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A Study on the Virtuality in Spatial Design through Immersive Media

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ABSTRACT

Immersive media is becoming increasingly commonplace in a multitude of societal and cultural fields. For designers, the use of immersive media in spatial design and production is essential. Current studies have categorized immersive media based on the medium, technologies, or device. However, these categories are not suitable for immersive media in spatial design because of its complexity in generating experiential conditions. Therefore, in spatial design, the different types of user engagement and user experience should be the main classification factors. This paper analyzes various case studies and the technical devices and production practices of immersive media in virtual reality, augmented reality, and mixed reality to understand what facets of immersive media produce virtuality.

Keywords: Immersive Media; Virtuality; Presence; Immersion; Spatial design

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A STUDY ON THE VIRTUALITY IN SPATIAL DESIGN THROUGH IMMERSIVE MEDIA

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Abstract

Immersive media is becoming increasingly commonplace in a multitude of societal and cultural fields. For designers, the use of immersive media in spatial design and production is essential. Current studies have categorized immersive media based on the medium, technologies, or device. However, these categories are not suitable for immersive media in spatial design because of its complexity in generating experiential conditions. Therefore, in spatial design, the different types of user engagement and user experience should be the main classification factors. This paper analyzes various case studies and the technical devices and production practices of immersive media in virtual reality, augmented reality, and mixed reality to understand what facets of immersive media produce virtuality.

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1. Introduction

In today's society and culture, immersive media is becoming an important player in many different fields. For spatial design, immersive media is an essential tool in producing and designing a certain experiential moment within the space. Previous studies on immersive media have focused on the technologies and devices used as the major factors for categorization. However, in order for space designers to create successful spatial qualities, the different user experiences and cognitive perceptions play a larger role in determining the correct immersive media to be utilized in the design. Therefore, the existing categories for the immersive media limits the understanding of immersive media as a complex design tool.

2. Literature Review

Computer based immersive media allows for creative design to be possible and expand existing limitations in traditional design methodologies[1]. For instance, immersive media can be utilized in virtual reality. Users in virtual reality engage in a

much more comprehensive and layered experience[2].

3. Research Methods

This paper define what 'actual', 'virtual', and 'real' on the immersive media to consolidate the foundation of that meanings. Looking at the theory of Henry Bergson, Gill Deleuze, and Pierre Revy and clarify the idea of them in the area of the immersive media.

Specific case focusing on four distinctive types of the immersive media and categorizing the case studies of each section. Then analyze and summarize each section to the diagrams for visualization of this paper.

4. Analysis & Results

Immersive media, in order to categorize by the type of experience and cognitive perception, must first be classified by the environment and circumstance. In other words, there needs to be an underlying understanding of what is "virtual" versus what is "actual" in a given experience.

Customarily the opposite of virtual is perceived as ‘physical existing’, ‘real’ or even simply ‘existing’. However, according to Pierre Levy, a renowned digital researcher known for having defined collective intelligence of the Internet, looks to philosophers such as Henri-Louis Bergson and Gilles Deleuze to define the opposite of virtual. Levy argues that the opposite of virtual is ‘practical’, ‘currently viable’, or ‘realized’- looking more deeply at the concept of reality rather than the physical attributes it is normally associated with[3]. The complexity of virtual as a concept makes identifying the conditions equally complex in characteristics. Therefore, the different conditions, events, or entities involving a certain reality are simply tendencies of virtuality that result in actualization.

Virtuality and reality are not contradictory concepts. Rather, the relationship is better qualified as a type of illusion- a mirrored image. Therefore, computer generated virtuality is an opportunity to expand the illusion of an environment[4]. Actual objects and virtual objects are determined by an optical relationship. In other words, when an object is virtual, the image becomes real, or actualized. These distinctions correspond to the contextual interactions within the space[5]. The following, figure 1 and figure 2, demonstrate this idea.

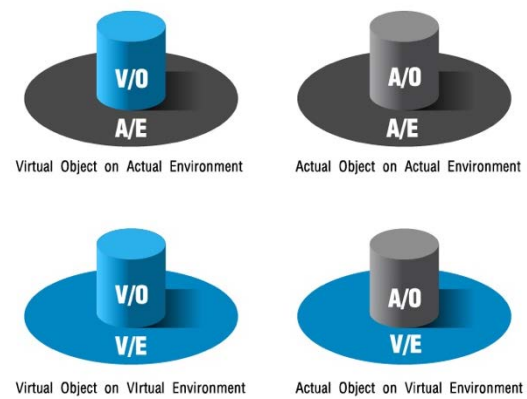


Figure 1. The relationship between environment and object in actual and virtual conditions.

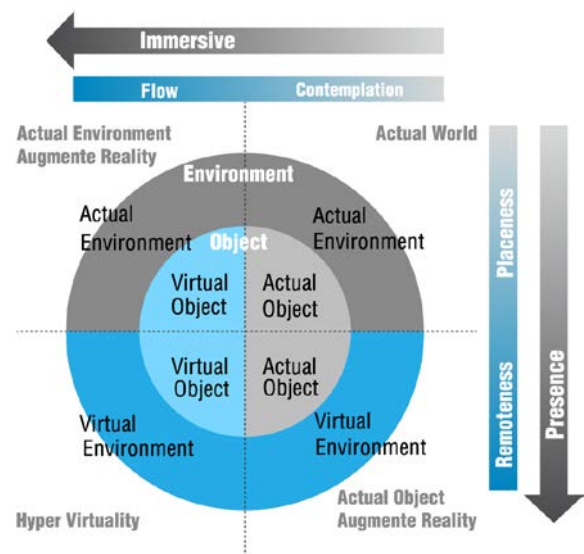


Figure 2. The relationship between environment and object in actual and virtual space.

The above diagrams demonstrate four conditions in which virtuality and actualization exist based on how illusions are set up. Each typology is indicative of a specific device that can be used to best utilize the narrative technique and production style.

5. Discussion & Conclusion

In many cases, mixed reality is often used synonymously with augmented reality (AR) and is often understood as the combination of ‘augmented’ and ‘virtual’. While mixed reality has similar characteristics as that of AR, it is difficult to simplify mixed reality as a consolidation of AR and VR. Currently the technologies and the devices used to express the conditions are often used to distinguish VR and AR. However,

a system uses head mount displays and a real environment as a background may not necessarily be qualified as VR or AR. Therefore, there is a need to introduce an understanding of perception and environmental experience in determining what is reality and virtuality in spatial design.

6. References

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