students in the classroom has also undergone tremendous changes. Teachers have become the guidance and assistant role, and students have really become the main part of the teaching process. The advantage of multimedia teaching is that it can solve the main contradiction between traditional teaching content and class hours. It covers a large amount of information and is efficient and time-saving. It can break the limitation of time and space, and build a good learning environment for students, and through pictures, words, voice and video, the teaching content is presented to students comprehensively and systematically. It enables students to experience the latest teaching technology, and also enables them to experience advanced science and technology in the classroom, so as to enhance students' attention and improve their academic performance.

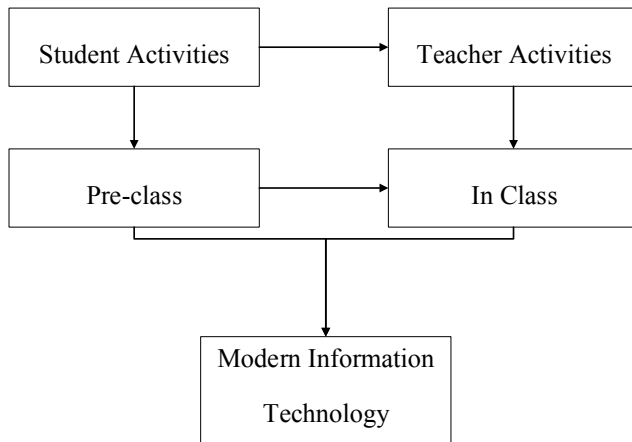


Figure 3. Multimedia Assisted Instruction Technology

### B. Immersion Virtual Reality Technology

Compared with traditional multimedia technology, immersive virtual reality technology has a stronger sense of reality and immersion. It is an advanced virtual reality technology, which can make users feel reality in all directions. At the same time, immersive virtual reality technology also uses a variety of advanced science and technology, such as tactile feedback technology, and combines these technologies with modern computer technology, so as to build a super-realistic interactive environment which is difficult to distinguish from reality. In addition, the immersive virtual English environment also uses a variety of advanced teaching theories as guiding ideology, such as cooperative learning theory and immersive learning theory, so that students can truly feel the real situation, and then actively study and think in the teaching situation. At the same time, constructing realistic teaching situation and simulating real language environment can help students overcome psychological barriers, build confidence and develop good habits of speaking English openly, so as to improve students' ability of using English. At present, immersive virtual learning environment has been widely used in the field of foreign subject teaching, and has achieved fruitful results. However, in China, due to the constraints of University conditions, immersive virtual learning environment has not been applied to college English classroom. However, some universities have begun to carry out pilot projects, and provide a good basis for the full use of immersive virtual English learning environment in China in the later period.

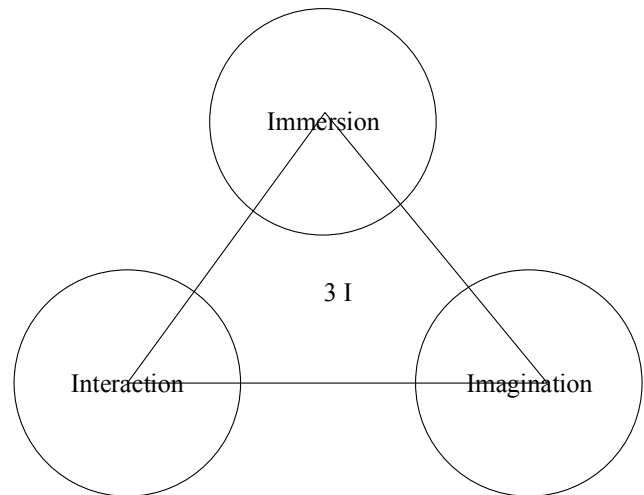


Figure 4. Immersion Virtual Reality Technology

## VI. TEACHING METHOD REFORM

Constructivist learning theory based on computer virtual reproduction is an extension and expansion of traditional constructivist learning theory. Its construction conditions are multimedia teaching environment and immersive virtual learning environment. This theory clearly points out that college students' English learning should be a process of autonomous learning of new knowledge at the level of old knowledge under the condition of high technology, which is also a process of improving their English cognitive ability and cultural accomplishment. It is also a process of improving their self-learning ability. Under the guidance and help of teachers, students should take the initiative to absorb external knowledge into their own knowledge. In the process of college English teaching, college students are the main body of English class. They should study actively instead of waiting passively for teachers to explain. Teachers should be the guides of students, not the traditional inculcators, whose main purpose is to guide and help students solve the problems they encounter. Therefore, using immersion learning mode can gradually change the traditional teaching mode of large-scale English in China, from the original mode of knowledge imparting to the mode of English ability training, so as to train more internationalized talents with modern and innovative ideas in China.

