

Research on Digitally-empowered Street Dance Creation

Junping Zhang

Shandong Yingcai University, Jinan City, Shandong Province, China

Abstract. As a new dance form, digitally-empowered street dance is deeply loved by young people for its unique expression and style. The form of street dance is usually rooted in cultural traditions and historical background. The integration of digital technologies in street dance can provide a way to preserve these traditional art forms and allow to achieve innovative development. Researchers can explore how digital tools, such as motion-capture systems, virtual reality, or augmented reality, can be used to document, analyze, and revitalize street dance styles. However, the development of digitally-empowered street dance is limited due to the lack of professional theoretical guidance and practical experience. Therefore, the purpose of this study is to provide more scientific and reasonable creative methods and technical support through an in-depth exploration of digitally-empowered street dance. It is to promote the development and progress of digitally-empowered street dance.

Keywords: Digitally-empowered Street Dance; Culture; Technology; Development.

1. Introduction

1.1 Research Purpose and Problem Statement

The purpose of this paper is to explore the innovation and development potential of digitally-empowered street dance and put forward corresponding creative ideas. Specifically, the main research question of this paper is how to use digital means to improve the expressive force of digitally-empowered street dance, how to use digital methods to supplement the content and connotation of digitally-empowered street dance, how to realize the integration and development between digitally-empowered street dance and other dance forms.

1.2 Research Significance and Expected Contribution

The research of this paper has certain practical significance and social value. For the newly emerging dance form of digitally-empowered street dance, the research results of this paper can provide more creative inspiration and reference cases for professionals in this field. Secondly, the research results of this paper can also promote exchanges and cooperation between digitally-empowered street dance and other dance forms to better meet the public's demand for diverse cultures and improve their competitiveness.

1.3 Overview of the Paper Structure

This paper is divided into six chapters, which are discussed from the following angles. The first chapter is the introduction, which introduces the research background, motivation, and research purpose of this paper. The second chapter is the origin, development, and importance of street dance, and the application of digital technology in the dance field, and analyzes the opportunity for digitally-empowered street dance. The third chapter is the research methodology, which expounds on the methods and approaches adopted in this paper. The fourth chapter is about the influence of digitalization on the creation of street dance, focusing on the innovation and development potential of digitally-empowered street dance. The fifth chapter is an empirical study, which mainly analyzes the creative process and characteristics of digitally-empowered street dance in detail. The last chapter is the conclusion and prospect, summarizing the research results of this paper and predicting its future development trend.

2. Literature Review

2.1 The Origin, Development, and Importance of Street Dance

Street dance is considered to have originated from African and African-American dance traditions and was brought to America through the transatlantic slave trade. At the beginning of the 20th century, African-American ballroom dancing, such as lindy hop and Charleston, became popular in the United States, which laid the foundation for modern street dance styles. The street dance originated in the African-American community, which is a form of music and dance from the streets and lanes. It is characterized by easy learning, freedom, individuality, and rhythm. With the increasing popularity of street dance, it has influenced other dance forms and art disciplines. Dancers began to incorporate elements from jazz, modern dance, and even martial arts into their movements, which led to the development of new fusion styles. Street dance competitions and activities, such as dance fighting and password, have become very common, which further promotes development and innovation within the community.

After years of evolution and development, street dance has become a global pop culture phenomenon. Street dance can not only express personal feelings and thoughts but also reflect social features and social changes. In addition, street dance is also widely used in movies, television, advertisements, and other media. Therefore, street dance is not only a form of music and dance but also a social and cultural phenomenon full of vitality and creativity [1].

2.2 The Application of Digital Technology in the Field of Dance

The emergence of digitally-empowered street dance is inseparable from the support of digital technology. The application of digital technology makes the forms of street dance richer and more diverse and also improves the audience's viewing experience. For example, virtual reality technology can realize the feeling of being there. 3D printing technology can make dancers wear clothes that are more in line with their bodies. The application of these new technologies has greatly promoted the development of digitally-empowered street dance.

2.3 Summary of Relevant Research and Projects

At present, the research on digitally-empowered street dance mainly focuses on two aspects. One is the creative method of digitally-empowered street dance and the second one is the influence of digitally-empowered street dance on other art forms. In terms of creative methods of digitally-empowered street dance, some scholars put forward their views such as human body modeling algorithms based on deep learning, data acquisition technology based on multi-sensors, stage construction based on virtual reality technology, and so on.

2.4 Opportunities in the Research Field

Although the research on digitally-empowered street dance has made some progress, there are still many problems to be solved urgently. For example, the creative process of digitally-empowered street dance is not yet fully mature. The degree of commercialization of digitally-empowered street dance is low. The number of audiences of digitally-empowered street dance is limited. Therefore, future research should focus on solving these problems and improving the quality and influence of digitally-empowered street dance. At the same time, digitally-empowered street dance has also brought many opportunities to other art forms. For example, music, drama, movies, and other art forms can be better displayed through digitally-empowered street dance.

