Application Research of Display Design Based on Virtual Reality

Jiao Zhang*

Jilin Animation Institute, Arts and technology Jilin Animation Institute, Changchun, 130000

*Corresponding author e-mail: 383980339@qq.com

Abstract. This article expounds the concepts, characteristics, expressions, and basic types of virtual reality display design. It also discusses the design principles that virtual reality design should follow its practical significance for all design. By analysing its specific applications in commercial product display, built environment display, cultural genetic reincarnation and so on, its different application values and meanings are explained, and the two design categories of 3D modelling virtual reality display and panoramic virtual reality display are studied and discussed the design and implementation principles, application technology and design content in detail.

Keywords: Virtual Reality, 3D Modelling, Display, Design

1. The rise of online exhibitions and virtual displays

As an emerging industry with relatively concentrated media, information and communication, the convention and exhibition industry are facing major changes and challenges [1-2]. In 2003, due to SARS, many physical exhibitions around the world were canceled or postponed. The "network exhibition" that emerged as a result of the SARS has quickly made up for the lack of physical exhibitions due to its operability, cost-effectiveness and relative efficiency [3-4]. It is playing an extremely important role. In recent years, virtual display and online display have first begun to be widely used in museum displays, such as the Forbidden City online virtual Forbidden City display in a joint project between the Palace Museum and IBM. It creates a three-dimensional virtual world, where visitors from all over the world.
Table 1. Virtual reality shows data changes in applications

| Year | World Expo | Architecture Roams | The Virtual Drama Costumes |
|------|------------|--------------------|---------------------------|
| 2013 | 1.2        | 0.2                | 0.8                       |
| 2014 | 2.5        | 0.5                | 2                         |
| 2015 | 3.5        | 0.9                | 3                         |
| 2016 | 4.5        | 1.2                | 5                         |
| 2017 | 5.5        | 3.2                | 7.8                       |
| 2018 | 5.6        | 5.7                | 7.9                       |
| 2019 | 7          | 8                  | 10.5                      |

2. The main role of virtual display design

Virtual display is a new mode of innovative development of the convention and exhibition industry born on the basis of the highly integrated industrial chain and the development of science and technology and the economy [5-6]. It has formed a new growth point for economic development and played an important role in adjusting the industrial structure. It plays an irreplaceable role in the construction of a harmonious society, as follows:

2.1. Promote communication and promote cultural construction

Exhibitors can implement dynamic and online promotion of exhibits through various virtual reality technologies or network means. Conducive to the promotion of new technologies and products, and promote economic trade and communication. Enterprises can release relevant information in a timely manner, which can bring considerable economic benefits to the enterprise while establishing a brand image, which has unparalleled advantages over other service media. In the digital age, the expression of display design is faster and more efficient, and visitors can see and manipulate every object in the display system. Due to the virtual display design, it can provide multimedia functions such as hearing, touch, and smell.

![Application Research](image)

Figure 1. Virtual reality display apps accounted for four quarters

2.2. Raising awareness and driving economic development

The development of the exhibition industry will promote the simultaneous development of transportation, tourism, catering, infrastructure and other related industries. The development of these
industries will play a positive role in increasing the number of social jobs. For example, Beijing’s successful bid for the Olympic Games and Shanghai’s successful hosting of the World Expo. Millions of German jobs are created every time. According to calculations, the largest driving coefficient of the exhibition industry is 1: 9. Online exhibitions allow visitors to communicate online and trade exhibits without leaving home. However, the social and economic benefits it brings and the role of creating employment opportunities Is huge. For example, the 2010 Shanghai World Expo contributed 14% to Shanghai ’s GDP growth, which has effectively enhanced Shanghai ’s international popularity, promoted Shanghai ’s status as an international financial and commercial center, and promoted the economic development of the Yangtze River Delta, centered on Shanghai. In particular, the launch of the World Expo Online has made the world understand China. Therefore, holding exhibition activities can maximize economic benefits and play an important role in the process of industrial structure adjustment.

Figure 2. Annual changes in virtual reality display applications

2.3. Improve the efficiency of exhibition and display vivid
Many foreign exhibitions have formed the characteristics of grouping exhibition companies and have been widely used in e-commerce. Messe Frankfurt in Germany and Messe Menschen in Germany are their typical representatives [2]. Most foreign exhibitions are combined with online publishing and offline operations. The release of information and the registration of professional visitors are carried out through digital platforms and electronic informatization. 60% of the booth sales are through the Internet to reach the final effective exhibition. Professional or non-professional users can browse or visit all or part of the exhibition halls, exhibitions and exhibits through digital network platforms. As a result, the exhibition will also become a "never closed exhibition" in the true sense.

2.1.2 Establishment of vocabulary teaching focus

3. The virtual reality technology in modern display design.
The interactive design using virtual reality technology in the display design is most in line with the concept of the dissemination of modern information. It also mobilizes the enthusiasm of visitors and increases their interest in participating. This means that visitors are not bystanders. The visitors are actively participating in the display of content in order to show part of the design. As early as the
1960s, many visionary experts in the world put forward the idea of "learning with fun". In the exhibition room, the "don't try" sign was gradually replaced by "try it yourself".

4. The application status of virtual reality technology in modern display design
The exhibition technology art also got a new breakthrough from it, and gradually began to apply the immersive interaction and conceivability brought by the virtual reality technology in the exhibition. Second, architecture roams traditional architectural displays, such as real estate displays in the commercial field and historical exhibitions in the cultural field. Architectural displays tend to be scaled down entities. Show in an invisible way. Although this way can show the building from multiple angles. But because it is a scaled-down model, the observer cannot really feel the architecture. Third, the virtual opera costume display. The virtual drama costumes that led the students to make their debut came out, and they used the same. virtual reality technology.

5. Conclusions
With the application of computer technology in English teaching, more and more effective teaching methods are bound to be derived, which is of great significance for improving the quality of English teaching and the learning efficiency of students. It is very important to think how to effectively make use of the computer and Internet assisted English teaching platform, online and cross-temporal hierarchical teaching to solve the problems occurred in English teaching and learning in China.

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