

Research An the Aesthetic Image of Interaction Design in Immersive Art Exhibition

-- Take Teamlab Borderless Digital Art Museum as an Example

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Abstract

Immersive art exhibition is a combination of plastic art, visual art and new media art. The development of experience art mode from single to innovative makes immersive art exhibition an interactive experiment. This attempt is a creative activity, which reflects people's ideas and aesthetic pursuits. This article takes the interactive design in the Teamlab borderless digital museum as an example, analyzes its expression methods and development status, and aims to explore the aesthetic characteristics and aesthetic image of interactive design in immersive art exhibitions, in order to provide valuable reference suggestions for design practice.

Keywords

Immersive art exhibition, interactive design, aesthetic image, Borderless Digital Museum.

1. Foreword

Immersive art exhibitions are produced in response to the needs of technological development and social reality. They mainly refer to digital means under modern technology and various forms of multimedia display based on traditional art exhibitions and applied to display and disseminate new art form. TeamLab is today's most popular interactive multimedia art creation group. Teamlab Borderless Digital Art Museum has an innovative mode combining "environmental experience" and "multichannel interaction", and is a cutting-edge work in this field. It has a unique aesthetic experience that is different from other immersive art exhibitions, and is known as "one of the top ten must-see exhibitions in the world". This article discusses the presentation mode, development status, aesthetic characteristics and aesthetic image of interactive design in the Borderless Digital Art Museum. First, it analyzes the presentation mode and development status of interactive design in the Borderless Art Museum, and uses examples of Borderless. The exhibition works of the Digital Art Museum study the aesthetic characteristics of interactive design in exhibition activities, and summarize the aesthetic image contained therein, showing that the TeamLab Borderless Digital Art Museum has artistic uniqueness different from other exhibitions, and thus is an immersive art exhibition in China. The interactive design and exhibition planning provided a basis for innovative attempts and research on aesthetic laws.

2. Introduction

2.1. Presentation

Interaction is a variety of behaviors that humans perceive and recognize the objective natural environment. Through various interactive behaviors, we continue to improve our ability to adapt, master, and control the external world, and increase the joy of interaction between

people. Immersive art exhibition is a new form of artistic expression. It is a new type of experiential art that combines people's "five senses" together with the focus on seeing, listening, touching, smelling, participating and interacting. The application of interactive design in immersive art exhibitions has changed the single browsing mode of traditional exhibitions, and realized the possibility of mutual dialogue brought about by the diversified manipulation of the audience to experience the exhibition works. In the field of art and culture, compared with ordinary art exhibitions, the continuously popular "immersive art exhibition" attracts a large number of audiences with its advantages of technology, interaction, and fun. The idea of "borderless" in the Teamlab Borderless museum is derived from the important concept of the TeamLab Art Team headed by Inoko kotobuki. They hope to create art without borders, so that the art works can get rid of the limitations of the exhibition hall space, and communicate with other works. Influence, break the boundary between works and works and merge with each other. For example: "Flower Dance Forest, Lost, Immersion and Rebirth", the image combines interactive technology and dynamic recognition technology. According to the viewer's participation, the flowers in the image will experience growth through computer technology and computer systems such as laser projection and infrared photography. Connect to capture people's movements and produce various fantasy special effects to achieve the effect of interactive projection. New digital technology is also the most important feature of the aesthetic experience of the Borderless Digital Art Museum, which makes the art works intertwined and superimposed, and often it is difficult to distinguish each other. But this kind of thinking is not unique, and there are many cases around the world.

As early as 2010, Ullens Center for Contemporary Art launched an immersive exhibition "Feeling is Real" (pictures 1 and 2), a collaboration between Danish artist Olafur Eliasson and emerging Chinese architect Ma Yansong, Eli Yasong and Ma Yansong use architecture and light to create a special environment. They use light and shadow, color and water mist to create a purely visual environment for the audience, and allow the audience to explore their surroundings through various mechanical phenomena. When the audience walks into this smoky space installed with red, green and blue fluorescent lights, they create their own spectrum. In 2018, "Salute to Da Vinci Global Light and Shadow Art Experience Exhibition", in a space of 200 square meters and a scale of 8 meters high, interact with the large screen through the latest radar interactive technology, and "touch" Da Vinci in the air A classic. In 2019 "Imagination of the Mind Van Gogh Art Immersive Experience Exhibition", the immersive experience uses 360-degree panoramic holographic projection technology to restore more than 200 original works into 3D scenes, reproducing Van Gogh's powerful and tense brushstroke technique, there are stars shining above the head, painting colors flowing around, sunflowers, starry sky and raindrops flow from time to time on the ground, the interactive experience area uses virtual reality VR technology, from Van Gogh's perspective, starting from the cabin, walking in the small town of Arles, go to that famous cafe, walk through the forest and the wilderness, and look up at the starry sky by the river. There are wheat fields, starry sky, cypress trees, sunflowers, taverns, and hard-working people, with a strong immersion A sense of interaction.

