

Research on the Cross Border Integration of Traditional Dance and New Media Technology Based on Interactive Dance

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Abstract: With the development of society and art, the artistic environment of traditional dance is quietly changing, and many cultural memories are gradually fading. The number of performing and audience groups is gradually decreasing, causing difficulties in the development and inheritance of traditional dance. New media art is a discipline based on digital technology, which has strong expressive power in the narrative, spatial, and visual aspects of art. Therefore, integrating new media technology into traditional dance creation can change the arrangement form and dissemination path of traditional dance, and will have a positive impact on its development space and prospects. Therefore, in this study, the main focus is on the path and methods of cross-border integration of traditional dance and new media technology.

1. Introduction

In 2003, China began to initiate the protection of intangible cultural heritage, mainly including dances that have been passed down among the people for over a century and are widely recognized by the public, such as lion dance, kirin dance, peacock dance, etc. Traditional dance is formed on the basis of traditional Chinese agricultural civilization and is closely related to the lives of the people. It is an important component of Chinese folk culture. Even today, traditional dance still plays an important role in cultural identity, rallying neighbors, and building a harmonious society. In addition, with the birth of new media technology, it provides a new carrier for the dissemination of traditional dance art. Under these conditions, traditional dance art can gain stronger expression ability and more convenient dissemination channels through multimedia environments and more high-tech stages. The collision between traditional dance creation work and new media technology is bound to bring new development momentum to the development of traditional dance art[1].

2. Explanation of relevant concepts

(1)New media

New media technology is the integration of traditional text and digital materials with digital images, audio, video information, and other materials combining materials and presenting effects in a more

intuitive technical way is a relatively new type of media technology. with the continuous development of mobile new media technology applications, it has also been widely applied in various fields of life the overall development direction of our social culture and technological progress have played a huge and profound driving role. New media information dissemination technology art is a type of traditional public media that has rapidly disappeared since modern newspapers, radio, television, and other forms of social media the mature application of public communication forms with some new concepts is achieved through the integration of information technology and other media anew form of media for channel delivery to mobile clients. Among them, information technology covers a wide range, including information, networks mobile and other technology.

To a certain extent, the extension of new media is compared to paper media and old media, and the interaction and dissemination between people sex is more pronounced. We have higher levels of information integration and sharing permissions, allowing us to express our opinions in real-time on internet platforms extracting information and being able to choose areas of interest according to one's own preferences, while focusing on areas that one does not particularly enjoy it can be easily removed and has a high degree of freedom. At the same time, the emergence of new media has broken the one-on-one transmission of information from a macro perspective, the limitations of information transmission have formed a "many to many" network of information transmission forms.

(2)Traditional dance

Traditional dance is a form with a long history and a strong Chinese atmosphere. The specific explanation for traditional cultural characteristics of dance is that it is based on Chinese national culture and integrates diverse folk dances and palace Chinese folk dances. The history of traditional dance is long and can be traced back to various ancient dynasties. In the performance process of traditional dance, the human body is the expression medium of dance, and its form originated from the production and labor of ancient humans. With the development of society, it gradually combines with music and poetry, thus deducing the exquisite dance form. In modern times, with the development of digital network technology, AI virtual technology, metaverse technology, and real dance media have been combined to construct new forms of dance performance and dance art. This has profound significance for deepening and expanding the connotation of dance and accelerating the dissemination of dance channels.

(3)New Media Dance

The combination of dance, a traditional form of performance, and new media technology is a way to form new media dance. In this process, the cross-border integration of dance with other forms such as visual, online, and film and television has become an inevitable result. The various art categories in the perspective of new media art, through collision with digitization and continuous innovation in content and form with the rapid development of information technology, define art forms relatively. In terms of dance, the concept of new media dance can be defined in two directions: firstly, the practice of combining dance performance with new media technology; The second is the transformation of dance creation forms and dissemination methods through new media technology. The former combines dance with science and technology such as motion capture, virtual imaging, device interaction, and multimedia to create new forms of dance performance; The latter innovates the way dance works are created through information software, spreading dance in the form of "fifth media" through media such as online television, digital movies, and self media clients. Dance has the characteristic of physical beauty, requiring artists to avoid breaking away from the people-oriented principle and solving new problems in new ways and thinking while entering the era of new media dance[2-4].

3. The positive significance of cross-border integration of traditional dance and new media technology

The combination of new media technology and traditional dance art is a new attempt. The integration of the two can more realistically and abstractly express the scenes needed in dance, better express the dance theme, and more appropriately create an atmosphere. The perfect combination of high-level dance aesthetics such as light, electricity, color, beauty, and film and television technology through multimedia technology has become a major trend potential. The shock of multimedia dance lies not only in its artistic creation, but also in the combination of technological means and the imagination and creativity of dancers. After the completion of the project, the expression form of new media dance will continue to be used in dance classroom teaching, utilizing the active thinking and artistic creativity of students to give new blood to the combination of new media and dance, while practicing this dance form through new media. For students who organize rehearsals for new media dance, they can enhance their innovation awareness and ability through organizing rehearsals, boldly innovate the dance plot, and promote this form of dance better, enhancing people's appreciation of dance art.

