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West Bund Art Museum Shanghai, China: A Multi-Interactive Educational Space in the Context of Globalization

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ABSTRACT

In the context of globalization, the design of educational spaces necessitates not only a consideration of local cultures but also the capacity for cross-cultural communication. Deeply ingrained in educational space design, cultural sensitivity and a global perspective are instrumental in cultivating learners' international outlooks, global cultural dissemination, and most crucially, their literacy. Here, literacy encompasses the proficiency to understand and communicate across diverse cultural and disciplinary contexts, a competence of paramount significance within the global educational framework. Educational space design, a comprehensive interdisciplinary research domain, seamlessly integrates educational theory, psychology, anthropology, and sociocultural research. Through the meticulous planning and design of physical spaces, it generates interdisciplinary learning experiences, which facilitate the stimulation of technological innovation. These experiences not only enable learners to acquire knowledge but also enhance their capabilities to read, write, and interpret information presented in diverse cultural and disciplinary forms, thereby achieving all-inclusive education. In response to the evolving trends in education, the design of educational spaces has increasingly emphasized interactivity and experientiality. The multi-interactive spaces within contemporary art museums are capable of meeting these requirements. Consequently, in recent years, art museum education has gradually shifted from a static exhibition - centered function to one that prioritizes multi-interactive spaces. The West Bund Art Museum in Shanghai, China, serves as an exemplar of this trend. This research takes the West Bund Art Museum as a case, adopting a qualitative analysis approach. It combines case-study methodologies with participatory observations and collects data through multiple channels, including literature analysis, interviews, and on-site observations. The data collected is synthesized using thematic analysis. The research findings indicate that multi-interactive educational spaces significantly stimulate learners' interest through immersive experiences, improve the effectiveness of knowledge acquisition, and simultaneously create more opportunities for literacy-focused education. Based on a comprehensive analysis, this research puts forward several suggestions for the educational space design of contemporary art museums. These include optimizing interactive content and strengthening technical support to enhance the depth and breadth of global cultural dissemination. This research is expected to provide theoretical foundations and practical guidance for the innovation of educational spaces in art museums globally, as well as offer valuable references for the educational design of other cultural and educational spaces.

Key words: Educational Space, Global Cultural Dissemination, Literacy， Multi-Interactive, Contemporary Art Museum, Interdisciplinary Learning Experiences, Technological Innovation, All-Inclusive Education

INTRODUCTION

Research Background

In the era of rapid information technology development, Chinese contemporary art museums, as pivotal venues for cultural dissemination and education, are undergoing a profound transformation from traditional static exhibitions to dynamic interactive spaces. As the epicenters of artistic culture, contemporary art museums serve as key institutions for social aesthetic education. With the advancement of digital technologies and the evolution of audience demands, the exhibitions in contemporary art museums have become increasingly diverse, encompassing traditional visual arts as well as avant-garde digital art, installation art, and video art. These exhibitions aim to foster dialogue between art and society, redefine our perception of contemporary art museums, and create immersive and participatory learning experiences. Within these experiences, the enhancement of

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learners' literacy skills pertains to their ability to understand, interpret, and communicate about art across diverse cultural and disciplinary contexts. This ability is of paramount importance for fully appreciating the diverse art forms presented, not only enriching the educational experience but also expanding the possibilities of education. Urban public open spaces are essential arenas for public life and social interaction. As a landmark cultural institution in a first-tier Chinese city, the West Bund Art Museum takes the lead in exploring the multi-interactive space model in its educational design. By leveraging advanced technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI), the museum not only redefines educational approaches but also attracts a broader audience, including visitors of various age groups and international tourists. Visitors are tasked with "decoding" intricate artworks and "encoding" their interpretations via diverse means, including digital comments, physical inscriptions, or oral discourses. These endeavors are essential elements in fostering literacy skills, enabling visitors to better comprehend and engage with art, thereby enriching their overall learning encounter.

