

# Research on the Development Trend and Creation of Digital Media Art Based on VR Technology

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**Abstract:** In the design and creation of DMA(digital media art), the application of VR technology can effectively enhance its flexibility and improve its freedom. In the design and creation of digital media art, the application of VR technology can effectively enhance its flexibility and improve its freedom. The analysis of the influence of VR technology on DMA has important research value and practical significance. Based on this, this paper analyzes the development trend and creation of DMA based on VR technology in detail. I hope that the writing of this article can help the industry to know more about VR technology, bring thoughts and benefits to artistic creators, and even more hope that it can inspire the artistic creation of digital media.

## 1. Introduction

DMA(digital media art) is a new interdisciplinary art major, which is based on digital artistic expression. If we study this art deeply, we can see the mutual penetration of multiple influencing factors such as visual art design, human-computer interaction, VR and artificial intelligence[1]. 5G has pushed the speed of the mobile Internet to a new level, and the information transmission will be more convenient and efficient, and the technology has a very wide coverage. Strong signals have changed the life and work of modern people, and digital information technology has ushered in a new stage.

With the popularization of 5G technology, information transmission efficiency is higher and network operation speed is faster, which actually brings important opportunities for the development of DMA. Therefore, the analysis of the influence of VR technology on DMA has important research value and practical significance[2]. In the design and creation of digital media art, the application of VR technology can effectively enhance its flexibility and improve its freedom. Based on this, this paper analyzes the development trend and creation of DMA based on VR technology in detail.

## 2. Overview of VR Technology

In today's highly information-based society, with the computer technology, network information technology and information dissemination technology, the creative content and expression means of DMA design have been greatly changed. The so-called VR technology, called VR technology, refers to the construction of a three-dimensional virtual environment through corresponding technical means and the setting and adjustment of relevant parameters, and the simulation of users' senses such as vision and hearing, so that users can feel immersive in the virtual environment, so as to better observe and analyze things. People can realize the interaction and communication between people through the establishment of external devices and the constructed virtual scene, so as to maximize and optimize the realism of the scene and better help people experience and imagine[3-4].

In essence, VR is to build a more harmonious artificial environment. According to the analysis of practical application results, the characteristics of VR technology are mainly reflected in the following three points (Figure 1):

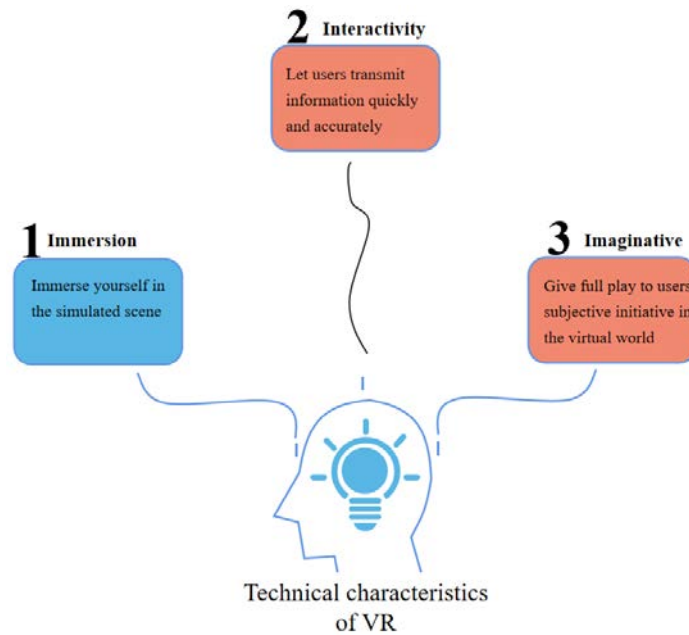


Fig.1 Technical Characteristics of VR

**Immersion.** It can also be called telepresence, that is, through the application of VR technology, users can be immersed in a virtual environment very close to reality[5]. **Interactivity.** Interaction is one of the biggest differences between digital media and traditional media. In virtual environment, the relationship between users and data is not controlled and controlled, let alone the causal relationship of butterfly effect. Users can truly appreciate the application value of digital media and VR technology while transmitting information quickly and accurately.

**Imaginative.** For example, designers use virtual reality technology to design their favorite characters and action scenes in virtual space to realize the simulation and reproduction of real scenes in virtual space; Users can feel the confusion between virtual and real world by using Google Glass[6].

### 3. DMA Creation Based on VR Technology

#### 3.1 VR Technology Makes DMA Creation More Convenient

QuickTime VR technology is a popular and widely used technology in the current VR technology family. QuickTime VR is a primary VR technology based on static images and realized on a microcomputer platform. QuickTime VR technology can be used by various input devices, such as cameras, SLR and other devices, and the requirements for input devices are not high, and almost any electronic input device can be combined with it. At the same time, QuickTime VR technology provides Web browser plug-ins with more creative opportunities and new interests for education, entertainment and commercial Web sites.

Quick Time VR technology is mainly based on omni-directional surround, which seems to make people stay in a three-dimensional virtual space. Under this realistic scene, people feel immersive. In the process of using it, users can reasonably analyze the food information and image information in the electronic input device from their own actual situation, and process and edit the relevant information, and dynamically control the progress of playing and the content played, so that people can get a better physical and visual experience[7].

