Journal of Humanities, Arts and Social Science, 2024, 8(7), 1664-1668
https://www.hillpublisher.com/journals/jhass/
ISSN Online: 2576-0548
ISSN Print: 2576-0556

Virtuality and Reality: Research on VR Technology Film Production

Zhaoting Li

Department of Film Press and Contents, Graduate College, Cheongju University, Cheongju-si 28503, South Korea.

How to cite this paper: Zhaoting Li. (2024) Virtuality and Reality: Research on VR Technology Film Production. *Journal of Humanities, Arts and Social Science*, 8(7), 1664-1668.
DOI: 10.26855/jhass.2024.07.021

Received: June 20, 2024
Accepted: July 16, 2024
Published: August 13, 2024

***Corresponding author:** Zhaoting Li, Department of Film Press and Contents, Graduate College, Cheongju University, Cheongju-si 28503, South Korea.

Abstract

The emergence of virtual reality (VR) technology has impacted various industries, including film production. This article delves into the intersection of virtuality and reality in filmmaking, focusing on the use of new VR technologies in filmmaking. VR technology creates a new "converged media" business format: virtual shooting is just the beginning. VR virtual reality technology has brought innovative film production methods to the film industry, expanded film expression forms, improved audience experience, expanded application fields, and optimized production processes. Through VR technology, the film industry has gained new opportunities and possibilities in film production, viewing experience, marketing and promotion, etc. From the perspective of content and culture, the "reality" in the virtual reality system is jointly constructed by the creator and the experiencer. By examining the evolution of VR in filmmaking, and exploring its impact on perceptual theory, visual aesthetics, and audience participation, we aim to gain a deeper understanding of the potential of VR technology to reshape the cinematic experience.

Keywords

Virtual reality (VR); film production; emotion theory; visual aesthetics; audience participation

VR virtual reality is significantly changing the film industry. People working in this industry need to be prepared for the challenges that come with it. With VR virtual reality technology, anyone has the potential to create Make some truly unique movies. Movies are images of human subjective will realized through technology compared with real life. Today, the creation of VR provides the public with new sensory experiences, which are mainly reflected in two aspects: from plane to three-dimensional. On the other hand, it is a conceptual innovation for movie narratives to express inner elements in a multi-dimensional way. Virtual reality is not only used in movies, but also in other artistic and technological applications, such as psychology: trauma diagnosis and treatment, theater art performance, and immersion formula is also widely used.

1. Introduction

Immersive virtual reality (VR) filmmaking promises to fundamentally change some existing cinematic concepts. It will increase audience engagement and how the director visualizes each scene in the film. Great movies, at the end of the day, are all about allowing the audience to escape reality for a while. Individuals, couples, families, and groups of friends flock to movie theaters to put aside the trials and tribulations of their lives for two to three hours. Regardless of the genre, audiences love to watch gripping stories while munching on popcorn. In order to increase audience participation at any time, filmmakers have moved from 2D to 3D and even 4D to "bring the movie to the audience." Now, VR is expected to change this situation and "bring the audience into the movie." After all, there is no more engaging movie experience than immersing the audience in the movie. In order to optimize the movie experience, virtual reality filmmaking attempts to use technology to break the fourth wall between the audience and the movie characters.

Virtual technology is a film shooting method that has become increasingly popular in recent years. It means that during film shooting, according to the director's requirements, all shots are performed in a virtual scene on the computer. The director can "direct" the computer according to his own intentions. "The performance and movement of the characters. With this technology, the boundary between "virtual" and "real" is opened in a physical sense, and film and television content can be presented to the public in a more exciting way.

In fact, virtual shooting technology has been integrated and applied in a variety of converged media content production fields. VR technology creates new integrated media formats. As informatization continues to advance, new technologies represented by virtual reality have become an important driving force in accelerating the integrated development of traditional media and emerging media and innovating media communication methods. Taking virtual shooting technology as an example, it integrates many cutting-edge technologies such as motion capture, real-time digital imaging, real-time light and shadow rendering, and real-time computing; at the same time, it also involves virtual cameras, infrared cameras, motion capture systems, and other equipment (Francesco Maria Spampinato & Valentino Catricalà, 2021).

2. Theoretical framework

VR movies place the audience in the virtual world through wearable helmet glasses (or VR experience seats). When the audience sees the running scene in the virtual reality world, it is similar to the movie shown by the Lumil Brothers in a French cafe in 1895. The visual impact will be diagonal, and the sensory stimulation will come from the products of new technologies. Generally speaking, VR refers to a three-dimensional virtual scene created through computer simulation, including the comprehensive implementation of computer graphics, computer simulation, human-computer interface technology, sensor technology, multimedia technology, and other technologies, which allows viewers to experience the world through a combination of hardware and software. Experience multi-sensory virtual reality and create a full 360° "immersion" in its essence. It is an ideal state, and with the development of film technology, immersion pays more and more attention to the individual, achieving the greatest freedom of the subject-object relationship between the audience and the video. Movies allow audiences to feel an unprecedented sense of reality, create a real space in the virtual world, and provide audiences with an all-round, multi-sensory wonderful experience.