This study breaks through previous research that focused on the operation of contemporary art museums and the physical attributes of space, innovatively starting from the design of educational spaces in the context of globalization. It emphasizes the core position of diverse interactive spaces in the educational function of contemporary art museums, opening up new horizons for contemporary art museum research and making the research more aligned with the realistic background of frequent cultural exchanges and diverse educational technologies in contemporary society. This research adopts a unique perspective: it brings new value and direction to the field of contemporary art museum education research from multiple dimensions such as research methods and application of results, continuing the research trajectory in this field. Together with previous studies, it builds a multifaceted system of contemporary art museum research, enriching the comprehensive understanding of contemporary art museums from different perspectives and making the thematic network of contemporary art museum research more complete. Moreover, the practical guidance provided by the results of this research is stronger: it not only analyzes the design principles and educational value of diverse interactive spaces but also proposes specific optimization suggestions and policy management recommendations for these issues, such as resource optimization, content update mechanisms, and audience guidance training. This directly provides operable solutions for the educational practice, management, and operation of contemporary art museums. Compared with previous similar studies, it has significantly improved in terms of the application and transformation of research results, making it more valuable for practical guidance (Figure 1).

Figure 1. West bund art museum ShangHai
Source: Photographed by YitongJiang 2024-9

Research Significance

In the contemporary cultural context intertwined with globalization and digitization, contemporary art museum education stands at a pivotal juncture of profound transformation. The rise of the diversified interactive education model signifies the extension of contemporary art museum functions—from pure cultural exhibition to the expansion of knowledge sharing and social participation. This model is particularly suitable for today's contemporary art museums, where their rich visual language and interdisciplinary characteristics provide a broader space for innovation in interactive design. At the same time, as an educational tool, the diversified interactive model can effectively stimulate the audience's enthusiasm for participation, enhance the depth and breadth of learning, and make significant contributions to enhancing the public's cultural literacy and artistic appreciation. The traditional static exhibition-dominated educational model has struggled to meet the increasingly diverse cultural demands and learning expectations of the audience. Exploring new educational space designs has become a core issue that urgently needs breakthroughs in the field of art museums. This research issue is of significant importance and cutting-edge significance, and it has far-reaching implications for promoting the development of art museum education. In terms of the expansion of contemporary art museum functions, they have broken through the boundaries of pure cultural exhibition and transformed into a multifunctional complex of knowledge sharing and social participation. The diversified interactive educational space has become the core driving force and cutting-edge frontier for this transformation. By integrating cutting-edge technology and innovative educational concepts, contemporary art museums can integrate art resources, break down disciplinary barriers, and build a cross-disciplinary learning ecosystem. At the same time, in the macro pattern of global cultural dissemination, the multi-interactive space of contemporary art museums injects new vitality; in the context of accelerated cultural collision and integration in the process of globalization, it can transcend regional and cultural differences, display diverse cultural arts in an intuitive interactive form, and promote the understanding, recognition, and acceptance of heterogeneous cultures among audiences with different cultural backgrounds. The West Bund Art Museum attracts international tourists to participate in interactive experiences, becoming a miniature window for cultural exchange. Through artistic interaction, it eliminates cultural barriers, enhances cultural consensus, strengthens the role of Chinese contemporary art museums as bridges and bonds in the global cultural dissemination network, and helps build a culturally diverse and symbiotic ecosystem, highlighting its key value in the strategic level of cultural dissemination. Developing cultural literacy is crucial for better cross-cultural communication.

Research Objectives

This research aims to explore the application of the multi-interactive space in the spatial education design of the West Bund Art Museum. By analyzing its core design concepts, implementation methods, and educational effects, it puts forward optimized educational suggestions for reference by other contemporary art museums. The specific research objectives are as follows:

1. To analyze the design principles of the multi-interactive space and its application in education
2. To explore the impact of the multi-interactive space on the audience's learning experience.