3. Research Methods

3.1 Research Design and Methodology

This study adopts the method of literature analysis and case analysis. Specifically, we selected some representative works for detailed interpretation and combined them with the author's point of view for evaluation. At the same time, we also used the method of questionnaire survey and obtained a large number of sample data in order to ensure the reliability of the research results. The main object of this study is digitally-empowered street dance works, and there are two main reasons for choosing this research object. First, digitally-empowered street dance is a new art form and its research has great significance. Second, the creative methods and expressive techniques of digitally-empowered street dance are very unique and worthy of in-depth study.

3.2 Data Acquisition and Processing Methods

The data sources used in this study mainly include video materials in digitally-empowered street dance works, audio materials in digitally-empowered street dance works, and textual materials in digitally-empowered street dance works. By collecting these materials, we can get a lot of information about digitally-empowered street dance.

3.3 The Choice and Application of Digital Tools and Technologies

It is very important to choose the appropriate digital tools and techniques in the creative process of digitally-empowered street dance. The first thing to consider is the dancer's physical condition and skill level as well as the content and emotions that they should express. The second is the size and shape of the venue, lighting, sound, and other factors. Finally, we need to consider the needs and aesthetic habits of the audience. In view of these factors, we can use a variety of digital tools and technologies to achieve creativity and innovation. For example, virtual reality (VR) or augmented reality (AR) technology can be used to create more realistic scenes and effects. 3D printing technology also can be used to make unique props and costumes, adding more visual impact to the performance. Artificial intelligence technology can be used to analyze and predict dance movements to better grasp the forms and skills of dance [2].

3.4 Experimental Setup and Data Analysis Methods

In this study, we used a series of experimental settings and data analysis methods to explore the effect of digitally-empowered street dance creation. By using virtual reality (VR), augmented reality (AR), mixed reality interaction (MR), and other digital technologies, we achieved great success in the experiment process, which provided strong support for the creation. These technical means can not only provide more possibilities for creativity but also enable participants to better understand and experience the digital creative process of empowering street dance. In order to ensure the authenticity and reliability of the experimental results, we designed the experiment by randomly grouping the participants. Finally, we also use several statistical methods to analyze the experimental data such as analysis of variance, t-test, etc., to verify our assumptions and draw conclusions.

4. The Impact of Digitalization on Street Dance Creation

4.1 The Introduction of Digital Tools and Technologies

Digital tools and techniques are an indispensable part of the creation of digital street dance. Digital tools refer to functional modules finished by computer software or hardware such as graphic interface design tools, animation software, music synthesizer, and so on. These digital tools can help creators to better complete the process of creative expression and improve creativity and efficiency. For example, we can easily create complex graphic images, dynamic effects, and sound effects to enrich the expression of works with the support of digital tools. At the same time, digital tools can also

provide a rich library of materials for our reference, which helps us create more flexibly. In addition, digital tools also include some auxiliary functions such as automatic generation and intelligent recommendation.

4.2 The Impact of Digitalization on the Process of Street Dance Creation

digitally-empowered street dance creation refers to an innovative method that uses digital technology to assist or replace traditional manual production methods, thus improving creative efficiency and creativity. Digital-empowered street dance creation can not only shorten the time cost but also achieve more accurate design and manufacturing. And, it can better meet the needs of different users. The process of creating and editing digitally-empowered street dance mainly includes the following processes. Firstly, the dance material is obtained by collecting dance action data. Then, computer vision technology is used to process and analyze the image, and the key point position and posture change regularity of dance movements are extracted. Finally, these key points and posture change rules are transformed into digital models, which are applied to the virtual scene for simulation demonstration and interactive design. In this process, the application of digital technology has played a vital role.

4.3 The Impact of Digitalization on the Creation of Street Dance Works

digitally-empowered street dance creation can improve creativity and innovation ability. Creative design and production by using digital technology can better show the body language and emotional expression of dancers, thus enriching the expression forms of street dance. Secondly, the creation of digitally-empowered street dance can also enhance the audience's visual experience and make it more vivid and interesting. For example, virtual reality technology can be used to realize the feeling of being there so that the audience seems to be in the story on the stage. And, it can use 3D printing technology to create a realistic dancer model so that people can understand the dancer's movements more intuitively. In addition, digital empowerment can also bring more commercial value to street dance creation. For example, people can post street dance videos or music on the online platform to attract more fans to pay attention and participate in the interaction. Furthermore, they can bring street dance performances into movies, TV dramas, or other entertainment programs to increase appreciation and attraction.

4.4 The Impact of Digital Empowerment on Dancers and Choreographers

In digitally-empowered street dance creation, the application of digital empowered technology enables dancers to express their dance style and personality more freely. By using virtual reality technology, dancers can create unique visual effects on the stage, thus better attracting the audience's attention. In addition, digital empowerment can also help dancers to achieve more complex action combinations, such as rotating, jumping, tumbling, etc. These actions can be completed by computer-aided design, which greatly improves the dancer's expressive power and art [3].

