

Study on the Application of Digital Media Art Based on Interactive Perspective

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Abstract: The rapid development of digital technology has greatly reshaped people's way of life. In today's era, the rapid development of digital technology has greatly reshaped people's way of life, and digital media has risen to become the dominant medium of information dissemination, and this change has profoundly affected the art field. Digital media art, as an interdisciplinary product of the integration of digital technology and art creation, has become an indispensable part of the contemporary art landscape. The purpose of this paper is to explore the application of digital media art from the perspective of interaction design, firstly to overview the current situation of interaction design and digital media art, then to analyze the core necessity of interaction design in the application of digital media art, and finally to reveal the practice of digital media art based on the perspective of interaction through the analysis of specific cases. This paper seeks to provide useful reference and inspiration for the expansion and application of digital media art to the field of interaction design.

Keywords: Interaction Design; Digital Media Art; Application Research.

1. Introduction

With the rapid development of information technology, digital media art, as an emerging form of artistic expression, has gradually become an important carrier of cultural creation and dissemination in modern society. Especially with the continuous progress of interactive technology, the expression methods and application fields of digital media art are undergoing profound changes. Interactive perspective, as a unique artistic expression in digital media art, breaks the one-way communication mode of traditional art and transforms the relationship between creators and audiences into interaction and co-creation. In this interactive process, the audience is no longer a passive receiver, but becomes a part of the art work, and is able to participate in the creation and presentation of art through their own actions, emotions or thoughts, which greatly enriches the expressiveness and experience of art. In recent years, digital media art with interactive perspective has not only been widely used in entertainment, games, virtual reality and other fields, but also shown strong potential in art exhibitions, education and training, advertising and marketing and other industries. It integrates visual, auditory, tactile and other multi-sensory experiences to create a more immersive and personalized art space, which promotes the innovation and development of art forms and cultural expressions. Therefore, the study of digital media art based on the interactive perspective not only provides new horizons for artistic creation, but also offers unprecedented opportunities for audience participation and experience!

2. Interaction Design and Digital Media Arts Overview

2.1. Interaction Design

Interaction design focuses on exploring and optimizing the interaction between people and products or systems, and requires designers to carefully conceptualize and plan the interaction mode of a product from the perspective of user experience, aiming to ensure that users can conveniently and

efficiently operate and use the product. The core goal of this field is to create an intuitive, easy-to-use and enjoyable user experience that enhances the usability and attractiveness of a product.

In the practice of interaction design, the user is always at the center of the design. Designers need to pay close attention to users' needs, behavioral patterns, psychological states, and the overall experience to ensure that the product design accurately matches users' expectations and preferences. This design philosophy is closely linked to user experience design, which works together to understand the perceptions, emotional responses, and behavioral characteristics of users in the process of using a product, in order to create a satisfying user experience.

Interaction design also focuses on the optimization of information architecture and presentation. Designers need to carefully plan the organization and presentation of information so that users can quickly and accurately locate what they need. At the same time, interaction design encompasses the design of product interfaces, controls, and interaction mechanisms to provide users with an intuitive and user-friendly environment in which they can easily interact with the product.

In today's digital age, interaction design has become a key element in product design. Whether it is a website, a mobile application, or a smart device, all products require excellent interaction design to provide a great user experience. Therefore, in-depth exploration and practice of interaction design is of great significance to enhance the market competitiveness of products and user satisfaction.

2.2. Digital Media Art

Digital media art, as an interdisciplinary expression of the convergence and integration of digital technology and art creation, covers a wide range of fields such as computer science, digital media and interactive technology, and its scope is broad, including virtual reality, augmented reality, interactive installation art, digital painting, digital sculpture, digital music and digital video and other forms. This art form promotes the cross-border fusion of visual arts, performing

arts, music and sound arts, literature and other artistic disciplines, and combines in-depth expertise in the fields of computer science, engineering and interactive design.

Artists use digital technology as a medium for creative expression, building virtual environments, enhancing interactivity, and utilizing digital media to convey their creative ideas and perspectives. Digital media art offers a wide variety of creative forms and platforms, from computer programs and sensor technologies to projection displays and interactive installations.

