

Research on the Mechanism and Expression Path of Dance Art Creation Empowered by New Media Technology

Wei Qin¹, Changgan Fang^{2,*}

¹Youth League Committee of Wuzhou University, Wuzhou, Guangxi, 543002, China

²Department of Scientific Research, Wuzhou University, Wuzhou, Guangxi, 5430002, China

*Corresponding Author.

Abstract

With the rapid advancement of new media technology, dance art is experiencing unprecedented levels of innovation and transformation. This technology offers diverse expressive avenues for dance creation, injecting fresh vitality and inspiration into the field. This paper delves into how new media technology is expanding the horizons of dance creation, and how the seamless integration and inventive application of this technology can further illuminate the exquisite brilliance of dance art. Simultaneously, it underscores the significance of preserving the authenticity and originality of dance art amidst the influx of new technological influences. By exploring the profound integration of new media and dance, this study aims to unlock the deeper potentialities of dance art and introduce a fresh perspective to the interdisciplinary examination of dance art and media dance. Ultimately, this research endeavors to pave a new avenue of innovation and practice for dance art propelled by new media technology, fostering a deeper integration between dance and new media, and presenting an array of exquisite dance works for the enjoyment of audiences.

Keywords: New Media Technology Application; Dance Creative Techniques; Presentation Formats; Cross-Art Form Integration; Presentation Effects; Fusion Enhancement

1. Introduction

Dance, a long-standing art form, with its unique and rich body language, conveys deep human emotions and thoughts. In the long history of the river, dance and the culture of each era and other art forms blend and evolve, continuously glowing with new vitality. However, with the rapid development of science and technology, the emergence of new media technology has brought unprecedented challenges and opportunities for dance art. New media technology, such as virtual reality, augmented reality, mixed reality and artificial intelligence, with its distinct interaction, immersion and powerful expressive power, greatly expands the space for the creation and expression of dance art. The integration of multimedia and dance has broken the traditional dance performance mode, enriched the connotation of dance itself, realized the breakthrough in the creation consciousness and form of dance art, and provided more possibilities for the creation of dance art[1]. They not only enrich the visual effect and emotional experience of dance works, but also reshape the audience's cognition and acceptance of dance art, so that the audience can feel the deep charm of dance and have a deep interaction with the work. In this context, it is particularly important and urgent to explore the impact of new media technology on the creation and expression of dance art.

2. Deep Integration of New Media Technology and Dance Art New

The unique characteristics of media technology, including its interactive nature, immediate accessibility, diverse range of options, personalized experiences, and global reach, are revolutionizing the creation and expression of

dance art. This innovative platform injects unprecedented vitality into the field by providing an unparalleled avenue for display and development.

Interactivity: New media technology introduces unprecedented levels of interactivity to dance art, significantly enhancing the audience's sense of participation and immersive experience. Through the utilization of virtual reality (VR) technology, audiences can delve into the essence of a dance work and establish a profound emotional connection with the dancers. Statistical data indicates that audiences engaging with dance through VR exhibit nearly 30% higher levels of emotional involvement and immersion compared to traditional audiences. Moreover, social media platforms facilitate real-time interaction between dancers and their audience, enabling dancers to share their creative process and communicate with fans through live streaming sessions and concise videos in order to continuously enhance and refine their artistic works[2].

Enhanced immediacy: The enhanced immediacy of new media enables the rapid and extensive dissemination of dance works. Through the utilization of the Internet and mobile devices, the art of dance can swiftly reach a global audience, significantly amplifying its influence and popularity. Statistical data reveals a consistent annual growth rate exceeding 20% in online viewership of dance performances over the past five years, thereby generating increased business opportunities and garnering heightened attention for this art form.

Diversity: Enhanced creative possibilities within dance art are greatly facilitated by the diversity offered through new media technology. By seamlessly integrating multimedia elements such as text, images, audio, and video, dance works can present visually vibrant effects and convey profound artistic meanings [3]. For instance, projection mapping technology is frequently employed in modern dance to seamlessly merge dancers with their surroundings, resulting in awe-inspiring visual spectacles. This integration not only enriches the appreciation of dance but also amplifies its artistic allure.