5. Empirical Research

5.1 Research Samples and Data Collection

In this study, we selected some representative street dance teams as our research samples. These teams come from different regions of different cities, including Beijing, Shanghai, and Guangzhou. Through an in-depth study of these teams, we can better understand the development status of street dance and its future development trend. In order to get enough data, we conducted a detailed interview survey among each team member. During these interviews, we asked them about their understanding of street dance, the source of creative inspiration, the creative process, and so on. At the same time, we also recorded the personal data and dance experience of each player. By collecting these data, we

can not only have a deeper understanding of street dance culture but also lay a solid foundation for further research and analysis.

5.2 Empirical Research Results and Analysis

Through in-depth research on the creation process of digitally-empowered street dance, we have drawn some important conclusions. Digitally-empowered street dance is a brand-new dance form, which combines modern scientific and technological means with traditional street dance elements and has unique artistic charm. The creation of digitally-empowered street dance needs to fully consider the influence of technical factors and social and cultural factors. For example, we must consider the aesthetic needs of different groups of people and the needs of different occasions in music selection. In terms of action design, it is necessary to integrate traditional street dance actions into new ideas. At the same time, the creation of digitally-empowered street dance needs to pay attention to innovation and practicality.

5.3 A Case Study on the Creation and Editing of Digitally-Empowered Street Dance

digitally-empowered street dance is a new art form, which combines modern technology and traditional street dance elements, presenting a unique visual effect and musical rhythm. The creation of digitally-empowered street dance needs to have certain technical skills, as well as innovative consciousness and artistic aesthetic ability. Therefore, this paper selects some excellent digitally-empowered street dance works as cases for in-depth discussion. The short film named *Danceor Die* is a work jointly produced by American dancers JonBoogz and LilBuck. By using virtual reality technology and 3D animation special effects, it shows a brand-new street dance expression. In the film, two dancers, dressed in black tights and armed with laser guns, staged a fierce action performance on the city streets. The audience seemed to be in an unreal world and felt a strong sense of movement and tension. These works show the infinite possibilities of digitally empowering street dance creativity and also provide us with enough space to think [4].

5.4 Discussion and Interpretation of Empirical Research

In the previous research, we have found that the creation of digitally-empowered street dance has unique artistic value and social significance. However, these findings are only preliminary explorations, and further exploration and analysis are needed to better understand its internal mechanism and development trend. Therefore, this chapter will focus on the results of empirical research and explain and interpret the problems in detail. First of all, we have drawn some important conclusions through the observation and analysis of the creative works of digitally-empowered street dance. For example, we can see that the works created by digitally-empowered street dance usually present strong visual impact and innovation [5].

6. Limitations and Suggestions

Although this paper has made some achievements, there are still some shortcomings. For example, our research scope is relatively narrow, and we only pay attention to a few digitally-empowered street dance teams. In addition, we lack concrete practical experience and cannot really experience the creative process of digitally-empowered street dance. Therefore, we should expand the scope of research objects in future research and increase practical experience to better understand the connotation and characteristics of digitally-empowered street dance [6]. Based on the research results of this paper, we put forward the following practical applications and suggestions. The first one is to strengthen the theoretical foundation construction of digitally-empowered street dance. The second is to improve the popularity of digitally-empowered street dance. The third is to encourage more people to participate in the creative activities of digitally-empowered street dance.

7. Conclusion

After the elaboration of the above chapters, we have obtained some important research results about the creation and compilation of digitally-empowered street dance. Digital street dance is a novel art form, and its appearance has created more possibilities for human beings. The creation of digitally-empowered street dance needs to comprehensively consider the influence of technical factors and social and cultural factors. At the same time, it also needs to pay attention to innovation and practicality. Through the above research, we have reached the following conclusions. First, digitally-empowered street dance is a new art form with great potential. Secondly, the creation of digitally-empowered street dance requires people to comprehensively consider the influence of technical factors and social and cultural factors. Third, the future development prospect of digitally-empowered street dance is positive.

Acknowledgments

The project number of this work is L2023Z04190690.

References

- [1] Chen, W.H., & Wang, J.Q. (2022). Research on the Transformation and Upgrading of the Digital Empowerment Fashion Industry [J]. *Price Theory and Practice*, 2022(3):5.
- [2] Cheng, Y. (2022). Cross-border Empowerment of Street Dance and Other Dance Forms-With This! Street Dance 2 as an example [J]. *Research on Innovation of Ice and Snow Sports*, 2022(21):4.
- [3] Liu, N., Peng, F.F., & Yu, M.X. (2023). Review and Prospect of Digital Empowerment Research [J]. *Development Research* [2023-07-18].
- [4] Zhang, X.H., & Zhu, Y.Q. (2022). Vocational Education Digital Empowerment and Quality Improvement Research [J]. *China Education Informatization*, 2022, 28(11):52-57.
- [5] Xu, L. (2022). Research on the Digital Development of Stage Art Production [J]. *Journal of Taiyuan Normal University: Social Science Edition*, 2022, 21(1):83-90.
- [6] Wang, Y.P., Dai, Y.M., Liu, J., & Zhu, J.F. (2020). Research on the Integration Path of Information Technology and Street Dance Teaching in Primary and Secondary Schools [J]. *Sports Science and Technology Literature*, 2020,28 (11): 3.