Digital media artworks are known for their high degree of interactivity, participation and cross-media characteristics, which enable the viewers to communicate with or participate in the artworks through various ways, and then dynamically change and influence the final presentation of the artworks. In the field of contemporary art, digital media art not only introduces new creation techniques and expression dimensions for traditional art forms, but also challenges the traditional concepts of art, science and technology, and media, and opens up new exploration paths for the in-depth integration of art and technology.

With the continuous progress and innovation of science and technology, digital media art has become more and more prominent in the field of art and design, and has become a key force to promote the continuous innovation and evolution of art creation methods and aesthetic experience.

3. Research on the Necessity of Digital Media Art Application Based on Interactive Perspective

3.1. Enhance The Interactivity and Immersion of Digital Media Art Application Experience

The application of digital media art from the perspective of interaction significantly enhances the user's participation, immersion and personalized experience, which in turn strengthens the artistic infectivity and ornamental value of digital media art. Interaction design gives digital media art works a higher degree of participation, the audience through action, sound, touch and other ways to interact with the work, this interaction not only deepens the connection between the audience and the work, but also brings the audience to participate in and explore the fun, so that the viewing process becomes more vivid and interesting.

With the help of interaction design, digital media artworks can create a more immersive experience. Through interaction with the work, the audience gets a deeper sense of participation and experience, making the viewing process an immersive enjoyment, thus enhancing the expressive power and infectious force of the work. In addition, interaction design can flexibly adjust the form of expression of the work according to the audience's behavior and feedback, ensuring that each audience can obtain a personalized viewing experience. The viewer influences the presentation of the work through his or her own behavior, thus obtaining a unique viewing experience, which greatly enhances the emotional resonance between the work of art and the viewer.

Interaction design also provides artists with new creative techniques and forms of expression, enabling digital media artworks to display richer and more complex artistic connotations. Through interaction design, artists can create challenging and avant-garde works, thus promoting the

innovation and development of digital media art. In conclusion, studying the design application of digital media art from the perspective of interaction can fully realize its strong interactivity and immersion, so that the viewer can obtain a rich and profound artistic experience. At the same time, this also provides artists with a broader creative space and performance carrier, pushing digital media art to a more diversified, open and avant-garde art new realm.

3.2. Facilitate the Effective Connection Between the Artistic Beauty of Digital Media Art Applications and the Sense of Science and Technology

The application of digital media art from an interactive perspective skillfully integrates the artistic beauty and technological charm of digital media art, realizes the deep integration of art and technology, and injects vitality and innovative vitality into the field of digital media art. Interaction design as a bridge, the artist's creative inspiration and advanced technical means closely combined, so that the digital media art works in the manifestation of artistic aesthetics, but also highlights the cutting-edge of scientific and technological innovation and practicality. The works created by artists with the help of interactive design not only contain deep artistic connotation and aesthetic value, but also show the wisdom and functional advantages of technology.

Through interactive design, digital media art works can guide the audience to actively participate in the interaction, so that the audience from passive recipients to participants and even co-creators of the works. This high degree of participation not only deepens the audience's emotional connection to the work, but also makes the technology an integral part of the art, and inspires the audience to think deeply about the intertwined relationship between science and technology and art and the desire to explore.

The application of interaction design further inspires digital media artists to explore new technical means and creative expression paths, and this unremitting exploration promotes the mutual nourishment and progress of science and technology and art, giving rise to many innovative and avant-garde artistic masterpieces. Interaction design gives digital media artworks flexibility and interactivity beyond traditional display methods and art forms, a characteristic that allows artists to more freely incorporate technological elements to create both forward-looking and experimental artworks.

4. Analysis of Digital Media Art Applications Based on the Interactive Perspective of the Study Examples

4.1. Immersive Interactive Experience Exhibition of Digital Media Art Application from Interactive Perspective

As a key category of digital media art application, immersive interactive experience exhibition creates a deep investment in art experience for the audience through the integration of immersive technology and interactive design concepts. These exhibitions often utilize cutting-edge technologies such as virtual reality, augmented reality, and interactive installations to lead the audience into a creative and imaginative digital media art fantasy world. In this

exhibition scene, the audience can interact with the artworks through body movement, sound and touch, and thus obtain a richer and deeper artistic perception.