Personalization and globalization: The advent of new media technology has facilitated personalization and globalization, presenting novel opportunities for the advancement of dance art. Through intelligent recommendations and personalized settings on new media platforms, relevant dance content can be tailored to align with user interests, thereby catering to the diverse needs of audiences. Simultaneously, these platforms foster cross-cultural communication and interaction between dance works and global audiences, transcending geographical or cultural barriers.

3. The Profound Influence of New Media Technology on the Creation Mechanism of Dance Art

The advent of new media technology has had a profound and extensive impact on the creation of dance art, expanding its spatial and formal possibilities while enhancing efficiency and quality. Moreover, it has enriched the expressive means available to dancers, giving rise to innovative styles.

3.1 The infinite expansion of space and form

The advent of new media technology has revolutionized dance creation by transcending the physical constraints of traditional stages. Through the utilization of virtual reality (VR) and Augmented Reality (AR) technologies, dance creators are able to freely showcase their artistic ingenuity within a virtual three-dimensional realm, seamlessly integrating with the digital environment and delivering an unparalleled immersive experience for spectators. Recent statistics indicate a staggering 50% surge in artists employing VR technology for dance creation over the past five years, underscoring the profound impact of new media technology in fostering an expanded landscape for dance innovation.

At the same time, new media technology has also brought about formal innovation for dance creation. Through the organic integration with video, sound, light and other multimedia, these information data are collected, stored and integrated after processing in a unified processor[4], so that the dance works show unprecedented diversity and richness in the form of expression. In modern dance creation, the ingenious application of holographic projection technology, virtual imaging technology and other aspects[5], makes the dance and the background picture reflect each other, creating a shocking visual artistic effect. This cross-media innovation not only injects new vitality into the dance art, but also enables the audience to enjoy the beauty of dance and enjoy the perfect combination of science and technology and art.

3.2 Significant improvement in efficiency and quality

1. The application of new media technology has significantly enhanced the efficiency of dance creation. The conventional process of dance creation is laborious and time-consuming, whereas new media technology enables rapid simulation and adjustment of dance movements through digital means, thereby considerably reducing the creation cycle. Moreover, advanced animation software and special effects technology facilitate pre-simulation of dance effects on computers, enabling more precise grasp of rhythm and rhyme while optimizing and enhancing the work prior to completion, thus elevating the overall artistic quality [6].

1. New media technologies also play a pivotal role in enhancing the quality of artistic creations. The utilization of high-definition cameras and refined post-production techniques results in more intricate and exquisite visual effects for dance works. Furthermore, advanced sound processing and lighting design methods further augment the capacity for emotional expression and atmosphere creation within these performances. By comprehensively employing these technical means, not only can audiences derive ultimate visual enjoyment, but they can also deeply perceive the profound connotation embedded within the dance works[7].

3.3 Diversification of performance means and styles

The advent of new media technology has provided unprecedented and diverse means of expression for dance creation. The development of new media environment technology has brought about a paradigm shift in the mindset of dance creators, leading to profound changes in their approach to dance creation and the design of audience experience, consequently influencing the presentation of dance works. Traditional dance primarily relies on bodily gestures as a mode of expression[8], whereas new media technology enriches dance works with visually and acoustically enhanced elements through digital processing and the seamless integration of multimedia components. Dance choreographers have begun exploring the integration of multimedia technology to achieve greater artistic impact[9]. For instance, by employing sensor technology and real-time interactive systems, dancers can engage with audiences in real time, creating a more participatory and immersive viewing experience. Furthermore, new media technologies are fostering diversification within dance styles. Skillful amalgamation of different cultural elements and technical approaches enables creators to fashion unique dance styles. Some contemporary works seamlessly blend traditional dance elements with modern technological methods, offering audiences novel aesthetic experiences and sensations. This interdisciplinary innovation not only enhances the expressive forms within the realm of dance art but also propels its evolution and advancement[10].

4. The Profound Influence of New Media Technology on the Expression of Dance Art

The rise and wide application of new media technology has not only brought technical innovation to the art of dance, but also profoundly changed the expression and viewing experience of dance. The perfect combination of new media technology and dance has broken the boundaries of traditional stage, greatly enriched the presentation means and connotation of dance, and made an unprecedented breakthrough in the expression of emotion, the creation of artistic conception and the integration and innovation of dance with other art forms.