VR movies are a unique mimetic environment that breaks the "fourth wall" between reality and fiction, presenting 360° panoramic images, which to some extent challenges the audience's "viewing state that is completely separated from the real world." Experience perception. Sometimes, virtual reality is more "authentic" than real life itself, and people will be more likely to accept and immerse themselves in the reality of virtual reality. When watching a movie, the audience will enter the inner world of the VR movie and integrate into their own inner world. The combination of action and story environment, perception of the story, and participation in the story process not only form a new form of mediation but also provide the audience with a "transcendental" aesthetic experience.

The theory of perceptual phenomena focuses on the substantive significance of human perceptual activities in the process of connecting the subject and the world. Through phenomenological thinking on perceptual activities, Maurice Merleau-Ponty regarded the body as the fundamental path for human beings to perceive the world. "We have to evoke the experience of the world in the same way. Because we exist in the world through our bodies. Because we believe that through our bodies, it creates a rhythm that resonates with the world." The surrounding environment, too. The basic way for the subject to exist in the environment. In the overall structure of the interaction between people and the world, every sensory activity represents a perceptual field and also forms the impression of the subject. And perceive space in a sensory way, forming a cyclic world in the sense of human cognition (Ji-Hyeon Son, 2023).

3. Visual aesthetics of VR movies

3.1 Provides a new presentation method

Virtual reality offers previously unachievable presentation options. VR can place viewers right in the middle of a movie's action, making them feel like they're actually there. This can create a richer emotional experience than traditional movies, and VR can also create interactive experiences where viewers can choose what they want to do, or what to watch next, which could help in the future.

3.2 Increase audience participation

VR virtual reality can also be used to increase participation in the movie-going experience. Some cinemas now offer VR experiences that allow viewers to enter the movie world before the movie starts. This can help build their excitement and anticipation for the movie. More information can be obtained through VR chat. Deep connections and more fun, and virtual reality can also be used for marketing, such as making trailers, allowing everyone to experience the overall style of the movie in advance.

3.3 Improve the audience's sense of immersion

In addition to offering new ways of expression and increasing engagement, VR has the potential to create a more immersive experience for viewers. There are also companies currently developing a system that allows the audience to see what is happening in the movie and then turn around to watch it from a 360-degree angle, creating some very realistic and intense scenes. In addition, there is also a system that allows the audience to actually feel the screen. Immersive technical means such as the feeling of what is happening in one's body.

3.4 The film industry begins to invest in VR technology

As technology becomes increasingly advanced, many cinemas have begun to invest in VR virtual reality technology. For example, IMAX has announced that it is developing a VR system that will be installed in some of its theaters, which will allow audiences to experience movies in a whole new way; other companies are also researching VR systems that can be used in theaters, which is exciting. When watching a movie, it feels like being there, so in the near future, watching movies in VR virtual reality may become a very popular way.

3.5 Changes to performance and recording

VR virtual reality technology is also changing the way movies are made. For example, VR can now be used to record actors' performances or to create some very realistic and lifelike scenes for rehearsals. By having a real feeling of the surrounding environment before shooting, the actors can be smoother and more efficient in the final shooting process. In addition, VR can also be used to create virtual test audiences, allowing directors to see how audiences will react to a specific scene before filming.

3.6 Better movie quality

As technology advances, the quality of VR movies is also improving. Some companies are also trying to research ways to create realistic CG environments to create some stunning and realistic scenes, and new camera technologies are also being developed. This can provide a more immersive virtual reality experience and gradually improve the quality of VR movies.

3.7 Improve the skills of industry workers

VR technology requires new skills for those working in the film industry. For example, directors now need to understand how to use VR to create the most immersive and realistic experiences possible, and videographers also need to be able to shoot footage that can be used in VR films. This is a very different process from traditional filmmaking, so there is a need to learn and apply new skills; those working in post-production must also know how to edit VR material and have a good understanding of the technology. For sound designers, they also need to create audio that sounds realistic in the VR environment. All kinds of skills are crucial to making a good VR movie.

4. Audience participation at the technical level

Virtual reality, as a computer-generated digital space, allows the experience to enter an interactive virtual environment, triggering the feeling of actually "existing" in the virtual space. Therefore, the reason why virtual reality technology can enable people to obtain better emotional experiences should start by analyzing its technical characteristics.

4.1 Immersion: creating a sense of presence

Immersion determines the degree of reality experienced by the experiencer in the virtual environment. The development process of virtual reality technology is the process of improving immersion. The ideal virtual reality technology should make it difficult for the experiencer to distinguish between real and fake, and even obtain a sensory experience that transcends reality. "What is related to empathy is not immersion itself, but the sense of presence, which represents the 'platform for empathic experience.'" The continuous interaction between the user and the virtual reality system creates a "sense of presence" that is out of the current state, which means "the subjective psychological feeling existing in a technologically mediated environment". Its core feature is "disintermediation". Virtual reality technology bridges the gap between real experience and media experience by giving users a sense of presence, allowing users to experience "reality" in virtual space and thereby enhance the empathy effect.

