



# Research on Application of Virtual Reality Technology in Visual Design of Traditional Drama Stage

Yiyang Zhang<sup>1</sup>, Tao Chen<sup>1</sup>, Yiling Dou<sup>1</sup>, Manqi He<sup>1</sup>, Zhiyue Zhang<sup>2</sup>

<sup>1</sup> Universiti Malaya, Kuala Lumpur, Malaysia

<sup>2</sup> Science and Technology College of NCHU, Jiujiang, China

---

**Abstract:** With the rapid development of society, digital technology is applied to art field. The application of virtual reality technology in the traditional drama stage visual design is not only conducive to the audience's appreciation of the drama. It also provides the communication carrier for the traditional drama art to fit the development of The Times. Virtual reality technology brings innovation to the development of traditional culture and art. This not only meets the aesthetic needs of the public, but also a new practice of traditional cultural innovation and transmission. This research is devoted to exploring the significance and strategy of virtual reality technology in the visual design of traditional drama stage

**Keywords:** Virtual Reality Technology, Visual Design, Traditional Drama Stage

---

## 1. Introduction

### 1.1 Research Background

Traditional drama stage design is a kind of art, which can influence the feelings of audiences. All elements in the stage design of a drama are designed to create atmosphere, convey emotions and devote to artistic conception. Light, color, and form on the stage can trigger the imagination of audiences and thus enhance their sensory experience. However, there are difficulties in the visual design of traditional drama stage. On the one hand, the visual design of traditional drama usually has the characteristics of simplification. So the audience needs to construct images on their own when appreciating traditional drama. On the other hand, making large traditional theatrical stage props is cumbersome and difficult to carry. And the specific prop can only serve one drama performance. The storage of used props is also a problem.

### 1.2 Research Significance and Purpose

With the development of diverse aesthetic demands in society, traditional drama needs attention. Therefore, in order to keep the unique style and quality of traditional drama and make it better adapt to the development of society, it is necessary to optimize the stage design of traditional drama. Virtual reality technology can be applied in it. Virtual Reality technology (VR) is a computer-generated interactive visual simulation system that can transmit information through various forms such as touch, hearing and vision, which can provide audiences with immersive experience, which is conducive to transforming the style of traditional drama stage and making traditional drama more attractive to contemporary audiences. Nowadays, digital technology has long been integrated into people's lives, providing a new carrier for the inheritance of culture and art. The integration of virtual reality technology into the visual design of traditional drama stage is conducive to improving people's interest and love for traditional drama. In addition, the combination of technology and art not only promotes the traditional drama art to break traditional stereotypes and make innovation, but also brings different audio-visual enjoyment to the audience. Therefore, it is of great significance to explore the application meaning and strategy of virtual reality technology in the visual design of traditional drama stage.

## 2. Literature Review

### 2.1 Definition of Virtual Reality

VR technology is a new and practical technology that develops rapidly in the 20th century. It takes computer as the main medium to form a virtual three-dimensional world, and can provide users with a simulated experience, so that users have a sense of being immersive, and observe all kinds of things in three-dimensional space without being limited by time and place. With the advancement of computing technology, the application of VR technology expands to art fields such as music, film and game. In recent years, the exploration of digital art has also focused on resource construction.

## **2.2 Researches of Virtual Reality and Visual Design of Drama Stage**

Some researchers analyzed the researches of virtual reality and visual design of drama stage. Qiao Hui(2022) explores the importance of the application of new media technology in drama stage. She points out that new media technology can make drama stage more attractive and help audience appreciate the drama art[1]. Wang Ya(2023) analyzes the application strategies of virtual reality technology in traditional drama stages[2]. Ding Beijie(2024) investigates the innovation and inheritance brought by the combination of digital technology and opera art[3]. It can be concluded that the application of virtual reality in visual design of drama stage is a focus of research field. However, few researches focus on the research of visual design of traditional drama stage. Traditional drama is of vital importance in Chinese traditional art. Therefore, this study explores the application of virtual reality technology in visual design of traditional drama stage under the guidance of immersive experience theory.