#### 3.2 Interaction Optimizes the Information Transmission Path

In the experience of DMA design related products, users can transmit information more accurately. For example, when transmitting military strategic information, adding VR technology can fully show strategic orientation and strategic thinking. Under the application background of VR technology, the artistic language expressions of media communication technology in China are

diversified, and their artistic characteristics are mainly manifested in autonomy and immersion, which has built a virtual artistic world for people. For example, relevant staff can realize the communication of visual culture with the help of computer-controlled curtain wall, build a media wall, and use it as a platform for audience communication to realize cross-border cooperation and communication of media art design[8].

In the design and creation of DMA, the application of VR technology can effectively enhance its flexibility and improve its freedom. When the visual world presents a diversified development trend, DMA will inevitably tend to be more open and free. Based on the artistic elements, through the creation and innovation of time and space, it can promote the cross-industry development of digital media, realize the organic cooperation between DMA design and other designs, and stimulate the new vitality of design.

### **3.3 Stimulate the Design Activity of DMA**

The application of VR technology in DMA makes the artistic scene of the media richer and more real, and the level is more delicate, which can also improve the effect of users' audio-visual experience. It not only broadens the direction of DMA design, but also penetrates into other fields, such as communication, travel, medical care, education and other industries, which can not only satisfy people's enjoyment of virtual services anytime and anywhere, but also improve people's experience effect.

During the production of VR full-motion video, the scene can be rendered through the simulation of virtual technology, and it can participate in the process of creating split-shot scripts, drawing movie concept maps and artistic design. This software adds a time dimension to painting and can realize the function of linear editing[9]. Moreover, VR technology also has interactive characteristics. With this technical feature, users can not only play the role of viewers in movies and analyze their artistic charm, but also participate in the interaction of movies and operate according to their own imagination, which also emphasizes the user's sense of participation. In this case, using VR technology, we can design the technical environment of film and television conveniently, and the time and cost of scene construction will be greatly reduced, which will improve the production efficiency of digital media products and people's aesthetic requirements.

## **4. Development Trend of DMA**

### **4.1 Cross Application Has Become a Hot Spot**

At present, a large number of research documents focus on the application of DMA in other disciplines and fields. DMA is widely used in music, drama, visual communication design, peasant painting creation, Chinese painting art, urban planning, painting, comic books and other professions or fields. In the early society with underdeveloped science and technology, technology and art always complement each other. For example, China's ceramics started as earthenware ware, mainly for practical needs. However, with the development of the times, the firing technology is progressing, and the explicit artistic forms are also developing. At this stage, the way of mouse touch operation has been difficult to meet the user's operation. Optimizing users' emotional experience is the main research direction of digital media industry[10]. On the other hand, it is the experience of new visual effects. Art and technology are closely linked to realize virtual things and enhance the interactive effect.

### **4.2 Integration of DMA and New Technology**

Through the application of 5G technology, the integration of DMA and new technology has gained stronger support, which can better promote the innovation of traditional artistic expression and make it more flexible and rich than before, thus realizing effective innovation of artistic communication mode and bringing better sensory experience to people. For example, in the medical field, we can use the integration of DMA and the Internet to search all the information about patients online and transmit it to intelligent terminals through the network, so that medical people

can comprehensively evaluate the physical indicators of patients and carry out targeted treatment. Combined with the designer's imagination, the works of art have rich connotations to express the designer's inner thoughts. Through the spread of science and technology, we can better conform to the trend of the times and meet people's aesthetic needs.

### **4.3 Open Up Fresh User Experience**

With its advantages of low latency and fast transmission, 5G technology promotes the integration of digital media and VR technology. VR technology requires extremely high information transmission speed, and the advantages of 5G are enough to meet the needs of VR technology and optimize the immersive experience brought by VR technology to users.

With the development of DMA forms, aesthetic thinking will be reconstructed, and creators will pay more attention to the inspiration, so as to accurately combine artistic image with technology, better highlight the individuality of works and accurately express the ideas of creators. Of course, in the process of DMA innovation and development, "technical art" does not only pay attention to technology but also ignore art. It is a creation that takes technology as an innovative method and maintains the artistic characteristics of DMA. Its artistic products have both commercial and artistic values.

VR technology can design a real data environment, which improves the quality and level of DMA. VR technology can quickly build the target scene, providing a fast and convenient design method for designers to pay attention to the design of character scenes. The development of VR technology provides more creative space for art media creators and plays a very important role in the innovation of DMA. Through the simulation of virtual reality technology, it can help people perceive the real world more comprehensively and enrich people's imagination.

## **5. Conclusions**

In today's highly information-based society, with the computer technology, network information technology and information dissemination technology, the creative content and expression means of DMA design have been greatly changed. In the experience of DMA design related products, users can transmit information more accurately. Based on the artistic elements, through the creation and innovation of time and space, it can promote the development of cross-industry of digital media, realize the organic cooperation between DMA design and other designs, and stimulate the new vitality of design. It is believed that with the continuous progress and development of VR technology, more and better artistic creation forms will emerge in the creation of DMA, which will be accepted and loved by the public.

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