

Research on visual application of environment design teaching based on VR technology

Yuan Xia

City College of Science and Technology, Chongqing University

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Abstract: VR technology and artificial intelligence, information technology and become three popular core technologies. VR technology, with its distinctive features and more in-depth convenient service, at present, has been widely used in all aspects of design, simulation and development. The teaching of environmental design is also one of the fields in which VR technology is widely used. This paper briefly introduces the features of VR technology and the application of VR technology in teaching visualization of environmental design specialty.

VR technology is the abbreviation of virtual reality technology. VR Technology has many characteristics such as multi-perception, interactivity, immersion and so on. VR technology is a comprehensive technology that encompasses computer graphics, simulation, multimedia, and more. VR technology can simulate the reality, let people in smell, hearing, touch and other aspects of the experience of human sensory functions.

At present, VR technology has been widely used in many fields of our life and work. For example, we are often exposed to immersive 3D Games, interior design, panoramic images and so on. Sure, a lot of people get their first taste of VR primarily through games and other channels, but there's a lot more to VR than that.

The application of VR technology is early in the field of teaching. But on the whole, although our country's environment design specialized teaching has obtained the certain achievement in the application VR technology aspect, it still has the insufficiency in many aspects.

1. The application status of VR technology in the teaching field of environmental design specialty

Since its birth, VR technology has been closely related to education and teaching. The earliest VR technology was applied in the field of education and teaching, artificial interaction. VR Technology came into China relatively late, but through the development of these years, it has made considerable progress in many aspects. No matter in the field of application or in the system construction, the development trend of systematization and scale is presented gradually. But on the whole, compared with foreign counterparts, there is still a big gap in our VR technology.

VR is a system technology. It needs computer graphics technology, communication technology, sensor technology, simulation technology as the basic support. China still has some problems in the construction of these basic disciplines, which results in our level of VR technology being still at a

relatively low level. Some of the more complex details of VR have to rely on foreign technology development teams.

On the whole, our VR technology has been widely used in the field of education and teaching, but the overall level is not high. In particular, at present, many colleges and professions in China do not have a clear understanding of the development of VR technology. Many in the industry are still looking at VR applications from the same old perspective and in the same old mindset. Some argue that VR is just a complementary development technology that has a very limited role to play in education and teaching. This view is very wrong. In recent years, the foreign educational and teaching VR auxiliary system has been encroaching on the domestic market with an irresistible trend. Objectively speaking, these educational and teaching assistant systems are well-made and rich in content, which can meet the educational and teaching needs of different groups. From the market feedback, the audience for these education and teaching support system is very recognized. Foreign products can achieve such an effect, to a large extent, and they focus on the development and application of technology has a great relationship. At present, the foreign countries have been vigorously promoting the holographic education and teaching system based on VR technology, the popularization of this system is only a matter of time. Once this system is applied on a large scale, the quality of education and teaching will be improved. Unfortunately, the development of VR application in the field of education and teaching in our country is slow, which is caused by the reasons of ideology and cognition, and by the fact that the present situation of our technological development is not enough to support our development plan. The overall level of the application of visualization in teaching of environment design based on VR technology is not high at present. Most of the application of visualization in VR technology teaching is limited to the display of environment or design effect. In human-computer interaction, the application of collaborative development and other fields is still at the initial stage.

2. VR technology features

VR has distinct technical features. In general, VR technology has the characteristics of interaction, immersion and polymorphic perception. Immersive is VR's most prized feature, which allows you to be in a real environment, to be part of it, and to see the details of your surroundings in the first person; Interactivity means that the user can interact with the surrounding environment. When the user immerses in the environment created by VR, not only the user can perceive the environment, but also the environment can perceive people. The user can interact fully in the VR scene. Polymorphic perception is also a bright spot in VR technology. The reason why it is called polymorphic is that people can not only get rich visual experience, but also get all-round information such as touch, motion and hearing, to give the audience an immersive sense of reality.

As far as technical features are concerned, VR should be at the top level of the whole technology, under which technologies such as communication, electronics and so on should be supported. At present, with the development of network technology and information technology, VR technology has been gradually moving towards the goal of networking

3. Research on the application trend of VR technology in teaching visualization of environmental design specialty

VR technology is more and more widely used in the teaching field of environmental design specialty. The trend of the application of VR technology in the teaching field of environmental design can be summarized as follows:

3.1 Big Data

Environment scene and so on are the typical representatives in the graphic image processing technology. One of the characteristics of image processing is the huge amount of information. Especially for high-definition video, it can not be described too much by massive data. At present, VR technology is only presented to the audience as a display and interactive technology, but with the gradual development and improvement of VR technology, big data has become the inevitable trend of future development. Driven by big data, VR can deliver more and more immersive experiences for the viewer

3.2 Networking

Networking technology is the mainstream trend of VR technology development. At present, the application of VR technology in the teaching field of environmental design is generally limited to single-point devices. How to realize the information transfer between different designers and the interconnection and interaction between different designers and developers has become the commanding height of VR technology development. Under the condition of network technology, VR network will connect the point with the point, and build a different virtual, realistic design and development environment. The experience is like being in a complete virtual world. Driven by network technology, teachers and students can even truly become the role itself in environmental design

3.3 Living

At present, the VR technology in the field of teaching and learning of environmental design mainly uses the proprietary equipment as the platform. How will the device miniaturization, convenience, VR technology into the real day-to-day applications, close to life has become the battleground of various VR equipment manufacturers. VR glasses are just one example. Now, some TV and game manufacturers have put in a special team to develop the relevant equipment. In the near future, we have every reason to believe that professional, life-oriented and convenient VR devices will make our education and teaching more efficient and speedy.

3.4 Standardization

The application of VR technology in the teaching field of environmental design is basically based on each manufacturer's own standards. With the wide application of VR, the VR technology standard in the field of teaching and learning of environmental design is going to be standardized. One direct reason for the slow development of VR technology application in education and teaching in China is that we did not have detailed guidelines for the whole industry before, and there were no standard constraints on the technology. At present, some experts and scholars have put forward their own ideas and plans on this issue, and standardization will become the criterion for the future development of VR Technology industry

3.5 Scale

As mentioned earlier, the development and application of VR technology in the field of education and teaching in China are mainly led by different companies. The advantage of this is that each manufacturer can develop the corresponding application according to its own technical strength and actual demand, but the disadvantage is also very obvious. There is no way to integrate

the strengths of the industry to focus on overcoming major problems and bottlenecks. On the contrary, the development of VR technology in relevant fields abroad is mainly concentrated in the hands of a few big companies, who have enough technology reserves and financial resources to expand the development of VR technology. The single-player model of Chinese enterprises has been unable to meet the needs of market development and technological breakthrough, which is not only a bottleneck problem in the application of visualization in specific industries, but also affects the development of the entire industry.

4. Conclusion

Environmental design specialty has its own remarkable characteristics. The visualization platform based on VR technology plays a very positive role in the development of environment design teaching. The application of VR technology in the teaching of environmental design specialty has become a general trend and has great potential. We need to approach this work with a high sense of responsibility and urgency, as much as possible, as soon as possible, as well as possible to promote a healthy and orderly combination of the two.

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Curriculum Reform and Practice of Environmental Design on Virtual Reality Technology.

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