Immersive exhibitions have the ability to lead the audience to a virtual and surreal art space, allowing them to enjoy an audio-visual feast that transcends the real world. The viewer seems to travel through time and space, immersed in the intense atmosphere created by the digital media artworks. The exhibition also dynamically adapts to the individual behavior and immediate feedback of the audience, ensuring that each viewer is rewarded with a unique and engaging experience. Through their own actions and choices, viewers are able to influence the expression of the work and thus enjoy a personalized art journey.

The immersive exhibition closely integrates digital media art with cutting-edge technology, presenting the audience with novel forms of artistic expression and innovative technological experiences. This integration not only promotes deep interaction and co-creation between art and technology, but also brings audiences more diversified and challenging art enjoyment. In addition, immersive exhibitions provide valuable social and interactive opportunities for audiences to explore, share and exchange their experiences and perceptions with other participants, thus transforming the art experience into a social and interactive activity.

Overall, the immersive interactive experience exhibition opens up a new display path for digital media art, enabling the audience to participate more deeply in the creation of art, and to feel the charm of richer, more personalized and avant-garde art. This exhibition form undoubtedly promotes the innovation and development of digital media art, and brings the audience an unprecedented way of art experience.

Taking Li Ansai's design work "Design Application of Immersive Experience in Cultural Exhibition Space - Kaifeng Yu Opera Museum as an example" as an example, the effect display of its performance hall and playback hall fully demonstrates the charm of immersive exhibition. The performance hall brings the audience a shocking visual feast of Yu opera through the integration of visual, auditory and tactile exhibition tools, such as rotating 3D display screen and holograms. Each electronic touch screen device is equipped with a smart headset and QR code, so that the audience can listen to the play by simply scanning the code on their cell phones. This design not only allows groups such as the elderly and children to easily access the Yu opera, but also effectively solves the problems of safety and noise pollution. The tactile experience of the electronic touch screen stimulates the audience's interactive enthusiasm, while the ring screen plays the drama repertoire, creating a theater-like immersion effect. The spherical interactive device adds to the hands-on experience, completely subverting the single display of traditional culture. Kaifeng Yu Opera Museum integrates high-tech exhibition means in space design, realizing the perfect integration of traditional Yu Opera culture with modern plastic arts and new multimedia technology, and showing the collision and fusion of future and tradition.

4.2. Urban Public Art Space as an Application of Digital Media Art from Interactive Perspective

Urban public art space, as an important application field of digital media art from an interactive perspective, is increasingly showing its indispensable role. This kind of application not only greatly enriches and expands the

performance dimension of urban public art space, but also brings more vivid, interesting and diversified art enjoyment to the public with the help of interactive design of digital technology. The integration of interactive digital media art in urban public art space can provide citizens and tourists with a richer and more vivid urban interactive experience. By means of digital interactive installations, projection mapping, virtual reality technology and other means, the audience can actively participate in the creation and presentation of art works, thus realizing the depth of interaction and close connection between urban public space and the audience. This interaction not only enhances the participation and interest of art works, but also makes the urban public space revitalized with new vitality and vigor.

Interactive digital media art applications can also become a powerful carrier of cultural exchange and education in urban public space. Through digital media technology, it can widely disseminate urban culture and historical stories to the public and provide artistic educational experiences, thus enriching the cultural heritage of public space and enhancing the cultural identity and sense of belonging of citizens and tourists.

In addition, interactive digital media art works can also be used as the city's iconic landscape, adding a unique artistic flavor and fashionable atmosphere to the city. While enhancing the city's image and attractiveness, these works also inject new vitality and creativity into the urban public space, making it more diversified and modernized.

Interactive digital media art applications can also effectively promote the participation and interaction of community residents and become an active platform for cultural exchange and community activities. Through the interactive design of digital art works, it can fully stimulate the interest and participation of community residents, and then promote the prosperity of community cultural activities and promote interactive communication between neighbors.

The integration of digital media art applications in urban public art space under the interactive perspective not only brings new artistic vitality and cultural charm to urban public space, but also provides citizens and tourists with a richer, more interesting and interactive urban art experience. This integration promotes the deep blending of urban culture and art, further enriches the cultural connotation of urban public space, and promotes the inheritance and innovation of urban culture.

