

Interactive Design Strategy of Film Creation Based on Virtual Reality Technology

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Abstract: In the process of creating virtual reality film, whether from the content level or from the technical level, the creator must fully and deeply understand the interactivity of virtual reality film. At present, with the development and application of virtual reality technology, the traditional film industry has ushered in great changes, and many old artists still use the creative thinking of traditional films to make film content, which is bound to affect the audience's viewing effect. The author believes that nowadays, the impact of virtual reality technology on the film industry cannot be underestimated. It has had a far-reaching impact on the creative process of the traditional film industry and promoted the reform and innovation of traditional films. The product of virtual reality film has become a new art form. Virtual reality film is formed on the basis of the development of traditional film. It is still related to the content and production of traditional film, but its unique interaction is difficult for traditional film to reach. Therefore, the author believes that based on the creative ideas of traditional films, we can learn from and refer to the application and development process of virtual reality technology in other industries, so as to strengthen the interaction and immersion in the process of film creation.

1. Introduction

In recent years, virtual reality technology, as one of the high-tech science and technology in the new era, has become one of the science and technology focused by all sectors of society and enterprises and institutions. Virtual reality technology has entered many industries, such as military industry, education industry, transportation, etc. at the same time, virtual reality technology has also begun to impact the traditional entertainment market, among which the film industry is a typical example. With the continuous development and application of virtual reality technology, in the field of film, the application of virtual reality technology is becoming more and more widely. It begins to greatly improve the audience's viewing experience. For example, it can enable the audience to independently choose the viewing angle and create a good immersive viewing space, which has had a significant impact and impact on the traditional film industry and will have a far-reaching impact on the development process of the film industry. This paper studies and analyzes the connotation of virtual reality technology and interactive design, and explores the interactive design strategy of VR film from the current development of virtual reality technology, in order to comprehensively improve the viewing experience of VR film audience and improve the interactivity and immersion of VR film.

2. Theoretical Basis

2.1. Virtual Reality Technology

Virtual reality technology is a kind of science and technology that creates a virtual world by means of artificial technology ^[1]. The virtual space it creates is opposite to the real space. In essence, virtual reality technology can also be regarded as a high-tech technology to build a virtual environment different from real life through computer systems and programs ^[2]. It can fully mobilize the human senses entering the virtual world, and even enable the participants entering the virtual world to communicate with the things in the virtual world. Virtual reality has three basic features, as shown in

Figure 1. At the same time, with the development and application of virtual reality technology, virtual reality system can be divided into four types, as shown in Figure 2.

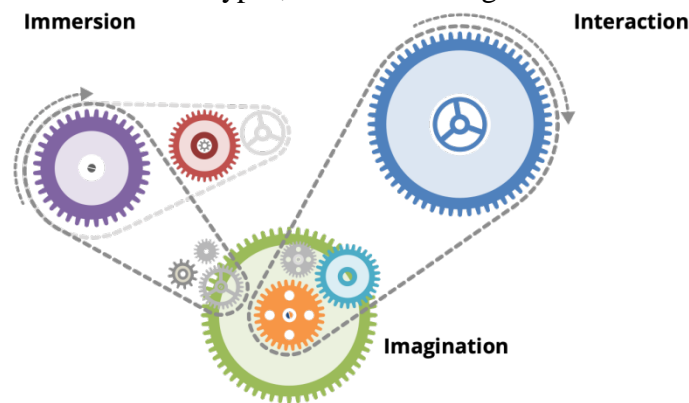


Figure 1 Three basic features of virtual reality

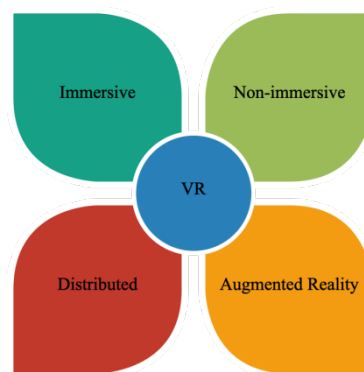


Figure 2 Four types of virtual reality system

2.2. Interaction Design

Interaction design is an important link in the design field. It can define and design various behaviors of artificial manufacturing system. Its main application is to define the connection content and framework structure between two or more interactive individuals ^[3]. This purpose is to make different individuals coordinate and cooperate with each other to achieve a certain goal. Therefore, from this perspective, the core content of interaction design is to create and build the relationship between individuals, especially the relationship between people and things, so as to connect people and things, that is, build a bridge between people and things through information technology ^[4]. Therefore, in the process of interaction design, designers must take two important factors into account, namely usability and user experience (as shown in Figure 3), which reflect the user demand-oriented design process.

