Research on the Teaching Innovation of environmental Art Design Specialty Based on Computer VR Technology

Zeng Yuan¹*, Lu Fang², Shi Yi¹

¹Wanjiang University of Technology, Department of Environmental Art Design, Ma An Shan, An Hui, China, 243000
²Yurui Experimental Primary School, Wuhu, An Hui, China, 241000

*Corresponding author e-mail: zengyuan@wjut.edu.cn

Abstract. In the teaching course of environmental art design major, students are required to have a higher level of professional accomplishment. At present, there are still many shortcomings in the course teaching of environmental art design in domestic colleges and universities.

Keywords: Computer VR, Environmental Art Design, Curriculum Teaching

1. Introduction
At present, the main problems in the teaching of environmental art design major in China are mainly the poor adaptability of teaching methods, the gap between teaching methods and talent training objectives, and the weak faculty, which leads to the lack of professional quality ability of students after graduation from school. Therefore, it is necessary to innovate the teaching of environmental art design major to improve students' working ability.

2. Analysis of the current situation of practical teaching courses for environmental

2.1. Lack of innovative and inspiring new teaching methods
Environmental design is a creative discipline that describes the blueprint of life for people to create a lifestyle [1-3]. With the development of the society, new ideas, trends and trends emerge constantly, requiring the continuous absorption of new techniques and means in teaching methods. At present, the environmental design major in China basically follows the traditional paradigm of arts and crafts education, emphasizing the education of basic theory and basic skills. Most of them are based on the classroom teaching methods of teachers' speaking and students' listening, and lack of heuristic and dialogic interactive discussions and projects [4-6]. The participatory design course with design as the core fails to fully exploit students' ability to find, analyze and solve problems. It makes the students lack innovation ability and competitiveness, and it is difficult to adapt to the actual needs of the society in a short time.

2.2. Lack of qualified teachers both in theory and practice
At present, the overall development of college teachers' teaching ability is unbalanced. Generally
speaking, teaching ability is related to teachers' teaching age, educational background, professional title and basic professional quality. At present, there are still many deficiencies in teaching ability and practice of young teachers, which make it difficult to teach students advanced design ideas and methods that meet the real needs of the society. Therefore, the environmental design major lacks both theoretical and practical faculty.

2.3. Lack of practical teaching system with strong operability
In order to meet the needs of the society, many colleges and universities have set up practical teaching courses with a certain period of time and also built teaching training rooms to facilitate the development of practical courses. However, to carry out practical teaching effectively, continuous investment is needed in teaching sites and facilities. Some schools synchronous expanding off-campus practice base, but can accept the number of training students is limited, difficult to carry out the specific teaching practice teaching field the lack of basic conditions make the practice teaching quality is not guaranteed, is bound to cause students theory and practice, knowledge and ability to disconnect, difficult to meet the actual demand of the society.

3. Features and advantages of VR virtual reality technology

3.1. Features of VR Virtual Reality technology
VR virtual reality technology is a computer system is used to create and experience the virtual world of technology, in view of the real things in daily life, can be combined with computer technology to compile a can read data signal, and then through all kinds of output devices to debug into a human can feel scene: the use of language and gestures, forming the man-machine interaction pattern, gives the user a better simulation experience and be applied to various fields.

VR virtual reality technology is characterized by immersion, interaction and imagination, etc., among which, it focuses on human psychological and physiological characteristics as the basis point to set the sensory interaction mode of human body, so as to immerse people in the virtual environment, provide space for creation and imagination, and thus obtain rich emotional experience. At present, VR technology is mainly applied in the field of education based on human-computer interaction. Vocational colleges should give full play to the advantages of VR technology, help students create a vivid and realistic learning environment, and enhance students' memory through real feelings, so as to fundamentally promote the high-quality development of talent training.

3.2. Advantages of VR virtual reality technology

3.2.1. Immersion of virtual reality technology
Users as part of the virtual environment can feel their own initiative, immersed in the virtual environment and participate in various activities and interact with all sorts of things in a virtual environment, and through comprehensive sensory systems to experience a virtual world are part of the stimulus, make it difficult to distinguish itself is in a computer system created by the 3d virtual world, give a person a kind of immersive feel (figure 1 VR virtual world game).

Figure 1. VR virtual world game.
3.2.2. Interaction of virtual reality technology

Users can use some sensing devices to operate objects in virtual environment, VR technology provided by the human-computer interaction is deep, such as: when the user to capture the objects in a virtual environment with the hand, can experience the feeling of hand grip objects, even can feel the material, size and speed of the object, feeling like the real objective world (figure 2 VR virtual realistic).

![Figure 2. VR virtual reality.](image)

3.2.3. Concept of virtual reality technology

Users can rely on their own sensory system and cognitive ability to take the initiative to contact new things in the virtual space, independently explore information and acquire new knowledge, deepen concepts and generate cognitive creative inspiration. Immersed in the virtual world, users can give full play to their creativity to recreate a real space or build a new or even impossible environment, which is conducive to enlighten users' creative thinking.

