Research on the Impact of Virtual Reality Technology on the Development Trends of the Animation Industry

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Abstract: It is imperative to support the development of strategic emerging industries and optimize the modern industrial system, in line with the overall trend of national industrial structure adjustment, to carry out the transformation and upgrading of the animation industry. The rise of VR (Virtual Reality) technology provides new opportunities and breakthroughs for the transformation, upgrading, and redevelopment of the animation industry. Compared to the rapid development of VR games, the VR experience in animation started relatively late. Nowadays, young people are very enthusiastic about animation, and whether analyzing the application of VR technology from an artistic or technical perspective, it can be found that it has good development prospects. This article conducts further research on the impact of VR technology on the development trend of the animation industry. Compared with Traditional animation shots, VR animation will delay more intense visual elements when the shot is relatively still. If the two can be effectively integrated, it can bring a better feeling to animation viewers and further promote the development and progress of the animation industry. To truly promote the sustainable development of the animation industry in our province and improve its core competitiveness.

1. Introduction

After the development in recent years, the animation industry has been growing in scale. Although some achievements have been made, the industrial chain is imperfect, the brand effect is not obvious, and the shortage of high-end animation talents has become an unavoidable problem in the industry. "Support the development of strategic emerging industries and optimize the modern industrial system", conform to the overall trend of national industrial structure adjustment, and it is imperative to transform and upgrade the animation industry [1]. The rise of VR technology provides a new opportunity and breakthrough for the transformation, upgrading and redevelopment of animation industry. VR technology is a computer-generated virtual experience simulation environment, which consists of a host, a head-mounted device and a remote control device. Although the experience of VR game masterpieces is shocking, the communication mode of specific platforms is obviously limited by specific audience groups, so it is difficult to really promote it on a large scale [2]. Due to the limitation of hardware level, the VR game screen on the mobile terminal can't reach the picture quality of the professional platform. Both the frame number and the resolution level determine that it is difficult for the mobile game to focus on the details of the screen [3]. Compared with the rapid development of VR games, the VR experience in animation started late. Nowadays, young people are very keen on animation. No matter from the artistic angle or the technical level, the application of V R technology in it can be found to have a good development prospect. Due to the constraints of various factors in the animation industry, there have been few excellent VR animations in the drama category, and the impact of this technology on the animation industry will become greater and greater [4]. In order to solve this problem of VR panoramic shots, it is necessary to promote the plot by connecting the focus of the shots. Compared with traditional animation shots, VR animation will delay more intense visual elements when the shots remain relatively motionless [5]. If we can effectively integrate the two, we can bring better feelings to animation viewers and further promote the development and progress of animation industry. Really promote the sustainable development of animation industry in our province and improve the core competitiveness.

2. Analysis of the Development Trend of Virtual Reality Technology in the Animation Industry

2.1. Stereo display technology

Stereoscopic display technology can enhance the visual effects in film and television animations, and sometimes enhance their authenticity, combining visual and aesthetic aspects organically. Although stereoscopic display technology can play a crucial role in the creative process, fundamentally speaking, the complexity of this technology is high. In the production process of 3D animation, the requirements for scene design will be further improved [6]. The traditional "hidden" lens method will no longer be effective under the independent and comprehensive observation of the audience, and scene design and production need to take into account the full 360 ° space containing the camera. So, the production volume of the same animated film will significantly increase. It can be seen that in real life, 3D stereoscopic glasses can be used to restore and recognize different images, thereby making the visual effect more realistic. With the application of stereoscopic display technology, virtual scenes can be realistically presented.

2.2. 3D Virtual Sound Technology

The creators of game animation need to open up new ideas to unleash the potential of VR technology, and the development of VR technology should also solve the contradiction between the current experience level and popularity of the game animation industry, truly allowing new technologies and ideas to benefit the whole people. This technology can create a computer simulation system for virtual environments, which can effectively integrate various technologies to generate an effective simulation environment, thereby constructing an interactive and diverse 3D dynamic scene that integrates information, allowing users to better immerse themselves in a very realistic environment[7]. In the application process of VR technology in 3D animation production, a 3D animation modeling system should be constructed, and the organic integration of VR technology and 3D modeling system should be utilized to make the application of 3D modeling system more efficient, while also maximizing the construction effect of 3D animation. 3D virtual sound technology can enhance the audience's viewing experience, use sound orientation to understand the actual situation, make the animation more realistic, stimulate the audience's interest in watching the film, perceive the psychological changes of the characters in the animation, and determine the behavioral goals of the characters[8]. In the future development process, modern equipment and technology can enable real-time interaction with characters or physical objects in virtual environments, enhancing the audience's experience and providing a new environment for the advancement of VR technology[9]. If you want to make 3D three-dimensional models more realistic, you must understand the key roles of virtual environments and images. By establishing 3D three-dimensional models, you can obtain information related to daily life, grasp the aesthetic characteristics and development criteria of the audience, and rely on their visual functions to enhance visual effects.