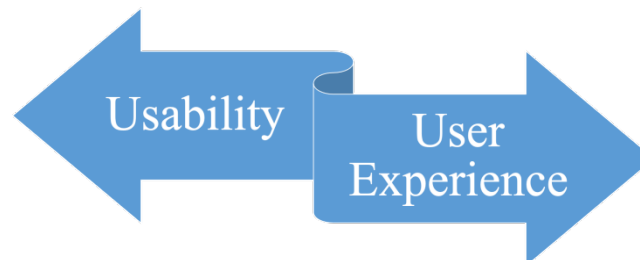


Figure 3 Two important factors in interaction design

3. Interactive Design Strategy of Film Creation Environment Based on Virtual Reality Technology

3.1. Concrete Embodiment of Interactivity

3.1.1. Incarnation

In traditional films, the audience is more a spectator, and the world in which the audience lives does not coincide with the world in which the characters live in the film. In the process of watching traditional films, the audience mostly feels the world conveyed by the characters in the film through vision and hearing.

The virtual reality film is different. The audience changes from a traditional spectator to a participant. At this time, the world of the audience is a virtual world, and the world of the characters in the film is also a virtual world. In the process of watching the film, the two worlds coincide. In other words, the audience has their own avatar in the virtual world, which can fully mobilize their vision, hearing, smell and other senses to experience a world completely different from that in real life.

3.1.2. Interactivity

In traditional films, the action of the audience in the whole viewing stage is "watching", which cannot change the trend of various scenes and plots in the film. Moreover, the characters in the film will not be touched by the joys and sorrows of the audience in the process of watching the film, and the audience cannot really feel the world constructed in the film, let alone change the world in the film through their own series of watching behaviors. The reason is that before the audience watches the traditional film, all the production processes of the traditional film have been completed. Therefore, the broadcasting process of the traditional film is not restricted by the audience's behavior ^[5].

It is different in virtual reality movies. Virtual reality movies are similar to all kinds of current web games and mobile games. Users have a strong sense of participation, can interact with characters in the virtual world, and can also affect the joys and sorrows of characters in the virtual world. In other words, in the process of watching virtual reality films, the audience also belongs to an important influencing factor in the film. In the process of watching the film, the audience still needs to watch the film content and understand the plot, but different from the traditional film, the design of virtual reality film has stronger openness and freedom ^[6]. In the popularity of creating virtual reality film, the designer also fully considers the audience's different viewing behavior, so as to design different plot trends to meet the needs of users. Therefore, with the transformation of traditional films, the audience has gradually changed from passive receivers to active participants.

3.1.3. Participation

In traditional films, the film content and plot trend are fixed and unchangeable. Screenwriters are the God of the plot in the film. They not only shape a character in a film, but also give each character a unique personality and life experience ^[7]. At the same time, screenwriters also integrate various events into the film to stimulate the contradictions between different characters, so as to enhance the connection between different characters and promote the development of the plot.

But in the virtual reality film, the audience has a higher degree of freedom ^[8]. They can not only choose the viewing angle independently, but also participate in the important plot turning point. That is to say, in the virtual reality film, the audience has become an important participant, can participate in the plot trend of the film and undertake part of the creative task of the screenwriter.

3.1.4. Exploratory

In the activities of watching traditional films, most of the audience only "watch", even if their hearts are full of curiosity about the plot and characters of the film. In other words, in the face of traditional films, the audience receives these information passively rather than actively. They cannot change the plot direction of the film, and must passively accept the scenes and dialogue set by the

screenwriter.

However, with the application of virtual reality technology, the traditional film has changed into a new form of expression, that is, virtual reality film ^[9]. Therefore, in the process of watching virtual reality films, the audience can independently explore the trend of the film plot, but it is worth noting that there are great differences in the degree of independent exploration that different virtual reality films can give the audience.

3.2. Interaction Design Strategy

Through the concrete expression of the interactive characteristics of virtual reality film, this paper puts forward four specific measures of interactive design, as demonstrated in Figure 4.