4.1 The new way of dance presentation and the reshaping of the relationship between the performance

New media technology has brought a new way of presentation to the art of dance, which has completely changed the concept of traditional stage performance. With the help of advanced technologies such as virtual reality and augmented reality, a new dance art presentation effect is formed, and the audience can immersively integrate into the dance works, so that the audience and dancers can form a positive interaction, and jointly build a participatory and interactive interactive art space[11]. With the help of multimedia technology, for example, the world's first original VR large space immersive dance experience "VR_I" this work, through VR technology, the audience seems to be in the dance, and have intimate interaction with the dancers. This immersive viewing experience greatly enhances the audience's sense of participation and identity, making the relationship between the performance has changed profoundly.

At the same time, new media technology has also promoted the online communication of dance art. Through new media platforms such as online live broadcasting and short videos, dance works have been able to break

through the limitations of time and space and reach a wider audience. Audiences can enjoy wonderful dance performances at any time and anywhere, which provides strong support for the dissemination and promotion of the art of dance[12].

4.2 Enhance the expression of emotion and deepen the creation of artistic conception

As a form of artistic expression, the experience of dance art is intricately linked to varying degrees with light changes, mirror movement, movement presentation, color, special effects, and imagery [13]. With the aid of new media technology, its emotional expression and artistic conception have been significantly enhanced. Through the seamless integration of music, lighting, video, and other multimedia elements, new media technology creates a more immersive atmosphere for dance works that enables audiences to deeply perceive the conveyed emotions and artistic conceptions [14]. Taking the 3D light carving projection modern dance "Cinematique of Light and Shadow" as an exemplar demonstrates how this work skillfully employs projection mapping technology to seamlessly merge dance with background visuals in order to create a captivating world of light and shadow. While appreciating the performance itself, spectators can also profoundly sense the unique artistic conception and emotional ambiance evoked by this work. Furthermore, new media technology allows for precise capture and processing of dance movements while presenting dancers' emotional fluctuations in a more nuanced manner so that audiences can intuitively grasp the rich essence embedded within each choreographic piece.

4.3 Cross-art form integration and innovation promotion

New media technologies have opened up infinite possibilities for the integration and innovation of dance with other art forms. By combining painting, music, drama, and other art forms, dance works exhibit a more diverse and rich artistic charm. For instance, in the televised performance of "Lane in Rain in a Small City" by China Central Television, Jiangnan ink painting transports the audience to an environment characterized by white walls, black tiles, and oil paper umbrellas. As the music begins playing with its melodious silk-and-bamboo soundscape, misty rain is scattered about. With the poem "Lane in Rain," viewers are immersed into a scene that combines multiple art forms[15]. Similarly exemplifying this cross-disciplinary approach is "Only This Green," which blends dance poetry drama with dance painting titled "A Thousand Miles of Rivers and Mountains." Through new media technology processing techniques such as perfectly integrating painting elements with dance movements while achieving harmony between rhythm and melody through music and dance fusion creates a unique artistic style that offers audiences novel aesthetic experiences [16]. Such innovative attempts not only expand boundaries within the realm of dance but also promote mutual reference among different art forms while injecting new vitality into their development.

5. The Problems Faced by New Media Technology Empowering Dance Art

While new media technology brings infinite possibilities and innovations to dance art, it is also accompanied by a series of problems and challenges. These problems and difficulties not only involve the technical level, but also relate to the deep-seated problems of artistic creation.

5.1 Difficulties in the implementation and application of new media technology

The implementation and application of new media technology necessitate advanced hardware equipment, software systems, and proficient technical personnel. For instance, cutting-edge technologies like projection mapping, virtual reality, and augmented reality demand costly equipment and expert technical support, posing a significant challenge for dance groups and artists with limited financial resources. Additionally, the stability and reliability of these technologies are also crucial concerns. Any technical failure during a dance performance can disrupt its smooth progress or even lead to its interruption. Therefore, ensuring the stable operation of new media technology is a pivotal consideration in its application within the realm of dance art.

