

# Virtual Reality Technology Transitions and Reshape the Aesthetic Education Paradigm

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**Abstract:** With the rapid development of technology, virtual reality technology has gradually penetrated into the field of education. The traditional aesthetic education model is limited by the lack of time and space and interaction. The virtual reality technology is based on its immersive and interactive characteristics. Provides new possibilities. Elapse the aesthetic education from three aspects: immersive experience, interactive teaching and time and space reshaping. Through the comparative analysis of the case, the actual application and innovation teaching model of virtual reality technology in aesthetic education is discussed, and the virtual reality technology and aesthetic education are better integrated to provide more effective and innovative ways to cultivate students' aesthetic ability.

**Keywords:** Virtual reality technology; Aesthetic education; Paradigm transformation; Reshaping.

## 1. Introduction

Virtual reality technology originated from scientific and technological exploration in the middle and late 20th century. In the 1960s, the first real virtual reality equipment came out, and it could simulate a simple three dimensional environment and user interaction. With the development of computer technology and graphics, virtual reality technology has developed rapidly in the 1980s and 1990s, which can simulate a more realistic and complex virtual environment. At the same time, virtual reality technology has also begun to apply to games, education, medical care and other fields. After entering the 21st century, VR technology ushered in explosive growth [1]. With the continuous upgrade of hardware equipment and the continuous innovation of software technology, virtual reality technology has been able to simulate a very realistic and highly immersive virtual environment, and gradually integrates with other technologies such as artificial intelligence and the Internet of Things, forming a more complete completeness, Smart virtual reality ecosystem.

In the traditional aesthetic education model, aesthetic education is often limited by fixed textbooks, teaching methods and time and space environment, which makes students' aesthetic experience relatively limited. Traditional aesthetic education often depends on static artistic works, such as painting, sculpture, etc., and students can only passively watch and listen to the teacher's explanation, and lack the opportunity to participate in and interact. Single, it is difficult to comprehensively cultivate its aesthetic ability.

Virtual reality technology has a vital impact on the transformation of aesthetic education paradigms. It can not only make up for the lack of traditional models, but also promote aesthetic education to a new height. Traditional aesthetic education is limited by the restraint of time and space and interactivity. Students' experience is relatively limited, and virtual reality technology provides students with immersive and interactive characteristics to provide students with an immersive artistic experience, so that they can deepen their in depth thoroughly. Feel and understand the

connotation of art works. This transformation not only enriches the content of aesthetic education, but also enhances students' participation and interest. The introduction of virtual reality technology is an inevitable choice for aesthetic education paradigm transformation. Virtual reality technology can break the restrictions of regional and cultural and allow students to expose more extensive art resources to cultivate their cross cultural aesthetic capabilities. The international vision and innovative talents are of great significance.

## 2. Resination of Virtual Reality Technology on Aesthetic Education

### 2.1. Immersive environment to improve students' aesthetic perception

The 10th International Aesthetic Conference discusses the aesthetics of virtual aesthetics or digital aesthetics of virtual reality and phenomena of virtual reality and phenomena of two dimensional and three dimensional simulation [2]. The virtual reality technology simulates a highly realistic three dimensional environment, making students seem to be in art works. By building an immersive environment, it provides students with a new aesthetic experience method, which greatly enhances students' aesthetic perception. The immersive experience allows students to feel the details and charm of art works more intuitively, thereby deepening their understanding and appreciation of the work. For example, on Google Art and Culture Platform, students can observe the use of paintings and colors of painting up close, and even feel the emotions and atmosphere passed by painting. This personal experience allows students Perception of beauty.

Virtual reality technology can also enhance students' aesthetic experience through multi sensory interactive design. Traditional aesthetic education often only focuses on visual experience, while virtual reality technology can integrate various sensory such as sound and touch into experience. For example, at the virtual concert, students can not only appreciate realistic music performances, but also feel the rhythm of the music and the body vibration brought by the

melody firm. Thereby improving the level and depth of aesthetics.

## 2.2. Virtual reality technology to realize interactive teaching

In aesthetic education, the use of virtual reality technology to realize the interaction between students and art works is an innovative and efficient teaching method. Using virtual reality technology to create a three-dimensional space that can be freely explored. In this three dimensional space, art works are no longer a static display, but have become three dimensional objects that can be touched and interactive. Perform and explore art works through virtual reality devices, such as helmets and handles, observe the works from different angles, enlarge the details, and even "enter" the paintings to interact with the elements in the painting. For example, at the VR panorama of the Beijing Palace Museum, students can choose different viewpoints, such as different palaces, the Forbidden City Square or the Forbidden City architecture. They walk freely in the Forbidden City through virtual reality equipment and feel the style and atmosphere of ancient royal architecture [3] Essence This interaction allows students to actively participate in the aesthetic process and improve their learning interest and motivation.