The research focuses on the multi-interactive space of the West Bund Art Museum. By sorting out its technical characteristics and content design, it summarizes how this model integrates art and education to create an immersive learning experience. Special attention is paid to how the interactive model uses advanced technologies (such as augmented reality, virtual reality, etc.) to enhance the audience's sense of participation and learning process. The aim is to deeply analyze the design principles of the multi-interactive space of the West Bund Art Museum, including aspects such as technology integration, user-oriented participatory design, and multi-information integration, and to explore its specific application methods in education, providing practical examples of educational spaces for reference by other art museums.

Additionally, this research endeavors to comprehensively examine the specific impact of the multi-interactive space on the learning outcomes of the audience from the perspective of participants. The scope of investigation encompasses knowledge acquisition, cultural identity formation, and emotional resonance. Through a combination of in-depth interviews and systematic observations, this research aims to meticulously collect audience feedback, with the intention of thoroughly understanding their experiences, feelings, and gains during the interaction process.

Subsequently, by analyzing the collected data, this study will precisely identify the strengths and weaknesses of the multi-interactive space within the context of museum education. Such an analysis is crucial for further exploring effective strategies to enhance the efficiency of educational content dissemination and, ultimately, to improve the cultural literacy of the audience. This research is expected to contribute to the existing body of knowledge in the field of museum based education and provide valuable insights for the design and implementation of educational programs in museums. By achieving the aforementioned objectives, this research aims to provide a theoretical foundation and practical references for educational innovation in contemporary art museums in China and globally.

RESEARCH METHODS

Research Design

This study adopts qualitative research methods, aiming to explore the educational application of the multi-interactive space in West Bund Art Museum through case studies and participatory observation. The research site is selected as West Bund Art Museum, focusing on the design and implementation process of the contemporary art museum's multi-interactive space, and conducting in-depth analysis in conjunction with the actual experiences of the audience. In-depth interviews and on-site observations can capture the subtle interactions between the audience and the interactive space, revealing the underlying mechanisms of educational design.

Data Collection

Data collection is divided into three parts: literature analysis, interviews, and on-site observations. This research first retrieved relevant literature on art museum education, interactive design, and diverse learning spaces from both domestic and international sources, including academic journals, conference papers, and technical reports. The purpose of literature analysis is to provide a theoretical foundation for the study and determine the uniqueness of the art museum space education design of the West Bund Art Museum. The research conducted semi-structured interviews with the following groups: contemporary art museum education personnel to understand the concept, implementation process, and educational goals of multi-interactive spaces; technology development teams to explore the technical implementation of multi-interactive modes and their support for educational outcomes; learners and audiences, including participants of different ages and cultural backgrounds, to collect their subjective feelings and feedback on the interactive experience. The interview questions were mainly designed around the following aspects: the educational goals and actual effectiveness of interactive design; the learning experience of audiences during the interactive process; the main challenges and possible directions for improvement. Multiple interviews were conducted, with interview durations ranging from 30 to 60 minutes, and all interviews were recorded and transcribed. At the same time, a two-week on-site observation was conducted to record the following: the behavioral patterns of audience use of interactions, such as participation time, interaction depth, and feedback performance; the educational effects of different types of diverse interactions, such as whether immersive experiences promote knowledge acquisition and cultural understanding; the degree of integration of interactive design with exhibition themes and audience emotional resonance. Observation data were archived through detailed notes and video recordings to support subsequent analysis (Figure 2).

Data Analysis

The data analysis employed the thematic analysis method to extract key themes related to the research objectives from interviews and observations. The specific analysis steps are as follows: Data collation: Transcribed interview texts and observation notes were categorized by theme; Theme extraction: Core themes regarding multi-interactive spaces, educational impacts, and improvement suggestions were

Figure 2. Modern performances in contemporary art museum
Source: Photographed by YitongJiang

initially extracted; Result integration: Combined with literature analysis, themes were compared with existing theoretical frameworks to further verify the reliability of research findings.

Scope of Study

The scope of this study is limited to the diverse interactive spaces of the West Bund Art Museum, with a focus on analyzing typical cases, such as the virtual reality interactive experience area and children's creative workshops.