4.2 Interactivity: interactive storytelling with audience participation

"The sense of participation is an important way to connect virtual reality and empathic experience. A higher level of participation can bring a greater degree of empathic experience." The sense of participation is based on the sense of presence, and it is also the link between VR movies and traditional movies, highlighting an important difference. Interactivity means that people can interact with the multi-dimensional virtual space constructed by virtual reality technology, and people's behaviors in the real world can be responded to in the virtual environment. Somatosensory interactive technology makes interactive narrative possible. The strong sense of substitution enhances the audience's sense of participation. The audience can gain a new audio-visual sensory experience and have an empathic effect at the same time.

4.3 Imagination: gaining self in virtual space

The key reason why the imaginative characteristics of virtual reality are different from the imaginative nature of traditional images is that the space it constructs can realize the projection of people's intentions. "The potential impact of the illusion of virtual body ownership on behavior and attitude changes can be achieved by changing a person's body." to explain the potential effect of changing their thinking." Virtual reality technology builds an imaginary space based on the projection of people's consciousness. The experiencer becomes a digital object in the virtual space and can feel his or her new identity, thus creating a sense of embodiment.

5. Summary and outlook

5.1 Summary

Considering that the purpose of VR technology is to "fully reproduce our physical connection with the world and make mechanical interactions as natural as possible," digital bodies express themselves without physical organs, allowing current VR narrative content to still show its essence. The ideal deep learning experience not only allows individuals to interact freely with the environment, but also creates a visible digital body without physical organs, simulating real-life interpersonal communication patterns in a virtual reality space. In Player One's presets, users of the Oasis world can decide how they want to socialize digitally with the freedom to "poke in the face" and change their appearance. In-depth human interaction is also possible through NPCs (non-player characters). and digital individuals, advances in artificial intelligence technology are expected to provide more possibilities for intelligently awakened characters among NPCs and out-of-control players (Free Guy, 2021). Autonomous awareness and the ability to simulate human emotions take human-computer interaction to a new level. Creating logical relationships among many materials that are not clearly connected, these two ways of experiencing the world promise to serve as a combined technology that expands virtual space through collective engagement and behavioral data sets. Continuous innovation in imaging methods will allow the two to offer endless possibilities in combination. In this sense, VR can expand the construction of a world without bringing it to a final, finished state.

5.2 Future prospects

The viewing angle that the human eye can capture in a stereoscopic environment is about 124°, and in the case of 360° panoramic videos in VR movies, about one-third of the entire stereoscopic scene can be seen. Within the scope, the audience's attention is focused on different areas, and the viewing content can be freely changed according to the viewing angle, realizing the "lens scheduling" of traditional VR movies that use 360° lens capture. Scenes, long scene paragraphs appear, and main actions or narrative elements are used to allow the audience to construct a narrative and induce a multi-semantic understanding of the video. VR video is similar to the spatiotemporal expression of traditional drama, as well as actual time. The time and space seen by the audience is consistent with the time when the story in the movie takes place. Changes in narrative time and space can only be achieved through scene changes, and VR movies break the fourth wall of traditional cinemas. Remove the center and frame-free composition, allowing the audience to experience the world in the three-dimensional space constructed by VR technology, allowing you to explore this fantasy world without limit.

References

Brian Seth Hurst. "Cinematic Virtual Reality", 2020.

Francesco Maria Spampinato, Valentino Catricalà. "Contemporary Art and Virtual Reality: New Conditions of Viewership", 2021.

Jeon Byoungwon. "Questions for researching VR cinema as a new media." Journal of Digital Imaging, 18.1 (2021): 57-80.

Ji-Hyeon Son. "Study on VR movie viewing experience." Domestic doctoral thesis, Graduate School of Advanced Imaging, Chung-Ang University, Seoul, 2023.

Pyo Man-seok, Choi Yoon-hee, Lee Seung-hyun, and Kwon Soon-chul. "Analysis of KBS' 'Sumter VR' directing - Focusing on long take technique." The Journal of the Convergence on Culture Technology (JCCT), 4.3 (2018): 149-158.

Wang Jianhua. Perception—the temporal form of the world - Merleau-Ponty on film [J]. Journal of Beijing Film Academy, 2020, (09): 4-12.

Yuan Zhenning. "Study on ways to revitalize VR images through aesthetic analysis of movie narratives." Domestic doctoral thesis, Hoseo University Graduate School, 2022.

Zhang Xiaoyan, Lei Yan. Research on the innovative development of VR movies based on virtual reality technology [J]. Film Review, 2022(15):1-6.