In addition to direct interaction, virtual reality technology can also enhance the connection between students and art works by adding virtual elements. For example, when appreciating music works, virtual reality technology can create a virtual environment that matches music, such as forests, ocean or starry sky. Students can feel the rhythm and melody of music in these environments, interact with virtual elements, such as touching the drifting notes or dancing with the rhythm of music. In addition, virtual reality technology can also provide students with opportunities for creative art works. Through virtual reality equipment and related creative software, students can freely create their own art works in the virtual environment. They can create a unique three dimensional form, choose different materials and colors, and even create works with dynamic effects. This creative process not only improves students' participation, but also cultivates their creativity and artistic expression ability.



Figure 1. VR case of VR of the Palace Museum

## 2.3. Broken time and space restrictions on traditional aesthetic education

Traditional aesthetic education is largely limited by time and space, making education content, methods and resources relatively limited. The emergence of virtual reality technology has brought revolutionary changes to aesthetic education and broke these space time restrictions. First, virtual reality technology breaks the time limit. In traditional aesthetic education, students can often only be educated within a specific period of time, such as the time in the class,

and virtual reality provides a 24-hour uninterrupted learning environment. Students can enter the art world through virtual reality equipment at any time and at any time and place, and learn and explore anytime, anywhere. Secondly, virtual reality technology also breaks space limitations. In traditional models, aesthetic education is often limited by physical spaces such as classrooms and art galleries, and students can only expose limited art works. And virtual reality creates an unlimited three dimensional space. Students can shuttle freely in this space and come into contact with art works from all over the world. Whether it is the sculpture of ancient Greece, the painting of the Renaissance, or the modern art installation, it can be presented to the students through virtual reality technology.

In addition, virtual reality technology also simulates different historical periods and cultural backgrounds. The HTC vive Studio team produced the VR version of "Qingming Shanghe Tu VR". In the virtual environment, crossing time and space, experience the cultural atmosphere and art of different historical periods in person, and personally experience the cultural atmosphere and art of different historical periods. Style [4], this cross-time and space experience can better understand the development of art and diversity.



Figure 2. Qingming Shanghe Tu (Ascending the River at Qingming Festival) (VR case)

## 3. Application Cases of Virtual Reality in Aesthetic Education

### 3.1. Virtual reality aesthetic education practice of the Palace Museum of China

In recent years, the Palace Museum has actively introduced virtual reality technology to create an immersive court cultural experience space for the audience. In this virtual reality space, the audience can travel through time and space and feel the atmosphere of the ancient court in the situation. By wearing a virtual reality helmet, the audience can stroll in the virtual Forbidden City and appreciate the highly restored court architecture, furnishings and artworks [5]. At the same time, virtual reality technology also simulates various rituals and activities of ancient courts, such as the emperor's upper dynasty, palace dance, etc., allowing the audience to understand the ancient court culture more deeply.

In addition, the Palace Museum also uses virtual reality technology to develop a number of interactive games and educational applications to allow viewers to improve their aesthetic capabilities in entertainment. These applications are based on the theme of ancient court culture, combining modern game elements, attracting the participation of a large

number of young audiences. Through this way of entertainment, the Palace Museum successfully spread traditional culture to a wider group.

### **3.2. Google Art and Culture's Virtual Reality Aesthetic Education Project**

Google Art and Culture is a project dedicated to digitizing global art and cultural resources. The project actively introduces virtual reality technology, providing audiences with a new artistic appreciation and learning platform. On this platform, audiences can visit museums and art museums from all over the world through virtual reality equipment. These virtual museums highly restore the exhibition environment and art display methods of the physical museum, making the audience as if they are in a real museum [6]. At the same time, virtual reality technology also provides audiences with rich interactive functions, such as amplifying details, rotating viewing, real time commentary, etc., so that the audience can understand the connotation and value of art more deeply.

In addition to the virtual museum, Google Art and Culture also used virtual reality technology to develop a number of art education applications. These applications are based on the theme of art history, art review and artistic creation. Combine the immersion and interactive characteristics of virtual reality technology, they provide audiences with a more intuitive and vivid art learning experience. Through these applications, audiences can easily learn artistic knowledge at home and improve their aesthetic ability and creative level.