Figure 4 Interaction design strategy

3.2.1. Cosplay

The so-called role-playing mechanism is the specific measure of "incarnation" discussed above. With the continuous development of Internet platform, "Avatar" has been widely used in various electronic games. However, different from video games, in the virtual reality film, for the audience, they rely more on the connection between the virtual characters and virtual objects in the film and themselves, so as to produce positive feedback on the film viewing experience. "Incarnation" is mainly reflected in the process of interaction between the audience and the film plot and the characters in the film through virtual characters. In the virtual film environment created by virtual reality technology, the audience can fully mobilize their various senses, as if they were in the virtual film environment.

From this perspective, different from the creation of traditional films, screenwriters should also fully consider the different needs of the target audience, arrange different virtual roles for the audience, and start from the needs of the audience to meet the audience's inner viewing needs and improve the viewing experience of attention. In other words, in the process of creating virtual reality films, screenwriters should take into account the needs of the audience and design a variety of different virtual characters, so that audiences with different needs can effectively feel the immersion brought by virtual reality technology in virtual reality films.

3.2.2. Interactive Mechanism

The interactive mechanism is based on the "interactivity" in the specific expression of the interactivity mentioned above. There is no doubt that the most important and core feature of virtual reality technology in the process of application is interactivity. With the extension of the application scope of virtual reality technology, significant changes have taken place in the traditional film industry, and there is a way to enhance the interactivity of the virtual environment built in the film through virtual reality devices such as VR helmets or VR glasses. However, it is worth noting that this method still belongs to one-way input, that is, the interaction between the audience and the virtual reality film mainly inputs visual signals through the virtual reality equipment, and these interaction methods are difficult to really affect the virtual environment constructed by the virtual reality film, which can not be called the real interaction.

Therefore, starting from the application mechanism and characteristics of virtual reality technology, this paper believes that the interaction of virtual reality technology is more that the audience should be able to influence the virtual world constructed by virtual reality film in real time through their own behavior, and the plot trend of virtual reality film will also be affected by the interaction of the audience, which is the real interaction. In other words, in the process of creating virtual reality films, screenwriters should give the audience more control, so that the audience can interact with the characters in the virtual reality films in a real sense, and even have an impact on the plot content and trend of the virtual reality films.

3.2.3. Challenge Mechanism

In the creation process of virtual reality film, the so-called "challenge mechanism" corresponds to the "participation" in the concrete embodiment of the interactive design of virtual reality film mentioned above. In the process of film creation, the creator can take the needs of the audience into account and let the audience participate in the plot content of the film. At the same time, when the creator takes the needs of the audience into account, he should not easily promote the trend of the film plot, but set certain checkpoints and challenge tasks in the virtual reality film. From this point of view, the challenge mechanism in virtual reality film creation is similar to the game mechanism in video games. By designing a certain degree of challenging tasks, the playability of virtual reality films will be significantly improved and their interest can be greatly enhanced. Therefore, from this level, the design and application of the challenge mechanism of virtual reality technology is not only an essential link in the virtual reality film, but also an important factor for whether the virtual reality film can meet the demands of the audience and arouse the interest of the audience.

3.2.4. Induction Mechanism

In virtual reality movies, "induction mechanism" mainly corresponds to the "exploratory" mentioned above. Different from traditional films, in virtual reality films, the creator's focus of creation is not to carefully design the lens trajectory, nor to create a high degree of freedom for the audience like video games. In the process of virtual reality film creation, creators focus more on meeting the viewing needs of different audiences and designing a variety of open plot trends, which needs to be applied to the induction mechanism. In other words, in the creation process of virtual reality film, the existence and application of induction mechanism can enable the audience to quickly find their own real demands and needs, so as to trigger the different trends of a series of film plots. Therefore, the application of inducement mechanism can better help the audience trigger the trend of film plot, meet the audience's viewing needs, and enable the creator to better design the plot content and character characteristics of virtual reality film from different angles.

4. Conclusion

To sum up, in the past, traditional films mainly presented the film content through two aspects: the careful layout of the shooting content of the lens and the special arrangement between different lenses. Therefore, the creative process of traditional films can also be regarded as the presentation process of a classic narrative technique. The development of the film industry has changed from black-and-white screen to color screen, and from ordinary screen to large screen. The application and development of virtual reality technology in the film industry has promoted the transformation of traditional films from two-dimensional films to three-dimensional films.

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