## VII. IMPROVING THE COMPREHENSIVE QUALITY OF TEACHERS

Constructivist large-scale English teaching method puts forward higher standards for teachers, which also means that teachers are facing challenges brought by the new teaching mode, new teaching content and evaluation system. If you want to educate students, you must do yourself well first. Therefore, teachers should strictly abide by laws and regulations, strictly teach students in accordance with advanced educational concepts, pay attention to role transformation, emphasize students as the main body, strengthen the interaction, vividness, visualization and

operability of English teaching process, and enhance students' cultural literacy. In addition, teachers should keep pace with the times and understand the use of various network and multimedia technologies, so as to apply network technology and multimedia technology to English teaching classroom. In the process of building an environment for second language acquisition, teachers also need to strengthen communication and interaction with students, and understand the learning and living conditions of different students, so as to promote the formation of students' correct values and promote their all-round development. Despite the continuous development and renewal of current science and technology, which is also widely used in people's production and life, science and technology can never replace the role of teachers, because teachers not only teach knowledge, but also moral education for students. However, teachers should also be deeply aware that with the continuous development of science and technology, teachers who do not have the skills of science and technology education will also be eliminated by modern education. College English teachers should also continue to learn all kinds of modern advanced information science and technology, so as to gradually transform the traditional teaching environment into multimedia teaching environment and immersive virtual English teaching environment, and use modern advanced educational concepts, using high-tech assisted teaching, to build a good learning environment.

### VIII. CONCLUSION

With the continuous development of science and technology, teachers who are not computer majors have begun to master immersive virtual reality technology and multimedia technology skillfully. Although in the current stage, the construction of immersive virtual teaching environment and multimedia learning environment requires higher costs, these costs are gradually reduced with the continuous progress of science and technology and the passage of time. In the near future, immersive virtual teaching technology and multimedia teaching technology will be able to be fully promoted and applied in universities all over the country. It has to be said that in the future, the comprehensive construction of Virtual Reality Laboratory can provide high-end technical support for the application of immersive virtual English teaching environment and multimedia teaching environment in Chinese universities. Undoubtedly, immersive virtual reality technology and multimedia teaching technology can optimize and adjust the traditional college English teaching mode, break the constraints of time and space, and improve students' interest in learning, so as to achieve the goal of college English teaching reform in China.

### REFERENCES

- [1] Giese B, Koenigstein S, Wigger H, et al. The Application of Virtual Reality Technology in Teaching of Industrial Design – Outline of the Project for the Human-Computer Interactive Simulation of the Upper Limb Operations[J]. *Applied Mechanics & Materials*, 2014, 464(4):420-423.
- [2] Garavand A , Samadbeik M , Bastani P , et al. The Applications of Virtual Reality Technology in Medical Groups Teaching[J]. *Journal of Advances in Medical Education & Professionalism*, 2018.
- [3] Teng Lanzhi, He Jin, Po Fuli, et al. Application of Virtual Reality Technology in Multimedia Network Teaching [J]. *Research on Audio-visual Education*, 2002 (7): 48-50.
- [4] Zhang Zhi. Application of Virtual Reality Technology in Multimedia Teaching[J]. *Modern Computer*, 2006(11): 87-89.
- [5] Liu Yi. Application of Virtual Reality Technology in Multimedia Teaching [J]. *Computer CD Software and Applications*, 2013 (5): 91-92.
- [6] Luo Gaofei, Wang Shaojie. Research on Multimedia Teaching Method Based on Virtual Reality Technology [J]. *Contemporary Education Theory and Practice*, 2015 (9): 94-96.
- [7] Chai Neng. Reflections on Virtual Reality Technology and Foreign Language Learning [J]. *Popular Science Education*, 2015 (8).
- [8] Zhou Qing. Applied Research of Virtual Reality Technology in College English Teaching [J]. *Intelligence*, 2017 (28): 190.
- [9] Hou Lin, He Xiaojun. Design and Implementation of Multimedia Teaching System Based on Virtual Reality Technology [J]. *Scientific and Technological Innovation*, 2017 (2): 88-88.
- [10] Lin huzong, Phantasmagoric flowing science-multiphase hydromechanics. Beijing: the book concern of Qinghua University, Guangzhou: the book concern of Jinan University. (in Chinese)
- [11] Wang youcheng, Shao min, The theory and numeric method on finite element analysis. Beijing: the book concern of Qinghua University, 1997. (in Chinese)