Application Analysis of VR Technology in Environmental Art Design Teaching in Application-oriented Universities

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Abstract: With the development of science and technology, more and more new technologies have begun to be used in college education and teaching. Environmental Art Design is a relatively comprehensive major, mainly involving knowledge in the two fields of science and art. In the traditional teaching of Environmental Art Design, it is difficult for students to clearly perceive the design effect, which affects the student’s learning effectiveness. The emergence of VR technology has effectively improved this situation. This article starts from the analysis of the problems existing in the teaching of Environmental Art Design in application-oriented universities, focusing on the application of VR technology in the teaching of Environmental Art Design in application-oriented universities, hoping to bring some enlightenment and reference to the majority of teachers, and further improve the environment of the teaching quality of art and design majors.

Keywords: VR Technology; Application-oriented Universities; Environmental Art Design; Application Analysis

In recent years, the application of information technology in China has become more and more widespread and in-depth. Among them, the application of VR technology is becoming more mature. The full name of VR technology is “virtual reality technology”. The practice has proved that the application of VR technology in the Environmental Art Design teaching of application-oriented colleges and universities has improved various problems existing in traditional teaching, can make students feel more immersed in learning, and greatly enhance students’ learning effectiveness.

1. Problems existing in the teaching of Environmental Art Design in application-oriented universities

1.1 The teaching content of Environmental Art Design teaching is relatively backward

At present, the teaching content of Environmental Art Design in some application-oriented colleges and universities in China is relatively backward, mainly manifested in the following aspects. On the one hand, the teaching content of Environmental Art Design in some application-oriented colleges is relatively fixed, and teachers have not updated the teaching content with the times, leading to the “disconnection” between students’ knowledge and the actual situation, which is not conducive to students applying theoretical knowledge in real life[1]. On the other hand, in some application-oriented colleges and universities, for the Environmental Art Design major, teachers mainly based the teaching on the content of the textbooks. There is no necessary extracurricular knowledge, so that the students’ learning resources are limited. Moreover, some application-oriented university Environmental Art Design textbooks have a long history, and the content of the textbooks will...
be backward and lagging back, which affects students’ interest in learning.

1.2 The teaching model in Environmental Art Design teaching is too traditional

The teaching model is not only related to the teaching effectiveness of teachers, but also to the learning interest of students. The teaching mode of Environmental Art Design in some application-oriented universities is too traditional. First, in some application university Environmental Art Design teaching, the teaching mode adopted by teachers is full of oral teaching. In this teaching model, teachers dominant in the classroom, and the role of students is relatively passive, which is not conducive to stimulating the subjective initiative of students. Second, in the Environmental Art Design teaching of application-oriented universities, teachers pay too much attention to the explanations, they do not pay attention to interaction with students. For the Environmental Art Design major, students need to have their own thinking and a certain sense of innovation. If teachers do not pay attention to the interaction with students, it is difficult to cultivate students’ independent learning ability and innovation ability, which is not conducive to improving students’ learning effectiveness.

1.3 Practical teaching needs to be improved in Environmental Art Design teaching

In Environmental Art Design teaching, practical teaching is important content. However, in reality, the practical teaching of many application-oriented universities needs to be improved: on the one hand, in some application-oriented universities, Environmental Art Design teachers pay too much attention to the explanation of theoretical knowledge and neglect practical teaching, leading to students’ unbalanced theoretical knowledge and practical application. Affected by this teaching model, students’ practical ability is difficult to improve, which is not conducive to the future employment of students. On the other hand, in some application-oriented colleges and universities, the practical teaching of Environmental Art Design is too simple. It is too formal and has not established a complete practical teaching system. It is difficult for students to really improve their practical ability in a single practical project for a long time.