RESEARCH RESULTS AND DISCUSSION

Results

Design principles and educational value of multi-interactive spaces

The multi-interactive space of the West Bund Art Museum is mainly characterized by innovation and immersion. It combines technology with art to create an engaging educational environment. This multi-interactive mode integrates technology and dynamic displays, and widely applies technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) to provide visitors with a highly interactive learning experience. For example, the "Art Journey" exhibition area in Picture 1 uses VR technology to recreate historical scenes, enabling visitors to "travel back" to the era of artistic creation and personally experience the cultural connotations of artworks. In terms of learner-oriented participatory design, the multi-interactive space places more emphasis on the active participation of learners. They can freely choose and explore content of interest through touchscreens, voice and gesture control. This interactive design enhances the personalization of the learning process (Jianguo, 2003). For instance, in the "Future Art" exhibition area in Picture 3, visitors can dynamically generate their own artworks through gesture control, thus deepening their understanding of contemporary art.

Regarding the integration of diverse information, the multi-interactive mode in the exhibition area not only displays static artworks but also supplements their background information through multimedia technology, including the creative process of artists, the cultural background of the works, and their social significance (Song et al., 2021). Moreover, it significantly improves the overall literacy skills of participants.

Research has also found that the multi-interactive space of contemporary art museums has significant advantages in enhancing learners' learning effectiveness and cultural dissemination. It helps learners improve the depth of learning and memory. Through immersive experiences, the interactive mode presents complex artistic concepts in an intuitive form. For example, in the "Digital Art Space", the interactive screen shows how traditional artworks are re-created through digital technology, making it easier for visitors to understand the combination of technology and art through hands-on operations. Interview data shows that 86% of the respondents indicated that the interactive space enhanced their memory and understanding of the exhibition content. In terms of promoting emotional resonance and cultural identity, the multi-interactive space establishes an emotional connection with visitors through diversified designs. For example, the "Homeland Memory" exhibition area in Picture 2 uses AR technology to allow visitors to "enter" a virtual traditional home scene, enhancing their sense of cultural identity. Most respondents said that this design made them more acutely aware of the importance of cultural inheritance. At the same time, it supports learning across multiple age groups. The design of the multi-interactive space caters to the needs of audiences of different ages. For example, the children's interactive area stimulates children's interest in art through gamification design, while the in-depth explanation function in the "Art and Technology" exhibition area meets the needs of adults for professional knowledge. This differentiated design expands the audience range of contemporary art museum education. The multi-interactive space also plays a crucial role in cultivating visitors' cultural literacy. In this space, visitors are exposed to a rich variety of artistic expressions and relevant cultural information. When facing complex artworks presented through multimedia and their diverse background information, visitors need to use their literacy skills to understand the cultural significance behind the works (Fang, 2020). This process also enhances their cultural literacy. It not only enriches visitors' learning experiences in the art museum but also provides a new perspective and direction for contemporary art museum education in cultivating comprehensive literacy.

Analysis of the impact of multi-interactive spaces on audiences and learners

Based on interview and observation data, this research summarizes the main evaluations of the audience towards the multi-interactive space, including positive feedback: interesting and engaging, with most viewers believing that the interactive design enhances the enjoyment of the visit; significant educational value: viewers generally believe that the multi-interactive space makes the learning process more efficient; emotional connection: interactive content stimulates

viewers' interest and resonance with culture; negative feedback: technical issues, with a few viewers reporting unstable operation of some equipment, affecting the user experience; complex functionality, with some elderly viewers finding the interactive operations difficult to understand, requiring more guidance (Figure 3).