### **3.3. Case Comparison Analysis**

From the above two aesthetic practice cases, it can be seen that China and foreign countries have their own characteristics in the practice of virtual reality aesthetic education. The Palace Museum focuses on combining traditional culture with modern science and technology, and enhances the audience's aesthetic experience by creating an immersive court cultural experience space; while Google Art and Culture pays attention to digitizing global art and cultural resources to build virtual museums and art education by constructing virtual museums and art education Applications to promote art education and cultural communication.

In terms of technical application, both cases make full use of the immersion and interactive characteristics of virtual reality technology to enhance the audience's aesthetic experience. However, it is slightly different in the specific implementation method: the Palace Museum pays more attention to the reproduction of historical scenes and the development of interactive games; while Google Art and Culture pay more attention to the presentation of artistic details and the development of art learning applications. In terms of educational concepts, both cases emphasize the importance and necessity of aesthetic education. The Palace Museum pays more attention to the inheritance and promotion of traditional culture; Google Art and Culture pay more attention to art education and cultural exchanges in global vision.

## **4. The Challenges and Outlook of Virtual Reality Technology in Aesthetic Education**

### **4.1. The limitations of virtual reality technology in aesthetic education**

Although the application of virtual reality technology in aesthetic education has brought a lot of innovation, there are also some limitations. First of all, due to the limitations of hardware and software, its simulation effect often cannot fully reach the level of real world. Secondly, high quality virtual reality education resources are relatively small and the production costs are relatively high, which makes many schools and educational institutions unable to obtain sufficient quantities and quality virtual realistic education resources, thereby limiting its widespread application in aesthetic education. [7]. In order to promote more extensive application of virtual reality technology in aesthetic education, it is necessary to further improve technology, enrich educational resources, reduce costs, and allow more students and education institutions to enjoy the high -quality aesthetic education experience brought by virtual reality technology.

### **4.2. Teachers and students adapt to new technologies**

The introduction of new technologies in the field of education is accompanied by teachers and students' challenges to their acceptance. These challenges are mainly due to unfamiliarity of new technologies, the constraints of traditional concepts, and the limitations of the technology itself. For teachers, accepting new technologies means that they need to change their teaching habits and methods in the past, and to master new technologies, they also need to invest extra time and energy. For students, the introduction of new technologies requires a certain adaptation period. Some students do not know how to use new technologies to learn. Therefore, in the face of the challenges of the acceptance of new technology, teachers and students need to maintain an open mentality and actively try and master new technologies.

### **4.3. The development of virtual reality technology in the field of aesthetic education in the future.**

In the future, the development trend of virtual reality technology in the field of aesthetic education will be more obvious. With the continuous maturity and cost of technology, the popularization rate of virtual reality equipment will increase significantly, so that more educational institutions can introduce this technology. At the same time, virtual reality education resources will be more abundant and diversified, covering various art areas and historical periods, and provide students with a more comprehensive aesthetic experience. In addition, virtual reality technology will pay more attention to the integration with traditional teaching methods, form complementary advantages, and enhance the teaching effect [8]. Students should be encouraged to actively participate in virtual reality aesthetic education activities, and improve their aesthetic ability through personal experience. In short, virtual reality technology will play an increasingly important role in the field of aesthetic education, help students break through time and space restrictions, deeply feel the charm of art, enhance the aesthetic ability and creativity, and

promote the update of the concepts of aesthetic education and the change of education models.

## 5. Conclusion

Virtual reality technology is profoundly affecting the paradigm of aesthetic education and triggering its transformation and reshaping. This change not only touch the surface form of education, but also directly to its core concept. The traditional aesthetic education method is limited by physical classrooms and static textbooks, while virtual reality opens a door to infinite possibilities for learners. It enables learners to feel the charm of art, history and culture, Dialogue, this immersive experience undoubtedly deepen the depth and breadth of the aesthetics. In addition, virtual reality technology has also promoted the personalized development of aesthetic education. Each learner can find the learning path and rhythm that suits you in a virtual environment. This customized education method is more in line with the concept of modern education.

Looking forward to the future, with the continuous advancement and popularization of technology, the application of virtual reality in aesthetic education will be more extensive and deeper. We look forward to seeing more excellent works emerging and providing learners with richer and diverse aesthetic experiences. At the same time, I also believe that virtual reality technology will continue to promote the innovation and development of aesthetic education, and cultivate more new era talents with noble aesthetic interest and creativity.

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