2.2. Development Status

Material satisfaction affects people's aesthetic values, and the change of values will promote the evolution of industrial structure. In the process of interaction, we unknowingly step into the age of experience art. The era of experience art has developed from a single experience mode in the early stage to a personalized and innovative experience mode, which puts forward higher requirements for experience design. As early as the beginning of the twentieth century, artists began to try to create immersive and intuitive experience in non-narrative films. Afterwards, through technological changes, immersive art exhibitions have continued to advance to this day.

In recent years, the term "immersive experience" has frequently appeared in major media, and it is not difficult to see its popularity and development trend in full swing. Traditional visual art exhibitions are a static process in the public appreciation process. Just as Wang Chunchen of the Central Academy of Fine Arts Art Museum said: "In traditional aesthetic concepts, the relationship between the audience and the work is "quiet observation", and there is a spatial and psychological distance. And estrangement. The TeamLab team held an installation exhibition in Beijing in 2017. Weibo topics reached 13.21 million times and the number of visitors reached 2500 per day. The data of the Borderless Digital Art Museum project exhibited in Tokyo and Shanghai in 2019 in Xiaohongshu It shows that users of this platform have posted more than 4,500 exhibition notes, with nearly 90 million exposures and 300,000 collections. This shows that Teamlab Borderless Digital Art Museum is very popular among the public. This is due to the exhibition hall's The immersive art interactive experience breaks the barrier between traditional art and the audience in the process of public participation, and pays more attention to the interaction between the audience and the artwork. This interaction is based on the aesthetic reflection of the audience, which is the artwork and the audience. The two sides consciously formed a communication and interaction. Despite this, some shortcomings and deficiencies were exposed in the sense of experience. Some viewers said after watching the "Imagination of the Soul-Immersive Experience of Van Gogh Art" held by the National Expo. The on-site effect is shocking, but the overall is more entertaining. The projection speed and sound effects, as well as the dizzy VR glasses, make it difficult to calmly think about the charm of the artwork itself. "Impression Monet: Time Reflection Art Exhibition", which has been touring in 17 major cities across the country since 2016, is a kind of exhibition that combines tradition and painting with new technical means to repackage exhibitions. They all cooperate with technology companies and do not have special Curators, blindly pursuing visual impact and neglecting creative ideas, have become a hidden weakness under the glamorous appearance of some immersive exhibitions.

3. Aesthetic Characteristics of Interactive Design in Teamlab Borderless Digital Museum

3.1. Narrative Freedom

In the high-tech interactive art exhibition "Along the River on Qingming Festival 3.0" jointly created by the Palace Museum and Phoenix Satellite TV in 2018, the virtual reality Hongqiao Cinema is a ten-meter-diameter ball screen. The audience is lying on the seats of the imitation Song Dynasty cruise ship. You can travel through time and space and visit the Bianhe River. This high-tech interactive art performance juxtaposes the past and the present, disrupting the conventional concept of time. In 2017, "Discovery·Heart-Nurturing Hall-Themed Digital Experience Exhibition", through large-scale immersive projection screens, virtual reality helmets, motion capture devices, touch screens, etc., audiences can enter the Hall of Heart-Nurturing in the virtual world, using AI and VR With advanced technologies such as voice and image recognition, the audience can freely "talk" with the important ministers of the DPRK. The work "Butterfly Beyond the Boundary" in Teamlab shows that human intervention can disrupt the narrative sequence. When the butterflies of this work move from the "continuous small universe" work space in the aisle into this space, the work will be staged. When other works enter this space, the butterfly will leave. Such works show the infinite changes of the work itself through the interaction between people and works, works and works, so that the visitors has rich freedom and choice, and the narrative works have free changes. Sex. So far, compared with traditional exhibitions in chronological order or category design narrative process, digital technology not only allows those fragile and vulnerable ancient cultural relics to reappear, but

also enables free control of the experience path, interaction time and order of interaction with exhibits, and freedom of interaction makes the narrative ending Diversified and personalized.