2.3. Virtual Imaging Technology

Thanks to the development of the times, with the launch of many films such as Star Wars, virtual imaging technology has also been promoted. In the panoramic VR environment, it is impossible to take into account the integrity and unity of time and space[10]. Then, it is necessary to design and develop new scripts and split-lens expressions suitable for panoramic VR animation, and adjust the corresponding teaching links. Relatively speaking, virtual images have a wide range of characteristics, covering pre-creation, on-site shooting and subsequent production [11]. In the early creation, the relevant scenes, visual and plot elements are presented through virtual image technology, so that the visual effect can be improved.

3. The Influence of Virtual Reality on the Development Trend of Animation Industry

3.1. The Influence of Virtual Reality Technology on Animation Creation Method

The biggest difference between animation and other film and television art forms is that animation is more imaginative, and it is not subject to too many real and objective laws and forms. The performance of animation for imagination is incomparable to other traditional films and television [12]. Based on the application of VR technology, this kind of imagination can be enlarged and externalized to a greater extent. This technology can make the unconstrained thoughts more concrete, real and easy to perceive. Early VR games were mostly simple and repetitive content, mainly with fresh experience as the main selling point. However, with the rapid disappearance of the audience's high enthusiasm and boredom with repetitive content, the demand for rich content of the game drove game manufacturers and creative teams to make more investment in enriching the game content [13]. The technology of combining virtual and reality, VR technology includes computer, electronic information and simulation technology, and its basic realization is that computers imitate virtual environment, thus giving people a sense of environmental immersion. As shown in Figure 1, 3D animation is not limited by time, space, place, conditions and objects, and uses various expressions to express complex and abstract program contents, scientific principles and abstract concepts in a centralized, simplified, abstract and vivid way.

Figure 1 3D animation

This immersive film viewing experience is distributed and independent, which is completely different from the traditional cinema-style or family-style stereoscopic viewing. Moreover, on the basis of stereoscopic vision, the viewing angle of the film is expanded from the limited screen range to a 360-degree panoramic view of the whole space, so that the audience can no longer watch the film as a passive observer, but liberate the audience's sight and action. In character design: VR technology is immersive, and viewers can watch from multiple angles. Therefore, in the design of characters, we can make more diverse designs, so that the style and image of the characters are more distinct, which is more suitable for the design of scripts and plots. In scene design: VR technology can enhance the realism of 3D model. In traditional animation, the representation of space is accomplished by simulating 3D objects in two dimensions.

3.2. The Influence of Virtual Reality Technology on Animation Creators

The development of technology and artistic innovation often promote each other and depend on each other, as does the relationship between VR technology and game animation industry. VR will affect our inherent consumption concepts, consumer products, and even all aspects of life. Technological innovation is an inevitable process of the development of the times. As an educator in the animation industry, we must have a forward-looking vision and development ideas. Good animation works are often a true inner thought expressed by the creators through their experience and thinking about real life. The creator's family environment, educational experience and growth

process are all unique to him. The influence of many factors makes everyone have different experiences and perceptions of his environment, and this unique perception has a unique impact on future artistic creation. As shown in Figure 2, VR technology is to use the data in real life, generate electronic signals through computer technology, and combine them with various output devices to turn them into phenomena that people can feel. These phenomena can be the real difference between VR and 3D in reality, or they can be substances that we can't see with our naked eyes.

Figure 2 Simulation environment

VR technology has been recognized by more and more people, and users can experience the most authentic feelings in the VR world. The authenticity of its imitation environment is difficult to distinguish from the real world, which makes people feel immersive. From the perspective of post-synthesis, the post-processing and synthesis of panoramic VR films will become very difficult, and the previous way of "3D is not enough for post-assembly" will also be greatly affected, and more work focus and teaching focus will shift forward and middle. Such drastic industrial process changes will also be a major challenge and opportunity for animation education and teaching.

4. Conclusions

Animation is a highly popular term in today's society, and China's animation industry has also begun to receive more attention in recent years. Due to the characteristics of this art form, the development of animation will largely depend on and be limited by the development of production technology. With the update and progress of technology, the forms of expression that animation can rely on are becoming increasingly diverse, and the birth of each new technology will have an impact on the development of the animation industry. Under the requirements of new viewing methods, it will be difficult to meet the panoramic plot and viewing experience. The previous two-dimensional and flat conceptualization methods and manifestations of scripts and visuals may not be able to balance the completeness and unity of time and space in a panoramic VR environment. VR technology, which can bring new perceptual experiences to users, will also bring changes to the development of animation creation. It can be foreseen that in the future, with the application of VR technology, the creation of VR animation will provide creators with a wider creative space and bring viewers a more realistic and appropriate perception experience. The application of VR technology can not only promote the good development of animation production, but also optimize the visual experience of the audience. In the subsequent development process, VR technology can continue to innovate with the progress of computer technology, meet the requirements of audiences, and achieve the goal of modern development.

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