



The Design of Multimedia English Teaching System Based on Virtual Technology

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Abstract

With the universal use of contemporary information technology and network, multimedia teaching has become an inevitable development direction in the field of education. Traditional English teaching mode has many disadvantages, such as single form and biased teaching content. Multimedia English teaching can improve students' interest in learning, cultivate students' memory skills, help students to better acquire knowledge and have a deeper understanding of other cultures. From the perspective of the disadvantages of traditional English teaching, the reform of English model has been urgent. This paper mainly expounds the development and change of multimedia English teaching system design under the background of virtual technology, and explains its functions in detail and accurately, aiming to accelerate the teaching process of multimedia English teaching system design under the background of virtual technology. In addition, students can also have access to better educational resources to speed up the students' learning progress.

Keywords: *Virtual reality technology, Multimedia, English Teaching system*

1 INTRODUCTION

With the rapid development of virtual reality technology, multimedia English teaching is gradually applied to students' classroom teaching [1]. The rapid development of computer and network technology makes the advantages of multimedia teaching more obvious. In view of the shortage of multimedia English teaching, based on modern teaching mode and concept, reference to modern technology puts forward multi-level teaching [2], on the basis of improving teaching efficiency and quality, the introduction of diversified modern technology directly changed the teaching mode, teaching level, through the development of multimedia technology, the purpose is to improve the efficiency and quality of English teaching, to improve the data storage.

2 DEVELOPMENT PRINCIPLE OF ENGLISH TEACHING CLASSROOM DISTANCE TEACHING SYSTEM

In multimedia English teaching based on virtual technology, can use 3DMax virtual reality technology to create the overall structure model of teaching system [3], build development environment and design system

structure model, through the scene rendering and multithreaded transfer to design teaching system top [4], completed in the embedded development environment for the design of graphical interface. When the English distance teaching system is in the static view model library, it forms three levels of control perception layer, network transmission layer and service logic layer. [5] The perception control layer uses sensor equipment to provide users with a timely and smooth interface, through multimedia perception technology and RFID for teaching scene information collection and multimedia rendering, and create an English teaching classroom database to allocate classroom teaching resource information [6]. Program programming and standard template database and virtual reality design and create English classroom. According to the sequence of information processing, the system operation simulation can be developed through multi-threaded technology. The functional layer uses C++ software to incorporate the logic into the program [7].

In creating distance teaching in English teaching classroom, it is necessary to realize separation according to compression perception. According to the double-attack communication mode, the information management service provided by the user agent server to the user, and the system network transmission layer is created through mobile communication network, campus

network and Internet [8]. The user proxy server is designed through the Browser/Server structure, and the multimedia information flow coding format of both parties is used on the SIP proxy server, so that the interface of the English distance teaching system is controlled and presented [9].

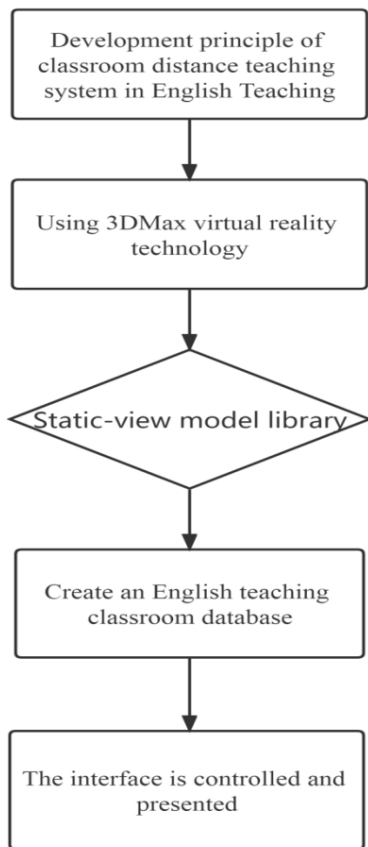


Figure 1. The Development principle of classroom distance teaching system in English Teaching

3 SYSTEM HARDWARE DESIGN

3.1 Transformation of the data format

To realize the limited storage of multimedia information automation, it is necessary to effectively identify the multimedia information first, and then realize the scientific information storage [10]. In the process of format transformation, the specific attributes of the information should be identified, and identified, and the identification process can be calculated with the following formula:

$$Q^i = Q \frac{(P_1 + \Delta P_1)^{P-1}}{(P_1 + \Delta P_1)P_p} \quad (1)$$

After the information identification, the data format can be converted. The specific process is as follows:

$$P_{type} = r \frac{R}{n} + (1-r) \frac{F_d^c}{F_d^e + Q_f^p} \quad (2)$$

After data conversion, the data cannot be used directly, and certain discrimination processing is required. The specific processing process is as follows:

$$\begin{aligned} RGF &= \text{BitBit5BitRGF} \\ RGQ &= \text{BitBit5BitRGQ} \\ RGE &= \text{BitBit5BitRGE} \end{aligned} \quad (3)$$

In the formula, RGF represents the high data order attribute parameter after conversion format; the completion variable parameter of RGQ table conversion; RGE indicates the probability of successful conversion; Bit refers to the execution attribute; Bit5 refers to the cost execution attribute [11][12]. That is the whole process of multimedia conversion.