Challenges and limitations

Despite the immense potential exhibited by the multi-interactive space model in contemporary art museums in educational practice, it also faces some pressing issues that need to be addressed. Firstly, technical costs and maintenance pressure: The multi-interactive space demands high standards for hardware and software, resulting in significant daily operation and maintenance costs. According to the technical team of the West Bund Art Museum, the monthly budget for equipment maintenance and upgrades accounts for approximately 15% of the total exhibition cost, posing challenges to the museum's fund management. Furthermore, equipment malfunctions may affect the audience experience, leading to a decline in educational effectiveness. Secondly, difficulties in content design and updating: The multi-interactive space requires continuous content updates to maintain audience freshness. However, due to the collaboration involving multiple fields such as art, technology, and education, the content development process is complex and time-consuming. For example, the content update cycle for the "Future Art" exhibition area is on average six months, which is difficult to meet the expectations of some audiences (Qin, 2015). Additionally, differences in participation depth and audience quality: The educational effectiveness of the multi-interactive space relies on the audience's initiative and learning ability. Some interviewees mentioned that although the design of the interactive space is attractive, some audiences feel confused by slightly complex functions. Children tend to prefer entertainment content and pay less attention to the cultural and historical background of art.

DISCUSSION

Theoretical Significance

Research indicates that multi-interactive spaces of the West Bund Art Museum enrich the application of educational psychology and cultural communication theories.

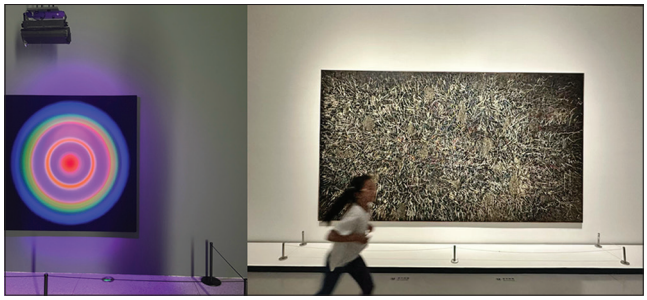

Figure 3. Modern art in the contemporary art museum
Source: Photographed by YitongJiang

In the field, practical cases are provided. The audience's experience with VR technology in the "Art Journey" demonstrates the promotion of situational learning on knowledge construction, expanding the application scope of this theory in contemporary art museum education scenarios. For cultural communication theory, the content displayed in the multi-interactive spaces of the West Bund Art Museum and its role as a cross-cultural exchange platform, such as the "Home Memory" exhibition area, further confirm the key position of cultural proximity and interactivity in cultural communication. This deepens the audience's cognition and understanding of this identification mechanism in the process of cultural communication, up filling new empirical evidence for the application of cross-cultural communication theory in the educational practice of cultural institutions. At the same time, in terms of expanding the theoretical connotation of contemporary art museum education, this study breaks the limitations of traditional museum education research that focuses on management or physical attributes of space, focusing on multi-interactive educational spaces. It constructs new theoretical perspectives from aspects such as technological integration, user orientation, and information integration, improving the theoretical system of contemporary art museum education, prompting the academic community to re-examine the diverse paths and innovative models for realizing the educational functions of contemporary art museums, and providing new theoretical entry points and research frameworks for subsequent research in areas such as multi-interactive space design principles and factors affecting educational outcomes, promoting the continuous development of contemporary art museum education theory.

Actual Impact

This research provides an operational guide for contemporary art museum education practices. In response to technical costs and maintenance pressures, it proposes a multi-interactive specs cooperation model, such as joint development and maintenance of interactive projects between contemporary art museums and technology companies or educational institutions. This model can alleviate financial difficulties, ensure stable equipment operation, and enhance the sustainability of educational effects. Regarding content updates, it is recommended to introduce a flexible management system, which will help art museums efficiently update their exhibition content and maintain audience freshness and attraction. In terms of audience guidance training, operational demonstrations and digital guides can help audiences overcome barriers in using interactive functions, enhance participation depth, and effectively improve the quality and efficiency of contemporary art museum education practices. At the same time, this research also aids in decision-making for contemporary art museum education management (Keshi & Jia, 2016). From a management perspective, the research results provide a reference for contemporary art museum resource allocation. Given the importance and high cost of technical maintenance and content updates, managers can allocate funds and manpower reasonably. When planning development strategies, they should emphasize the

construction of multi-interactive spaces and optimize space design and functional layout based on audience demand differences, such as setting up children's interactive areas and adult professional explanation areas. Policy makers can refer to the findings of this research when promoting the development of the art museum industry, formulating policies that encourage innovation, support cooperation, and ensure sustainable development, thereby promoting the full realization of the educational functions of art museums and enhancing the level of public cultural services.