5.2 The challenges of dance art creation and expression

Although the application of new media technology provides more means of expression for dance art, it also poses new challenges to artists' creative thinking and expression. How to maintain the uniqueness and originality of dance art under the framework of new media technology is a problem that dance creators need to

face. The application of new media technology may also lead to the excessive reliance of dance art on technology, thus ignoring the body language and emotional expression of dance itself. Therefore[17], how to find a balance between technology and dance, so that the two promote each other and complement each other, is a problem that needs to be solved when the application of new media technology in dance art.

6. The Path Exploration of New Media Technology Empowering Dance Art

6.1 The integration and innovation of new media technology in the application of dance art

The integration and innovative application of technology is an important means to promote the creation and expression innovation of dance art. As a core part of the solution strategy, technology is very important to promote the innovation of dance art creation and expression. At the intersection of media and dance fields, the integration and innovative application of technology not only means the introduction of emerging technologies into the dance creation process, but also how to deeply integrate these technologies with the dance art itself to create new art forms and expressions[18].

The key to technology integration lies in comprehending the characteristics and merits of diverse new media technologies, aligning them with the demands of dance art. For instance, motion capture technology enables precise documentation of every movement executed by dancers. By means of data processing and analysis, it facilitates a deeper understanding for choreographers regarding the attributes and principles governing dance movements, thereby optimizing the process of dance choreography and creation. Virtual Reality (VR) and Augmented Reality (AR) technologies offer an immersive viewing experience to spectators, engendering a sense of being present within the scene depicted by the dance work while enhancing realism and three-dimensional artistic effects.

Innovative applications require continuous exploration of new application methods and possibilities on the basis of technology integration. AI algorithms can be used to intelligently analyze and generate dance movements to create dance works with unique styles and rhythms. Or through digital projection technology, dance can be combined with images, light and shadow and other elements to create a creative and imaginative visual feast. These innovative applications can not only enrich the expression form of dance art, but also bring more novel and unique aesthetic experience to the audience. In practice, the integration and innovative application of technology requires the collaboration of dance artists, technicians and experts in related fields to form an interdisciplinary research team. Through regular discussions and exchanges, we can jointly explore the best application of new media technology in dance art creation, and constantly optimize and improve the scheme of technology integration and innovative application. It is also necessary to pay attention to the development trend and frontier dynamics of new technology, and timely introduce the latest technological achievements into dance art creation. For example, with the popularization and application of 5G technology, we can use high-speed networks to realize real-time transmission and remote interaction of dance works, bringing more convenient and rich viewing experience to audiences.

By gaining a profound understanding of the characteristics and advantages inherent in new media technology, integrating it with the specific demands of dance art, and continuously exploring novel application methods and possibilities, we can infuse fresh vitality and ingenuity into the realm of dance as an art form, thereby fostering its broader development within this contemporary era. Concurrently, we can enhance the stability and dependability of technological implementation by optimizing technical strategies while bolstering equipment maintenance and providing robust technical support.

6.2 Maintain the uniqueness and originality of dance art in technical innovation

To maintain the uniqueness and originality of dance art is the essential problem of the integration of multimedia technology and dance art. As a unique art form, the charm of dance art lies in its ability to express emotions, tell stories, and convey culture and values through elements such as body language, rhythm and rhyme[19]. While using new media technology to innovate, it is necessary to deeply understand the essence and essence of dance art, pay attention to maintaining the uniqueness and originality of dance art, avoid losing the essence of art by over-relying on technology, encourage and support dance creators to innovate and explore on the premise that

the use of technology will not weaken the uniqueness of dance art, and inherit and develop traditional dance culture. And strengthen the copyright protection of dance art works.

Preserve the distinctiveness of dance as an art form, which effectively conveys emotions and thoughts through bodily movements. Its uniqueness lies in its direct, vivid, and captivating mode of expression. A profound comprehension of the nature and essence of dance art is imperative. Hence, when incorporating new media technology, it is crucial to consider whether its usage can accentuate this characteristic rather than obscure or diminish it. For instance, while employing projection technology to enhance visual elements in dance compositions, ensuring their seamless coordination and harmonization with the choreography becomes essential; avoiding any interference or conflict between them[20].

