# Application of College Animation Teaching based on 3D Animation Technology

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**Abstract:** With the rapid development of information technology, the higher requirements for the quality and effect of the teaching of the arts classroom presentation is proposed. Based on this research put forward the university art education teaching based on 3D technologies. It is found that the 3D technology can not only make the classroom more vivid, and students benefit three three-dimensional courseware learning technology can quickly grasp the knowledge. It has practical value.

**Keywords:** 3D virtual reality; Distance education; Web courseware making

## 1. Introduction

With the continuous development of computer three-dimensional graphics technology, people are constantly trying to find and find a variety of three-dimensional graphics technology suitable for the industry, because it is more intuitive than the plane diagram, in many occasions more able to explain the problem. Therefore, the application of 3D graphics technology will be the direction of development in recent years. In the current three-dimensional graphics technology, mainly includes two categories: one is three-dimensional animation technology, and the other is three-dimensional virtual technology [1-3]. Three dimensional animation technology and three-dimensional virtual technology are the simulation of real and imaginary world. The animation is mainly used for movies, advertising and other pre planned demonstration; mainly used for virtual simulation, need to respond to user input, such as flight training, reservoir simulation, special operations training, driving simulation, scene reproduction, simulation demonstration, city planning, entertainment, machinery manufacturing and other applications. Among them, 3D virtual technology is undoubtedly a new, very advantageous application technology[4-6].Three dimensional animation technology, also known as three-dimensional pre rendering playback technology, that is, the first three-dimensional pre rendering, to get a full three-dimensional animation video, and then use the player to play the three-dimensional animation video. This traditional computer animation is made with key frames (for the main picture that appears in the process of motion, called key frames), so it is called keyframe animation or frame animation. Frame animation is a sequence of images or graphics composed of a number of consecutive pictures, that is, the moving path of the object needs to be manually specified. The tools used to make this kind of animation are 3D MAX, AutoCAD, MAYA, Soft-image 3D, LIGHTWAVE 3D, Renderman, Animator and so on.

## 2. Application Principle of 2. 3D Virtual Technology

Three dimensional virtual technology, also known as three-dimensional virtual simulation. Virtual simulation application is to use computer technology as the core of modern high technology to generate a realistic virtual environment, users with the necessary equipment and virtual environment objects interact and influence each other, so as to obtain similar feelings and experience of the real environment. This kind of feeling and experience is mainly guaranteed by the real time and interactivity of the system.

The basic interactive tasks of virtual environment basic interactive task virtual environment can be divided into four kinds: moving, selecting, manipulating and system controlling. Marching is also called point of view motion control. It refers to a kind of task that users change their viewpoint position and direction interactively in virtual environment. Head tracking can change the viewpoint direction, so we mainly study the viewpoint position and direction movement, that is, move from one place to another in the virtual environment. The choice is to pick up one or more virtual objects in a virtual environment for some purpose. Manipulation is a class of tasks that change the properties of virtual objects. Virtual object attributes include the position, orientation, proportion, shape, color, or texture of objects. System control refers to the user in the virtual environment for the completion of a task

issued to the system command, such as deleting a selected object, save the current position, add a new model, etc..

Using the tools of high level development platform. These tools are products developed by companies. Such tools are OpenGVS, VEGA, Vtree, X-IG, Worldup, WorldToolKit, OpenInventor, and so on. These development platforms are advanced 3D visualization libraries based on graphics standards such as OpenGL, which provide advanced API for software developers. The use of such a development platform to develop three-dimensional visual management system, the amount of code required is much less than 1. This reduces a lot of work to ensure a complete application system in a limited amount of time. Using this kind of development platform to develop 3D graphic application system has the advantages of good performance and short development cycle, but it needs to purchase platform and invest more.

## 3. The Feasibility of 3. 3D Virtual Interactive Technology in the Field of Art Education

In view of this situation, the three-dimensional virtual interactive technology can basically solve the problem of art education. Fine arts education is divided into theoretical appreciation and practical courses:

Traditional mode

The teacher before class one or two days before the time to teach the course arrangement, Professor knowledge requires each class, using PPT to make a good plan, or want to still life, model arrangement, in accordance with the second day course to arrange to yesterday. If the teacher has something on the day, you can call the squad leader, arrange the day's practice, or postpone the course.

Innovation model

The teacher will take the course classification, the second day of the course arrangement in the scene, as well as the interaction between teachers and students factors inside, video teaching is not a simple POWERPOINT. Using 3 dimensional projector, how to use the scene with the knowledge, improve the students' interest, such as curriculum needs can also be different professional experience (with commentary on the part), or with another class of students to interact with each other, can be synchronized using 3 dimensional projection. Because of the shortage of teachers, sometimes college teachers will have different courses at the same time, so the technology provides a lot of convenience for the teacher. When some courses, or simple sketch, color class cannot do it with the teacher entity, using the virtual teacher pre made the education curriculum (recycling), is the teacher's plan is not limited course, will put yourself in when importing AI (Artificial Intelligence), virtual teacher can answer frequently asked some students, such as his character background, why the creation of this work. Revise the mistakes that students often make, such as light and dark problems, structural problems, etc.. These are real teacher summed up, into the computer, set a good plan, the teacher can be remote into classroom computer in second days at the same time on other classes, or by remote control or remote education. In this way, the teacher does not have to postpone the course when there is a temporary event.

## 4. Conclusions

Although many of the content is through fantasy, but Einstein said: imagination is more important than knowledge. Through the comparison of this traditional mode and innovation model, we can draw the advantage of innovation model. Students are very familiar with the lack of domestic education level, but also see the teachers' hard teaching. The contemporary education model often makes students and teachers into a stalemate state, students are not interested in listening, the teacher does not teach passion. Innovation model must appear, in addition to advanced technical support. In addition, we should use advanced technology in fine arts education, and how to use, how to use, what effect these three issues is what I want to explore, but also the future development of innovative models and prospects.

## References

[1] A. Jangra1, Goel, Priyanka N. and, K. Bhati, Security Aspects in Mobile Ad Hoc Networks (MANETs): A Big Picture, International Journal of Electronics Engineering, pp. 189-196, 2010.

[2] L. Buttyan and J. P. Hubaux, Stimulating Cooperation in Self Organizing Mobile Ad Hoc Networks, Technical Report No. DSC/2001/046, Swiss Federal Institute of Technology, Lausanne, August 2001.

[3] Niyato D, Hossain E, HAN Z. Dynamics of multiple-seller and multiple-buyer spectrum trading in cognitive radio networks:A game-theoretic modeling approach. IEEE Transactions Mobile Computing, 2009, 8(8). http://dx.doi.org/10.1109/TMC.2008.157

[4] An Chengquan, Liu Yang. A Matching Game Algorithm for Spectrum Allocation Based on POMDP Model. 7th International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM), 2011:1-3.

[5] Yuedong Xu, John C. S. Lui, Dah-Ming Chiu. On oligopoly spectrum allocation game in cognitive radio networks with capacity constraints. Computer Networks, Volume 54, Issue 6, 29 April 2010, Page(s): 925-943

[6] Antonatos, S., Anagnostakis, K., Markatos, E., 2004. Generating realis- tic workloads for network intrusion detection systems. ACM SIGSOFT Software Engineering Notes 29 (1), 207–215.