Comparison with Existing Research

This research finds that the multi-interactive space of the West Bund Art Museum significantly enhances the learning effectiveness of audiences through immersive technology and dynamic displays, which is consistent with the theoretical frameworks of previous research. For instance, studies have indicated that virtual reality technology can enhance learners' engagement and memory retention. However, this research further demonstrates that emotional connection and cultural identity are also important factors that cannot be ignored in the diverse interactive space. By creating scenarios related to the life experiences of the audience, it not only conveys knowledge but also stimulates emotional resonance. Through the analysis of the multi-interactive educational space of the West Bund Art Museum, this research elucidates its conclusions from three aspects: Its interactive design principles, its educational value, its impact on the learning experience of audiences and learners, and how to optimize and address the challenges faced. The multi-interactive space of the West Bund Art Museum demonstrates significant advantages in enhancing educational effectiveness and cultural dissemination through the deep integration of technology and art. Further optimization is still needed in terms of technical maintenance, content updates, and audience guidance. These findings will provide valuable practical experience and theoretical support for the future development of contemporary art museum educational design.

Implications for Educational Practice

Research findings indicate that a diversified interactive space can cater to the needs of various audiences, offering personalized learning path designs. For instance, the interactive area for children employs gamified learning methods to engage younger viewers, while the in-depth explanation feature caters to adult audiences. This suggests that the educational design of contemporary art museums should prioritize the individualized needs of audiences and provide diverse learning paths. The integration of technology and culture, along with interactive design, necessitates not only the support of advanced technology but also places cultural content at its core. The success of a multi-interactive space lies in its integration of technology and culture, presenting complex artistic concepts in an intuitive manner, thereby enhancing the effectiveness of educational dissemination. This research also reveals that, considering the long-term nature of educational objectives, although the multi-interactive space can enhance short-term learning outcomes, further exploration is needed on how to consolidate the long-term learning achievements of audiences. It is recommended that contemporary art museums extend the learning experience of audiences through subsequent activities and online resources.

Sustainable Development and Environmental Protection Considerations

This research also concludes that educational space design should place greater emphasis on the concept of ecological sustainability, advocating green design and energy-saving principles. By selecting environmentally friendly materials and optimizing energy use in spaces, educational space design not only caters to current learning needs but also contributes to future environmental responsibility.

CONCLUSION

Overview

This research focuses on the West Bund Art Museum in Shanghai, China, exploring its multi-interactive educational space in the context of globalization. Through the use of in-depth qualitative research methods, a series of key findings have been discovered. The research shows that the multi-interactive space of the West Bund Art Museum deeply integrates with art by leveraging advanced technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI). This has created an innovative and immersive educational environment, significantly enhancing educational effectiveness and effectively promoting cultural dissemination. In the multi-interactive space, visitors are exposed to various art forms, historical backgrounds, and cultural stories.， they need to interpret, explain, and communicate complex artistic concepts, and this process also cultivates learners' cultural literacy. These findings have had far-reaching and multifaceted impacts on contemporary art museum education. From a practical perspective, they provide a practical blueprint for art museum educational practices, guiding the direction of optimization. By emphasizing the improvement of literacy skills through enhancing cultural literacy, art museums can design more targeted educational programs. From a theoretical perspective, these findings have enriched educational psychology and cultural communication theories, expanded the theoretical framework of art museum education, highlighted the importance of integrating the cultivation of cultural literacy in art museum education, and reshaped the academic community's understanding of the functions and implementation methods of art museum education.

Research Evaluation

Importance

This research is acutely attuned to the core requirements of the transformation in contemporary art museum education. It holds substantial significance for the innovation within contemporary art museum education and the enhancement of cultural communication efficiency. By aligning with the

trajectory of cultural and educational development, it represents a pivotal exploration for contemporary art museums as they strive to adapt to societal and cultural evolutions. This study not only responds to the immediate needs of the art museum education sector but also contributes to the broader discourse on the role of cultural institutions in a changing world, thereby providing a foundation for future educational initiatives and policy-making.