Keep the art of dance original. Originality is the vitality of artistic creation, and it is also an important driving force for the continuous development and progress of dance art. Dance creators need to be encouraged and supported to innovate and explore. When using new media technology to create dance art, dance artists should be encouraged to dare to try new technologies, new ways of expression and new creation ideas to create dance works with unique styles and connotations. At the same time, it should also provide a good creation environment and platform for dance artists, so that they can have enough space and resources to give play to their imagination and creativity.

To maintain the uniqueness and originality of dance art, we also need to pay attention to the inheritance and development of traditional dance culture. Traditional dance culture is an important part of the dance art, which contains rich historical, cultural and artistic value. When using new media technology to create dance art, we should pay attention to the mining and application of traditional dance elements, and combine them with modern aesthetic and technical means to create dance works with both traditional charm and modern sense. At the same time, the copyright protection of dance art works should be strengthened. Copyright protection is an important means to safeguard artistic creation achievements and the rights and interests of artists, as well as an important guarantee to promote artistic creation and development. Measures such as strengthening the construction of laws and regulations and raising public awareness of copyright should be taken to ensure that dance art works receive due respect and protection, so as to create a favorable legal environment for the development of dance art.

6.3 Interdisciplinary cooperation should promote the deep integration of new media technology and dance art

Interdisciplinary collaboration and communication are essential components of the implementation process. By establishing diverse academic platforms, organizing interdisciplinary events, facilitating project collaborations, promoting resource sharing and leveraging complementary advantages, as well as establishing long-term mechanisms, we can foster a profound integration between dance art and media. This will further drive the development and innovation of dance art in the era of new media.

Through interdisciplinary communication and collaboration, the optimal integration of new media technology and dance art can be explored, facilitating the harmonious coexistence of technology and art. Such collaborative exchanges not only transcend disciplinary boundaries and foster knowledge sharing but also introduce fresh perspectives and possibilities to the creation and expression of dance art. The essence of interdisciplinary collaboration lies in establishing a diverse academic platform where dance artists, media scholars, technicians, and other professionals from various backgrounds converge to discuss the application and advancement of new media technology in dance art. This platform may take the form of a physical research institution or a virtual online community; however, its key objective is to provide an open-minded, inclusive, and innovative environment for communication.

The specific forms of interdisciplinary cooperation and communication can be varied. Interdisciplinary seminars or workshops can be held regularly, and experts and scholars in different fields can be invited to give keynote speeches, case sharing and interactive discussions on the application of new media technology in dance art, so as to promote academic exchanges, stimulate innovative thinking, and provide new inspiration and ideas for dance art creation. At the same time, in terms of project cooperation, dance creators can jointly apply for scientific research projects with media scholars and technical personnel, and conduct in-depth research on the application

of new media technology in dance art. Through joint research, team members with different disciplinary backgrounds can learn from and inspire each other, and jointly promote the development of dance art in the new media era.

In the process of cooperation and communication, we should also pay attention to resource sharing and complementary advantages. Dance creators can use the professional knowledge and technical support of media scholars and technicians to better disseminate and promote dance works through new media platforms. And media scholars and technicians can draw inspiration from the art of dance and apply new media technology to a wider range of fields.

In addition, interdisciplinary cooperation and communication also need to focus on establishing a long-term mechanism. This includes establishing stable cooperative relations, making detailed cooperation plans and establishing a mechanism for sharing results. Only a long-term mechanism can ensure the continuity and effectiveness of interdisciplinary cooperation and exchanges, and provide strong support for the common development of dance art and media fields.

7. Conclusion

The integration of new media technology into the field of dance art has infused a fresh vitality into the creation and expression of dance, enabling it to transcend traditional forms and present a more vibrant perspective. Interdisciplinary collaboration and exchange also offer an expansive platform for the development of dance art, fostering knowledge sharing and resource integration across diverse fields. To further explore the profound integration of new media technology and dance art, particularly in relation to cutting-edge technologies like virtual reality and augmented reality, greater attention should be devoted to ensuring their internal compatibility with and innovation within the realm of dance art. Additionally, preserving the distinctiveness and originality of dance art is crucial, as is strengthening efforts in unearthing and preserving traditional dance culture while encouraging dancers' innovative spirit and individual expression. It is anticipated that underpinned by advancements in new media technology, dance art will embrace broader developmental prospects along with enhanced artistic expressions.

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