The combination of new media technology and traditional dance has updated the traditional dance education model. New media dance can be offered in courses with dance majors or new media art in universities, allowing this art form to better play its essence in schools, which is innovation. Universities offer this course for students

By offering this course, students' innovation ability, team collaboration ability, and organizational ability have been greatly improved.

4. Analysis of the current situation of cross-border integration of traditional dance and new media technology under interactive dance

(1) The Characteristics of Interactive Dance

The birth of new media dance has gradually developed from a two-dimensional image dance relying on film and television media to a new form of dance - an interactive dance that integrates photoelectric sound effects and multi-sensory experiences. **The "interactive dance"** which is active on stage, is a cutting-edge branch of the performance field within the scope of "new media dance" today; Usually, a new form of dance variety is generated through the use of media such as LED screens and projection screens, using special effects production, motion capture, virtual reality, sensing devices, body sensing detection, 3D mapping, and other technical means, in the context of human-machine interaction and coordination. Through continuous innovation and improvement, "interactive dance" has found a combination of art and technology, nurturing its unique aesthetic paradigm.

Firstly, interactivity is the most distinctive feature of "interactive dance". Due to the silent symbolic nature of body language, people often have a unidirectional artistic output towards dance performances. However, the penetration of digital images allows dance to fully engage in dialogue and communication with the background, story, context, and audience. Whether it is the seamless interaction between actors and images, or the real-time interaction using sensing devices, their rich interactive effects are the deconstruction, reorganization, and redevelopment of dance vocabulary.

Secondly, virtualization is the realm that dance art pursues to blend emotions and scenery. The artistic conception of traditional dance is often depicted using real-life stage props, from the initial hand-painted background curtains to the recent construction of simulated real-life installations, and the dance stage design is becoming increasingly realistic and shocking. The highlight of new media interactive dance is to transform real-life props into virtual stage spaces and performance worlds, making actors and audiences feel as if they are in the real world.

Finally, diversification is the foundation of its sustainable development. In today's society with diverse cultures, values, and information exchange, traditional art forms have to face diversified attempts and transformations in order to survive and develop better. The marriage between new media and dance is a good direction. While retaining the essence of dance, it appropriately and appropriately integrates emerging technologies, guiding new elements, and new skills, creating new vocabulary, playing new forms, dancing new concepts, and performing new ideas.

(2) The cross-border integration of traditional dance and new media technology

Firstly, new media technology plays a role in assisting narrative transitions, creating an artistic atmosphere, and expanding spatial levels in traditional dance dramas. The new media Chinese dance "Fish on Blue and White Porcelain" at the Yuanxiao (Filled round balls made of glutinous rice-flour for Lantern Festival) Evening Party of BTV in 2015 used a large screen to project a blue and white porcelain plate with a round shape and elegant glaze. The dancers danced in front of the screen like fish in a blue and white porcelain jar. The new media's construction of the scene made the dancing figures vivid.

Secondly, new media plays a role in soothing and blending traditional dance works, and the CCTV Spring Festival Gala folk dance "Love of the Sparrow" is a classic representative of "interactive dance". The exquisite dance packaging and comprehensive three-dimensional use of the large screen create a deep and secluded forest like atmosphere for the dance. The ending scene, combined with the dancer's body movements, completes the finishing touch of the peacock's opening screen, and the seamless human-screen interaction brings the audience an indescribable awe. Another example is the interactive classical dance "Ink and Water Dance Rhyme". As the large screen scroll unfolds, a splash-ink traditional Chinese painting leaps onto the screen. The design of the large screen divided into two horizontally leaves a vertical stage profile for the dancer, but the front view is not affected at all. A water and ink lotus blooms from the bud, and the dancer stands here, as if stepping on the lotus stamens to dance. When the fan in hand is waved, the background water waves seem to ripple layer by layer. The visual production on the screen is in line with the dancer's movements and is appropriate. The dancer is like walking between ink paintings, using their limbs to create each stroke of this masterpiece, achieving a stunning visual enjoyment of the fusion of human and scenery.

Furthermore, new media technology breaks the limitations of traditional dance performances and provides unlimited possibilities for the modern choreography of classical and ethnic dance vocabulary. The dance drama "Qing Yi" uses interactive projection, and many instantaneous techniques and movements of the dance are magnified to perfection, allowing the audience to more clearly appreciate the difficulty and beauty of Chinese dance. At the same time, the jumping time of virtual characters in the air on the screen is infinitely extended or quickly disappears, providing the audience with an unconventional visual experience. The technological development of interactive dance provides convenience for the creative thinking of creators, as well as the possibility for the reconstruction of "time and space speed" in virtual reality[5-6].

5. Analysis of the Problems in the Interaction between New Media Technology and Traditional Dance

At present, there is still a lack of experience in traditional dance creation through new media in China. Firstly, the methods of carrying new media technology in China are relatively diverse, so there is still no corresponding fixed form for the selection of carrying channels for traditional dance creation through new media in practice. Traditional dance creators in China generally imitate advanced foreign experiences when attempting new media dance creations. Domestic research also mostly focuses on introducing practical and theoretical research results from abroad, with only a few involving domestic new media dance creations.