2. Application of VR technology in Environmental Art Design teaching in application-oriented universities

2.1 Based on the application of VR technology, update the teaching content of Environmental Art Design

In view of the problems existing in the teaching content of Environmental Art Design in application-oriented colleges and universities, college teachers must have a renewal consciousness. Specifically, college teachers can work hard in these aspects: On the one hand, in the Environmental Art Design teaching of application-oriented colleges, the teaching content should be updated in a timely manner according to social needs. Based on the practical application of VR technology, teachers should be good at using VR technology to guide students to apply theoretical knowledge to real life. For example, in VR technology, the desktop virtual reality technology can be applied to Environmental Art Design teaching. In desktop virtual reality technology, teachers and students can convert knowledge into teaching content according to specific knowledge modules, so that students can practice operations and apply the knowledge they have learned to practical operations. on the other hand, in Environmental Art Design teaching, teachers should not only teach according to the content of the textbook, but also expand the necessary extracurricular knowledge. Taking the application of VR technology in the field of Environmental Art Design as an entry point, teachers can enrich students’ extracurricular learning resources through the knowledge of these practical application fields, and stimulate students’ interest in learning. For example, based on the application of VR technology, teachers can introduce immersive head-mounted display devices. After students wear VR glasses, their senses will be impacted by the virtual world, and students will be more curious about what they have learned and have a more desire to explore.

2.2 Vigorously introduce VR technology to optimize the teaching model of Environmental Art Design

To optimize the teaching model of Environmental Art Design, First, in the teaching of Environmental Art Design in application-oriented colleges and universities, teachers should improve the traditional teaching model, give full play to the main role of students, and let students have more initiative in the classroom. For example, after teachers introduce VR technology, in the study of Environmental Art Design, students can have a 360-degree experience of the design effect, and be put in an
immersive learning atmosphere\cite{5}. In such a learning atmosphere, students’ learning can be very fluent, which is conducive to stimulating students’ innovative thinking. Second, in the application-oriented college Environmental Art Design teaching, teachers should not only pay attention to their own explanations, but also pay attention to the relationship with students. They must be good at cultivating students’ independent learning ability and innovation ability through good teaching interaction. For example, based on the application of VR technology, in the teaching of Environmental Art Design, teachers can carry out scenario simulation teaching, and use VR technology to build different virtual scenes, allowing students to analyze, design, and summarize according to these specific virtual scenes to improve students’ comprehensive design ability.

### 2.3 Use VR technology as a guide to improve the practical teaching of Environmental Art Design

In order to better improve the practical teaching of Environmental Art Design in application-oriented colleges and universities, colleges and universities can improve from the following aspects. On the one hand, in the teaching of Environmental Art Design in application-oriented colleges, teachers should not only pay attention to the explanation of theoretical knowledge, but also pay attention to practical teaching and let theory knowledge and practical application be coordinated to effectively improve students’ practical application ability. For example, in the traditional practical teaching of Environmental Art Design, limited by the teaching time, teaching conditions and other factors, the practical exercises that students are exposed to are very limited. After the introduction of VR technology, VR technology can create an immersive learning environment. In this learning environment, students can break through the limitations of time and space and accept more adequate practical exercises, which is conducive to improving students’ practical ability. On the other hand, in application-oriented college Environmental Art Design teaching, it is necessary to establish a complete practical teaching system to avoid the unity and formalization of practical teaching. For example, under the guidance of VR technology, colleges and universities establish long-term and stable cooperative relations with off-campus enterprises to jointly build a school-enterprise virtual reality technology laboratory. With the school-enterprise virtual reality technology laboratory as the practice platform, colleges and universities can formulate a systematic and standardized system to improve the students’ practical teaching system in terms of practical projects, practical methods, and practical evaluations.

### 3. Conclusion

In summary, the integration of VR technology into the Environmental Art Design teaching of application-oriented colleges and universities can increase students’ interest in learning and enhance their learning effectiveness. In the future, with the maturity of VR technology, its applications in Environmental Art Design teaching will become more and more diversified. Brand-new technology will inspire brand-new teaching concepts. As college educators in the new era, they must maintain the learning spirit of advancing with the times, actively explore the deep integration of VR technology and Environmental Art Design teaching, and bring better quality teaching to students. In this process, university leaders should provide support in terms of human and material resources, and work together with the faculty and staff of the school to create a systematic and standardized VR technology education system.

### References