3.2 Data and information inspection

Most of the data information tests are audio data information, so they need to be verified during automatic storage. The use of virtual reality technology requires certain conditions, and the limitation of conditions can assist in the test of higher accuracy, mainly divided into the following two kinds:

$$\begin{aligned} C(M) &= \begin{cases} 2^{iz}, & u \setminus y = 0 \\ 1, & u \setminus y \neq 0 \end{cases} \\ C(N) &= \begin{cases} 2^{uz}, & u \setminus y = 0 \\ 1, & u \setminus y \neq 0 \end{cases} \end{aligned} \quad (4)$$

The accuracy of the data information can be detected by this formula. C (M) represents the data information mutation status that has not appeared during the normal test, C (N) represents the data information mutation status, u represents the maximum value based on the heterogeneous condition, and v represents the minimum value based on the heterogeneous condition [13]. The multimedia data information of the experimental process can be stored, and the specific process can be calculated by the following equations:

$$M(A) = \frac{\epsilon p \{ \omega \cdot M (X_1) = A2, \dots, X_M (\omega) \in C \}}{\epsilon p \{ \omega \cdot M (X_1) = A2, \dots, X_M (\omega) \in C \}} \quad (5)$$

Through the above process, the test of the data information can be completed.

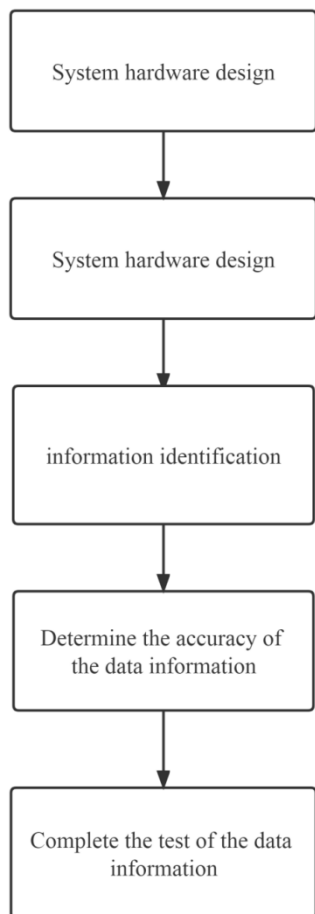


Figure 2. The System hardware design

4 MODEL CONSTRUCTION OF ENGLISH DISTANCE LEARNING SYSTEM BASED ON VIRTUAL REALITY TECHNOLOGY

The importance that universities attach to multimedia determines students' attitude and choice. According to the survey, 80% of those surveyed have personal computers, 50.6% (88) use computers for an average of 8 hours per week, and only 7% (13) use computers to learn English for 8 hours per week. With the progress of society and the development of science and technology, the prosperity of economically developed areas and the average level of hardware investment in family English learning are significantly higher than that of some mainland provinces [14].

TABLE I. STUDENTS USING MULTIMEDIA TO LEARN ENGLISH

Specific time to learn English by	Three to four hours	Six to eight hours	More than eight hours
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using a computer			
Number of proportion	35%	55%	10%

In order to realize the model construction of English remote teaching system under virtual reality technology, the perception control layer can control the multimedia network with LAN, Internet and campus network. In order to realize the switching operation of English remote teaching system, it is necessary to connect C/S and B/S mode, and realize the unified design of input and output ports of English distance teaching equipment according to the network architecture. In addition, the 3DSMAX software that combines graphics rendering, 3D modeling, and 3D animation can not only create realistic models, but also use rendering to successfully render realistic graphics and draw 3D animation based on the route. In many fields, there are more common applications.

The design of remote English teaching system of virtual reality technology also needs to build a 3D model file to create, according to a certain floor of the teaching building, according to the real size. The basic geometry is used to create the model and export as a file. The teaching equipment model created by 3DS MAX is used as the interactive file basis, and the texture map picture is converted into bitmap format, and reduces the picture accuracy [15]. The accuracy is to ensure that the map picture is small enough, ensure the clarity of the picture as far as possible, and reduce the picture storage space. Can create basic form according to the actual size, and then map the texture, do not need to create tedious ball location, for color mapping after inconsistent with the spot, in VRML virtual reality situation according to the actual size, express the characteristics of the object by baking mapping performance, prevent the mapping in 3DS MAX quantity present planar state, improve the visual effect of object rendering effect more realistic.