## **3. Case Analysis**

### **3.1 Increase Audience Immersive Experience**

As a kind of stage performance, the traditional drama art has certain significance and cultural characteristics based on its actors' body performance and stage scenes. For example, the fight scene between Ren Tanghui and Liu Lihua in the traditional Peking Opera *Sancha* is a typical example. The actors in the drama convey the plot of the drama through their body movements and the atmosphere created by the stage. If the audience has certain aesthetic accomplishment and basic knowledge of opera, they can understand the drama. At this time, there is a certain physical distance between the opera stage and the audience, and the audience mainly pays attention to the physical performance of the actors and the plot of the drama[4].

However, the use of virtual reality technology can increase audience engagement, allowing them to see closely the content of the traditional theater can not be carefully appreciated. In this way, the audience can deeply appreciate the situation of the drama. Virtual technology is applied to traditional drama stage to create a virtual scene. Opera actors can perform in virtual scenes. The virtual scene changes with the actor's body movements. The scene of the stage moves with the actors. For example, in the visual design of the stage of the traditional drama *Peony Pavilion*, the audience can switch scenes according to their personal preferences, thus achieving the goal of immersive viewing. Visitors can walk through the Suzhou gardens, watch the lotus flowers surrounded by dripping green leaves, and even sprinkle fish food into the pond to amuse the fish. The drama space in virtual reality technology has a high sense of immersion, which transmits performance information to the audience from multiple perceptual channels such as vision, touch and hearing. It not only meets the appreciation needs of the audience, but also provides a media for the dissemination of drama.

### **3.2 Assist Stage Props and Background Preparation of Traditional Drama**

Virtual reality technology can also assist traditional drama to express real situations. For example, a variety of props are needed on the stage of a traditional drama. Stage actors use fictional actions to complete the performance of heavenly palace, fairy and other elements, which can better express the idea and connotation of the drama. Virtual reality technology makes the performance more vivid. In addition, due to the limitations of time and space, some props needed for traditional theater stages are difficult to present. For example, the Heavenly Palace in Huangmei Opera "*Heavenly Perfection*" is magnificent and solemn, and the temple in Cantonese opera "*The Legend of the White Snake*" is flooded with water in the golden mountains and poured with rain. Opera directors can use virtual reality technology to present the virtual stage background. As a result, the background of the opera performance will be more lifelike, helping the audience to appreciate the traditional drama content[5].

### **3.3 Attract Audiences' Attention with Great Viewing Experience**

The application of virtual reality technology can make the audience obtain a better experience while watching the drama stage. New media technology integrates virtual reality into the drama stage, making the drama stage experience better. Virtual images and videos are added to the drama stage. These visual elements will represent the background of the drama and create a dramatic environment. For example, in tragedies, black and dark visual elements are added, while comedies highlight comic visual elements such as red. Virtual reality technology will make the theatrical stage present a real scene effect, the audience can feel like a real scene. Through virtual technology, audiences' interest in traditional stage drama can be enhanced. It is conducive to the inheritance of traditional Chinese culture and the dissemination of traditional Chinese stage drama.

## 4. Conclusion

Virtual reality technology provides props and background through holographic projection or simulation in traditional drama stage visual design. This can improve the efficiency of stage visual design, promote the innovation and interactivity of artistic expression. Besides, it can also provide the audience with an interactive and participatory stage experience. With the further development of virtual reality technology, its future will provide designers with new creative space and promote the continuous development and innovation of traditional drama stage visual design.

## References

---

- [1] Qiao Hui. New media technology in the application of drama stage value [N]. Including the Chinese culture, 2022-05-20 (003).
- [2] Wang Ya. Application strategy of virtual reality technology in traditional drama stage [J]. Arts Education, 2023, (09): 147-150.
- [3] Ding Beijie. Digital technology on the innovation of the traditional opera and aesthetic connotation to explore [J]. Journal of beauty with the time (on), 2024, (7) : 125-128.
- [4] Zhuang Zhaofa. Experimental exploration of new media for drama performance: A case study of online creation of drama Thunderstorm [J]. Grand View of Art, 2023, (16): 91-93.
- [5] Li Ying, Wang Yuan. Research on the teaching practice of Virtual Interactive Technology in drama stage under the background of new Liberal arts [J]. Playwright, 2022, (02): 142-143.