3.2. Instant Authenticity

Immersive art exhibitions are different from traditional visual art in that the experience of public participation in art aesthetics is more real. This kind of authenticity is based on the instant authenticity of sense formed on technical media such as radar and infrared. "Interactive change" is essentially a range beyond the control of the interaction designer. It is an artistic creation or artistic aesthetic achieved by borrowing digital technology media. It is a collision of thinking between the interaction designer and the art visitors, showing the "authenticity" imagined by the visitors "scene. Teamlab's "Rocks Due to Human Existence" is reproduced stereo in a virtual three-dimensional space, with water flowing down, simulating the movement of water based on the shape of the rock and depicting a waterfall. When a person stands on the work and touches the work, the person becomes a rock that can change the flow of water, and the viewer himself becomes an obstacle to change the direction of the water. The works are affected by the behaviors of the viewers and other works, and continue to change. Such intervention makes the viewer feel as if he is in the real water. In the past, the authenticity of the imagination in the aesthetic experience of traditional art works can only exist in the mind. It is limited to the recognition of artistic symbols through the eyes. The imagination in the mind evokes the same artistic image as the real object. The image may be wrong and incomplete of. However, the interactive design in the immersive art experience can be completely perceived by the art viewer. This authenticity comes from the actual interaction between the work and the interactor. In the immersive art experience, the art recipient is the protagonist of the story. The process of experiencing and appreciating the work is to participate in the construction of the story of the work and the writer of the story.

3.3. Multifaceted Identity

The immersive interactive world provides an unprecedented opportunity for people to separate from their true identities and perform role-playing in many different ways. Because of the existence and perception of digital avatars, the concept of "self" becomes less fixed in virtual reality. I may be the me in the real world, or I may be shaped by the possibilities provided by computer technology, software and hardware. A me with super powers. In classical Chinese stories, Zhuangzi said that I did not know if I dreamed of a butterfly or the butterfly dreamed of me. The work of Teamlab Borderless Digital Art Museum aims to allow people to immerse themselves in art without boundaries, explore with their own conscious bodies, create new worlds with others, and continue to discover. The viewer may be a butterfly in the same scene, it may be a fish in the middle of a stream, or it may be a tree standing on the shore, of course, it may also be the third person watching all of this, freely changing the viewing angle in different roles And way. This feature brings new degrees of freedom and perspective to artistic expression. Observing from the protagonist in the work, or from any preset perspective, makes the viewer feel as true as possible the core thinking of the interaction designer—the unused me that coincides with the self of others.

4. Analysis of Aesthetic Image of Interactive Design in Teamlab Borderless Digital Art Museum

Regarding the aesthetic image, Mr. Minze pointed out: The aesthetic category of image focuses on the relationship between "meaning" and "image". In Tokyo and Shanghai, the "Borderless" Art Museum is a permanent immersive exhibition hall. The TeamLab design team has designed and arranged many thematic exhibitions. The most popular works are: "The Forest of Lights", "Crystal Universe" and "Flowers". "Forest with People" and so on. In this exhibition, the

"intention" is the design intention presented by the designer through the work and the subjective information received by the viewer, and the "image" is the work presentation of the designer through the new media technology and the viewer's interaction. The specific expression of the interaction of the works, the exhibition breaks through the limitations of the exhibition hall space, and strives to communicate with the audience through technical elements such as lighting, streaming animation video, music, and human projection capture. The audience's aesthetic behavior feedback can also play a role in the artistic presentation and break the artistic performance. The audience's static aesthetic relationship breaks through the boundary of artistic aesthetic appreciation.

4.1. Real Time and Space Transformation

In new media art, digital multi-sensory integrated media expands the possibilities of expression, audience experience, and feedback. Compared with traditional media, immersive interactive experience can be said to be a further expansion of the way the work communicates with the viewer. Approaching or transcending the real world. Teamlab's "Forest of Lights" installation art is set up in a mirrored space with countless costumed lights. The art audience enters this space. The colors of costumes and concerts switch and interact with their steps. The rich changes in colors bring visual stimulation, the switch of music mobilizes mood swings. The "Crystal Universe" exhibition uses linear light points to create three-dimensional works, similar to paintings with colored dots. This work is more interactive between the artwork and the audience. The audience can select the elements of the universe through the smart phone. The art installation based on this feedback can present the audience with an all-round dream space. Different audiences participate in the interaction, and a variety of art works are constantly being created. This is a comprehensive interpretation of artificial intelligence, programming, lighting and other technical elements, which explains that the process of aesthetic acceptance is also aesthetic creation. The exhibition "The Forest of Flowers and People" uses rich natural elements such as flowers, plants and trees. The four seasons in the entire exhibition space alternately draw images of flowers and plants in real time through programming languages. The audience can watch the four seasons of flowers and plants grow and fade in this space. The audience can watch the flowers and plants, and the flowers and plants will grow more luxuriantly. On the contrary, if the audience touches the flowers and plants, the flowers and plants will wither and die.