Figure 3. Video Display station model

Video display of two arms and floor position installed with two bulbs, in the case of the display light is dark, the projected image will be dark, before the light is not open, click the button can turn off the lights, the third click can return to the starting state of the cycle control, production

should set three states, respectively for no state, two lights state and floor light state. When starting the making, adjust the position range and intensity of the light in the three states within 3DS MAX, and then import it into the VRML.3DSMAX: VRML language is used to control the self-luminous emissive value of the object material, so that the appearance of the color of the lamp is inconsistent. When the light is not turned on, the emissiveColor value is 000, almost no light: when the light is turned on. The emissiveColor value is 111, the light is the white fish will set the three light states, and use the JavaScript code in the VRML program, its operation effect in the virtual experiment.

5 CONCLUSION

With the progress of The Times, the multimedia English era has gradually introduced the education industry. The combination of English teaching and virtual reality technology makes the teaching content more intuitive to show students in front of them, and to some extent can help teachers and students to have good English learning and communication. At present, the integration progress of virtual reality technology and English teaching is constantly accelerating. It is believed that in the near future, virtual reality technology will be more widely used in English teaching, and will also get more support.

ACKNOWLEDGMENT

Research on the effectiveness of Qu: Est questioning strategies in improving English reading ability of Vocational college students, University Humanities and Social Sciences Research Project of Jiangxi Province, Project Approval No.: JY20257

REFERENCES

- [1] Dayan Li. Design of automatic storage system based on YYUE technology [J]. Automation Technology and Application, 2020,39 (11): 41-43 + 63.
- [2] Hongmei Xuan. The Integration of Constructivist Theory and Multimedia English Teaching [D]. Northeast Normal University, 2006.
- [3] Hongjun Li. The Efficiency Investigation and Thinking of College English Multimedia Teaching [J]. Modern Education Equipment in China, 2009 (11): 15-17.
- [4] Hongni Yin. The Deepening Development of Multimedia Teaching in English Classroom [J]. External Education in China, 2010 (S2): 191.
- [5] Kun Dai. College English teaching reform supported by multimedia teaching technology and immersive virtual reality technology [J]. Science and Education Guide (journal), 2011(05): 112-113. DOI:10.16400/j.cnki.kjdx. 2011.03.019.
- [6] Min He. An Analysis on the Optimization Strategy of Multimedia English Teaching Management for College Students [J]. Overseas English, 2015 (11): 52-54.
- [7] On The Application of Multimedia in English Teaching [C] // . August 2015 Modern Education and Teaching Exploration academic Exchange Conference proceedings. ,2015:79-81.
- [8] Peiyun Li, Zhifeng Song. The Design of English Distance Multimedia Teaching System Based on Virtual Reality [J]. Modern Electronic Technology, 2020,43(14):161-163+169. DOI:10.16652/j.issn.1004-373x. 2020.14. 042.
- [9] Shuanke Zhao, Hong Yang. Multimedia English teaching looks at it from the teaching practice [J]. Journal of Shaanxi Normal University (Philosophy and Social Sciences edition), 1999 (S1): 50-55.
- [10] Wenhuan Feng, Yunfei Zhou, Jince Wang, Tingting Yan, ChengjunLiang, Xiaofei Zhao, Yaping Cao. Design of Multimedia English Teaching System Based on Virtual Technology [J]. Microcomputer applications, 2021,37 (03): 13-16.
- [11] Weijia Guo. Advantages and disadvantages of multimedia English teaching and Countermeasures [J]. Journal of Chongqing University of Science and Technology (Social Science Edition), 2010(22):196-197+200. DOI:10.19406/j.cnki.cqjxyxbskb. 2010.22.069.
- [12] Xifeng Wang. Based on Visual Teaching Technology in English Teaching [J]. Electronic test, 2014 (20): 145-147.
- [13] Xinggong Wang, Yunqing Wang. The Organic Combination of Traditional English Teaching mode and multimedia English Teaching mode [J]. Journal of Inner Mongolia Agricultural University (Social Science edition), 2010,12(01):128-129+135. DOI:10.16853/j.issn.1009-4458.2010.01.048.
- [14] Xiao Chang. The Integration of Multimedia English Teaching and Classroom Teaching [J]. Journal of Yan'an Vocational and Technical College, 2009,23 (02): 102-103.
- [15] Xinli Yu. On the Integration of Multimedia English Teaching and Traditional English Teaching [J]. Journal of Yili Institute of Education, 2006 (01): 101-103.

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