Limitations

The research scope is predominantly centered on the West Bund Art Museum. This singular-sample approach inevitably leads to a lack of data universality. Constrained by time limitations, the long-term educational effectiveness has not been systematically tracked. Additionally, the subjectivity inherent in data analysis may introduce biases, potentially undermining the objectivity and reliability of the research conclusions. These limitations highlight the need for future research to adopt a more comprehensive sampling strategy, incorporate longitudinal study designs, and implement more rigorous data analysis techniques to mitigate the impact of subjectivity.

Scalability

Despite the current limitations in universality, the research findings offer a fundamental framework and reference for similar art museums. Once verified and refined through practical applications in multiple museums, it is anticipated that the scope of application will gradually expand, thereby contributing to the overall transformation of the industry. This scalability potential underscores the value of the research as a starting point for broader-scale initiatives in the field of art museum education. It also emphasizes the importance of collaborative efforts among different art museums to test and adapt these findings to their specific contexts.

Novelty

Breaking through the traditional research perspectives on contemporary art museums, this study takes the lead in conducting an in-depth exploration of the educational value of multi-interactive spaces. By integrating multidisciplinary theories and cutting-edge technological practices, it achieves remarkable innovation in both research perspectives and methods. This novel approach not only enriches the academic literature on art museum education but also provides new avenues for practical implementation. It challenges the existing paradigms and encourages further exploration in the intersection of art, technology, and education.

Advantages

The research methodology employed is characterized by a diverse and comprehensive system. It involves meticulous data collection and in-depth case analysis, effectively integrating theory with practice. This approach enables a profound dissection of the inherent mechanisms of the diverse interactive space. Moreover, it proposes practical and feasible suggestions that can directly contribute to the improvement of educational practices in art museums. The combination of theoretical rigor and practical applicability makes this research a valuable contribution to the field.

Weaknesses

However, several issues, such as the insufficient breadth of data collection, the lack of a sufficient time-dimension in the study, and the subjectivity in data analysis, have circumscribed the depth and accuracy of the research. Consequently, the comprehensiveness and authority of the conclusions are in need of improvement. These weaknesses highlight areas for future research to address, such as expanding the data collection scope, extending the time-frame of the study, and implementing more objective data analysis methods to enhance the overall quality of research in this area.

Making Suggestions

Policy and Management Suggestions

Resource Optimization and Technical Support: Given the high maintenance costs of diversified interactive spaces, art museums can explore multi-party cooperation models, such as collaborating with technology companies or educational institutions to jointly develop and maintain interactive projects. Content Update Mechanism: The content in interactive spaces needs to be updated regularly to maintain its attractiveness. It is recommended to introduce a flexible content management system to enable the team to efficiently adjust the displayed content. Contemporary art museums should actively build cross-disciplinary cooperation platforms, gather resources from all parties, introduce advanced technology management tools and talents, improve the level of technical operation and maintenance, and formulate scientific content update plans and quality control standards. Establish a Long-term Audience Feedback Mechanism: Accurately optimize services, further highlight cultural connotations in content design, enhance emotional connections with audiences, and extend the learning experience from the exhibition site to the daily lives of audiences through the integration of online and offline methods.

Suggestions for further research

Expand research to art museums of different sizes, regions, and cultural backgrounds, conduct comparative analysis of the differences in diverse interactive space practices, carry out long-term tracking research, observe the evolution of audience learning effectiveness, deepen interdisciplinary theoretical integration, and establish a comprehensive theoretical system. Future design of museum space education should focus on optimizing the operability and cost efficiency of interactive technology.

Concluding Remarks

The multi-interactive space of the West Bund Art Museum has opened up a new path for art education and cultural

dissemination, presenting broad application prospects. Through continuous improvement, this model will be able to unleash its educational potential on a larger scale, contributing crucial and unique Chinese wisdom and practical paradigms to the innovative development of global art museum education.

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