In addition, from the perspective of the designer, the application of this technology can also enable the designer to carry out design in the virtual world, which means that the design is not carried out on a separate screen, but in the real picture for artistic creation. In this state, we can better communicate and interact with works, so that we can become a part of art design. The designer's sense of immersion is stronger, and the creative inspiration is better captured. Designers enter a space created by themselves, the desire to create is greatly stimulated, the effect of the design can also be more creative.

3.2.4. Improve the fluidity and richness of the works

In traditional 2d graphic design, it is not very easy to present 3d objects. Art designers want to show the complete works in their mind to people, with the help of traditional two-dimensional technology, it is also very difficult, it can be said that this kind of work is not complete, so that people can see the designer's work in its entirety. In order for people to fully understand the work, they need to show the content of the work from different angles. In this case, VR technology is needed. The application of this technology can make the design work move back and forth freely, and the designer can also improve the design work from different angles and levels, thus greatly enhancing the fluidity and richness of the work.

4. The impact of VR virtual reality technology on landscape art design

In order to make the design works the best display, in the interaction of virtual reality technology, the experience of the best quality to bring students, students through the VR devices, to stimulate enthusiasm of landscape art design class, find interest in learning, more intuitive, clear feelings of landscape art design case, and to grasp the knowledge points and course details.

4.1. VR virtual reality technology improves the perception of works

In the traditional landscape art design course, teachers will constantly expand design elements in their own teaching projects during the teaching process, so as to increase students' perception degree and enhance the capacity of the overall knowledge of the course in a disguised way. However, in the traditional course model, due to the limitations of conditions and technology, it is not possible to
present it to students quickly and accurately. Traditional landscape art design class, from the most primitive graphics rendering to now in use of 3 d modeling technology, from the original single rendering according to modeling renderings, but even if again rendering technology, also gradually can't bring the realistic effect of experience to the virtual reality technology, virtual reality technology can meet the demand for landscape art design, design student can bring students real as the "first person" way to feel different element in the landscape art design class design and planning. To adjust the original design rendering mode and correction, make the students out of the campus, not in the classroom can effect, as it were, truly feel the teacher in the classroom on the transmission of content and design concept, so as to enhance their mastery of classroom design concept and familiar, in the process of experience, with the Angle of its own perception of landscape art design details, increase the learning efficiency, inspire design potential and mobilize enthusiasm and initiative of learning (FIG. 3) 3 d modeling.

**Figure 3.** 3D modeling.

4.2. VR virtual reality technology to enhance classroom interaction

With the steady development of virtual reality technology in the college of landscape art design class plays a very important role, in landscape design in the process of operation, the first thing you need to use CAD software to design drawings of the technology, draw the proportion of the latter was used to model the base, and the use of other relevant software for 3 d modeling, rendering the model output, after the completion of the final in landscape design scheme adopting virtual reality show, arts classroom use of virtual reality technology in the college, teaching to teach the theory of knowledge as well as the design thinking, make students more easy to master the knowledge points, experience of The design intention, and can more directly interact with the landscape design scheme to a feast. In this process, students can use their understanding of landscape design ideas, and to adjust design and planning, again for the students ability is not strong, the tools of a party was quick to express their design directly by virtual reality technology, through the interaction between students and teachers, work together to find problems, share the design thinking, increase the role of design inspiration, let the student real with his work, the typical landscape cases produce kind of interaction.

5. Conclusion

To sum up, in the teaching activities of environmental art design major, the application of computer VR technology can effectively improve the perception of works, at the same time, it is conducive to students' display of their own works, and enhance the interaction of the class. Therefore, the teaching of environmental art design major should make full use of computer VR technology to promote the development of environmental art design major teaching activities.

References

[1] Zhang Ye. Innovative application of vr virtual reality technology in practice teaching of landscape design course of environmental design specialty in Colleges and universities [J]. Architecture and budget, 2020 (10): 35-37.

[2] Xu Yan. Current situation and development innovation of practice teaching course for
environmental design specialty [J]. Industrial design, 2020 (07): 45-46.

[3] Deng Gang, Cheng Xinying. Teaching mode and method of landscape design course for environmental art design specialty [J]. Yangtze River series, 2020 (19): 79 + 81.

[4] Li Chao Xian. Research on teaching innovation mode of environmental art design major in the background of Internet plus. [J]. education and teaching forum, 2020 (26): 370-371.

[5] Jiao Xiaojie. Teaching innovation of basic courses of art design specialty in Colleges and Universities Based on professional ability training [J]. Modern and ancient cultural creation, 2020 (16): 91-92.

[6] Feng Hui. Research on teaching mode of landscape design course for environmental art design major [J]. Art education research, 2020 (03): 104-105.