Take the LUMINA night tour project "Glow Forest - Oriental Sunrise" based on the woodland of the Central Park in Fengxian, Shanghai as an example. Inspired by the ancient Chinese myths and legends "The Classic of Mountains and Seas" and the five elements of yin and yang, the project is the first public space in China to integrate the woodland, night tours, humanities and digital art into a single entity. Visitors can experience a variety of interactive installations and light and shadow special effects in perfect combination with the real-life scenery during a strolling journey of about one hour. Visitors will be able to witness local cultural elements of Fengxian such as magnolia flowers, rolling lanterns, and "Xian culture" take on new life and connotation through the interpretation of light and shadow technology and high-level aesthetic expression. Immersed in the light and shadow garden based on natural scenery, visitors not only enjoy the green development path of forest economy, but also witness the exploration and practice of the sustainable development model of forests for forests.

4.3. Interactive Experiential Advertisement of Digital Media Art Application from Interactive Perspective

Interactive experiential advertising, as an innovative form in the field of digital media art application, skillfully integrates interactive design and digital technology, bringing viewers a multi-dimensional, immersive, participatory and personalized advertising experience, such as audio-visual and touch. This advertising model abandons the traditional one-way information dissemination, and instead establishes an emotional connection with the audience through real-time interactive experience, stimulating their participation and reaction, thus realizing a more efficient and far-reaching communication and marketing effect of the brand or product.

Interactive experiential advertising has a strong attraction and can stimulate the audience's desire to participate. The audience interacts with the advertisement through touch screen, voice-activated device, somatosensory interaction and other ways, realizing the change from passive acceptance of information to active participation in the content, and even becoming an indispensable part of the successful display of the advertisement. With the help of interactive design, advertisements can be instantly adjusted according to the audience's behavior and feedback to achieve personalized presentation, and this customized experience makes the advertisements closer to the audience's interests and needs, and significantly improves the interactivity and attractiveness of the advertisements. In addition, interactive experiential advertisements utilize advanced technologies such as virtual reality, augmented reality, holographic projection, etc., to present advertisements in a more vivid and shocking way, providing a richer and more diverse form of information communication. This innovative presentation not only enhances the visual impact of the advertisement, but also brings an unprecedented immersive experience to the audience. Interactive experiential advertising also has significant advantages in shaping brand image and enhancing awareness. Through the interactive experience, viewers can understand and remember the content of the advertisement more deeply, thus enhancing the communication effect of the advertisement and leaving a deeper and more positive impression of the brand. At the same time, the emotional resonance of the advertisement can further deepen the audience's sense of identity and loyalty to the brand.

It is worth noting that interactive experiential advertising can also provide brands with more accurate and effective market feedback and user insights by collecting and analyzing data on viewers' interactive behavior. These data not only help brands evaluate the effectiveness of their ads, but also guide the adjustment and optimization of their marketing strategies to achieve more precise market positioning and audience reach.

Take the interactive digital billboard installed by Swedish pharmacy Hjartat in Stockholm as an example, which cleverly

incorporates smoke detector technology. When a smoker passes by or stops by, the model in the advertisement will make movements and sounds to indicate that she hates the smell of smoke, thus conveying a positive message about quitting smoking. The design is not only fun and interactive in real time, but it also encourages smokers to reflect on the negative impact of their behavior on others. The agency also recorded the smokers' reactions in a video and distributed it on the Internet, further expanding the impact of the ad. Interactive experiential advertising opens up new possibilities for brand marketing through the application of digital media art, greatly enhancing the creativity, interactivity and impact of advertising. At the same time, this form of advertising also brings more rich, interesting and personalized experience to the audience, and realizes the deep communication and emotional connection between the brand and the audience.

5. Conclusion

To summarize, the research on the application of digital media art under the perspective of interaction plays a crucial role in enhancing the interactivity and immersion of digital media art, and at the same time, it can effectively integrate the artistic aesthetics of digital media art with the charm of science and technology. This research is of far-reaching significance for promoting the innovative development of digital media art, enriching its artistic expression, deepening the integration of digital media art and science and technology, enhancing the audience's perception of participation and expanding the social influence of digital media art. In this paper, we will analyze and explore the three dimensions of immersive interactive experience exhibitions, urban public art spaces and interactive experiential advertisements through examples, aiming to provide useful references and inspirations for the evolution of digital media art in the direction of interactive design.

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