In recent years, some excellent domestic new media dance forms have also emerged. Some traditional dance art universities have also conducted cross-border cooperation in the emergence of new media dance works. According to the Notice on Announcing the Filing and Approval Results of Undergraduate Majors in Ordinary Higher Education Institutions in 2022 released by the Ministry of Education, it can be seen that some universities have opened new art and technology majors or laboratories. In recent years, their research fields mainly involve interaction design, multimedia design, artificial intelligence, and courses such as "Creative Media and Technological Aesthetics" and "Experimental Art and Frontier Technology" have been offered. The stimulation of creativity not only promotes the increasing number of new media dance forms in China, but also has a certain impact on the public's traditional dance aesthetics. The development of traditional dance art in the new media environment is in the public environment, while the development of traditional dance art in modern society has also received a new interpretation. Although there has not yet been a relatively complete creative mechanism for new media dance art, and the corresponding number of new media dance creations is still limited, public awareness and the emergence of similar creative inspiration have indicated that the development and promotion of innovative new media dance in China has become inevitable. The current development of new media dance in China is more important in stimulating our interest in new things, thereby enhancing the driving force for the intersection of traditional dance and technology in the new era.

6. Improvement strategies for interaction between new media technology and traditional dance

Regarding the new challenges faced by traditional dance creation under new media technology, relevant researchers need to have sufficient understanding of the opportunities and challenges that exist in traditional dance creation under the background of new media technology. The traditional dance creation in the new media environment has put forward corresponding requirements for the creative ability of dance artists, the rhythm of choreography, the shaping of stage environment, and the construction of dance backgrounds in the form of new media. This not only brings new features to new media technology and traditional dance creation, but also brings corresponding improvements to the creative form and rehearsal methods of traditional dance.

(1) Deepen understanding of traditional dance creation

Traditional dance creators need to have a deeper understanding of their traditional dance creation work when facing the development trend of new media technology, in order to adapt to the actual needs of new media dance creation. The media environment has led to the emergence of two new forms of traditional dance art: "dance on screen" and "screen on stage", which correspond to the two major dance art forms of video editing using media technology for traditional dance art and the application of new media technology for a new stage. The two not only represent the creative practice types of new media dance nowadays, but also, in a sense, predict the development direction of new media dance in China for a period of time in the future.

(2) Traditional dance creation should align with new media technology

At present, under the influence of new media technology, traditional dance on screen has moved the expression space of dance art from the stage to the internet network with rich multimedia channels. Through the organic combination of computer technology, the expression of traditional dance art has become more diverse, and the use of new media technology has also led to a geometric multiple increase in the expression ability of traditional dance art and its audience. The screenization of the performance space can not only convey the spirit and artistic appeal of traditional dance to more audiences, but also expand the stage space infinitely, allowing the innovation and spatial imagination of traditional dance art in the new era to be recognized by more people. As the main form of new media dance creations in China in recent years, screens on stage can be supported by multimedia technology. Through new media technology, such as computer controlled lighting, LED large screens, stage lifting equipment, camera recording, post production, etc., they can schedule stage props and

optimize the dissemination of traditional dance performances. It can be said that the characteristics of traditional dance creation in new media technology require the influence of multimedia technology on traditional dance forms, which not only enhances the expression of traditional dance art but also indirectly increases the audience of traditional dance art in modern society.

(3) Drawing inspiration from traditional dance creation through new media technology

The creation of dance in traditional dance art mainly relies on the understanding of traditional dance artists on their expression ability in traditional dance art and the actual expression ability of dancers. The organic combination of the two and music constitutes the overall structure of the stage. But at the same time, the structure of the stage is too simple, and the dependence on props is not high, which makes the fault tolerance rate in the stage too low. Once a dancer makes a mistake during the performance or music breaks during playback, the overall expressive ability of traditional dance art will be extremely uncoordinated, and the stage effect will be greatly reduced. However, the development of traditional dance art has encountered corresponding developments in media technology in this era, which has made the thinking mode of modern new media dance creation more personalized and creative. The creation of traditional dance art can also be achieved through information technology. Most traditional dance programs in today's large-scale stage performances have applied new media technology to some extent, such as dancers dancing based on programmed visual effects under predetermined programming projections. When dancers dance, the large screen on stage plays corresponding videos, or traditional dances are filmed and disseminated through media such as television and the internet.

7. Conclusion

The new media path of traditional dance art should integrate traditional dance vocabulary and advanced technological language into a new era of artistic language. Under these conditions, not only can emotional information be fully displayed, but also the plot can be more fully displayed, mobilizing the emotions of viewers, and allowing people to experience the charm of art in virtual situations, enriching reality, affinity, and comprehensiveness. From single to multi-dimensional, traditional dance has experienced vigorous development, giving it new vitality, allowing traditional aesthetic ideas and national aesthetic consciousness to flow in new artistic works. By leveraging the high-quality cultural genes of China and the accumulation of millennium civilization, it carries the artistic value of dance and the spirit of technological innovation, and advances in the wave of technology with a new face.

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