4.2. Thinking and Creating

The public's aesthetic thinking on works is the ultimate way to realize the aesthetic value of artistic works. Therefore, artistic thinking is an important link in the formation of the art world. The interactivity of immersive art stimulates different imaginations of art viewers. The work created by the artist not only requires the viewer to have a psychological resonance, but also requires the viewer to understand and think, fill the work or even shape the work. In Teamlab "The Forest of Flowers and People", if a person does not move, it will bloom next to him, and if someone steps on it, its petals will fall. In Tokyo's "Floating Nest", groups of crows chase in the air like calligraphy, and when they collide with each other or people, they become flowers. In the work "Rocks Existed by People", visitors can gather around a rock at the bottom of the waterfall and transform themselves into smaller rocks, thus changing the flow of water falling from the space above. Walking along the walls of the exhibition corridor, you might encounter a tiger made of flowers or butterflies that escaped from other rooms. But the animation sequence will only start when certain objects from other spaces, such as butterflies and crows, appear outside the room. The human body projection capture and artificial intelligence technology directly realize the work in the aesthetic experience to give feedback to the receiver's active response and create a work of art, realizing the cyclic process of experience creation and re-experience creation in real time, and viewers are more willing to participate in

the immersive art experience In creation, it breaks through the aesthetic dialogue in the traditional imagination, and directly transforms the virtual dialogue into reality. The interactive aesthetic acceptance of immersive art perfectly explains that artistic thinking is also the re-creation of art. Every time the public participates in the immersive aesthetic experience of art, it is also an active re-creation of aesthetic psychology.

4.3. Forgetting Things

Immersive interactive experience is a kind of immersive experience completely substituting into an environment, the viewer is completely lost in a certain environment, and the immersive appreciation even reaches a state where subject and object are integrated emotionally and physically. Human beings have been pursuing the state of concentrating and forgetting things in artistic aesthetics. Chinese classical poems are good at expressing this mental state of fusion of scenes. We can understand this by using techniques such as "personification" and "combination of scenes" in many classical poems. The psychological beauty of an empathetic crop. The combination of imagery in appreciation also pursues an aesthetic psychological state in which the object and the two forget are merged into one. The art audience communicates with the art creator through the art work, which is also the goal effect pursued by the art work creator. In Teamlab's "Weightless Forest Resonating with Life", physical balloons become objects of light, changing colors under human touch. The nearby balloons will replicate each other behavior in the form of a chain, so if a color passes between the balloons, it indicates that someone else is there. There is no map and no fixed route in the exhibition hall of the Borderless Digital Art Museum. Because all the spaces are connected to each other, visitors are encouraged to get lost in them and find a route by themselves. This way of viewing the exhibition makes the viewer forget that this is one. The exhibition focuses more on the experience itself, as well as the traditional Japanese concept of "one period, one meeting" reflected in the Borderless Digital Museum exhibition. This concept is even more thought-provoking under the background of technology. The designer strives to make the magic of nature "Light" was laid out in front of the audience in a short period of time, allowing people to see the magic of hundreds of millions of years. This is the essential difference between the moment and the eternity. The "moment" here records the eternity of nature. ", teamLab's interactive design is very delicate, it is "a required interaction" rather than a mandatory interaction. "For example, when you instinctively want to touch a bunch of flowers, when the tentacles touch each other, the flowers will instantly scatter in the bottom of your hand. Make a plume of smoke. In addition to the surprise, you want to try every interaction with beautiful things even more, although you know that it is nothing after all. "Immersive art presents a real life experience for art viewers. The interactive three-dimensional aesthetic experience shortens the psychological distance between art viewers and works, and enhances the emotional investment of art recipients in the appreciation of art works. In the set virtual real environment, do not forget to lose yourself in the artistic story. In the process of aesthetics, experience accumulation can directly enter the state of psychological integration and resonate with the author to form an aesthetic dialogue. This fusion of psychological emotions fully achieves both the object and the self in the artistic aesthetic Forget and empathize with the aesthetic realm of crops.

5. Conclusion

In today's intelligent age, the rapid development of technology provides a richer expression language for art and design. The immersive interactive art exhibition has its own artistic and cultural characteristics and brings people philosophical thinking and spiritual joy. From an aesthetic point of view, the Teamlab Borderless Digital Art Museum is an interactive and experiential art exhibition form with narrative freedom, real-time real experience, multifaceted identity changes, and audience as the main body. People can experience real time and space

transformation in it. Think about the ideological meaning of the work and carry out the "secondary" creation, deeply integrate into the immersive experience brought by the exhibition and the work, and achieve the aesthetic conception of forgetting both things. The digital natural "world" created in this way can explore the new relationship between man and nature and between man and the world through art, freeing technology from the inherent cold impression, and being filled with compassion for all things. According to Starabras's point of view, whether it is an academic-oriented exhibition or a commercial-oriented exhibition, the aesthetics of all levels of art are built on the basis of popular culture. For this reason, art usually needs to be complicated with art history. The reference relationship, and requires the audience to have the corresponding professional knowledge. Therefore, art culture is closely related to the audience's pursuit of knowledge. In immersive art exhibitions, new types of exhibitions should be actively introduced to take advantage of the characteristics of this type of exhibition to give the audience a more comprehensive and rich viewing experience.

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