Research on the Visualization of Music Stage Performance Based on the Context of Computer Digital Media

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Abstract. In the context of digital media, the stage effect can be displayed better. It mainly uses the combination of new media and music stage to make the audience more visual. This paper mainly analyzes and studies the combination of data media technology and music stage.

Keywords: New Media, Visualization, Digital Technology;, Musical Stage Performance

1. Introduction
With the rapid development of information networks, digital media technology has gradually been widely used in many fields, such as telecommunications operations, broadcasting media, film and television, and financial systems. It brings great convenience to people's lives. Digital media technology not only promotes the spread of information and culture in our country, but also accelerates the transformation and development of social and economic system. It has very broad prospects and developmental space.

2. New media and visualization

2.1. Visualization
The formation of visualization is inseparable from the production of visual culture. Nikolai Mirzoff defined visual culture from the perspective of visual cultural expressions as “visual culture refers to the fact that culture has broken away from language-centric rationalism, and increasingly turned to image-centric, especially image-centric. Perceptualism form. Visualization not only marks the transformation and formation of a cultural form, but also means a transformation of human thinking paradigm.” However, visualization is not a term that has only appeared in modern times. The pursuit of vision has existed since ancient times. Later, Benjamin also elaborated on the development of art from simulacra to simulacra and then to pure vision in "Art Works in the Age of Mechanical Reproduction" process. Since its development, visualization has become an indispensable part of contemporary culture [1].

2.2. New media
New media mainly include images, text, audio, video and other forms. Among them, the digitization of forms of communication and dissemination of content are the characteristics of new media. In the process of digitization, the collection, access, processing and distribution of information meet the requirements of new media. The production process of the media. The development of new media has also brought great influence to other industries, and even changed the development model of some traditional industries [2].

2.3. The relationship between new media and visualization
Digital new media represented by digital television, internet and mobile media have brought great impact to contemporary art and contemporary visual culture. This is the "world of images" predicted by the famous German thinker Heidegger. The relationship between new media and visualization is mutual.

The intervention of digital technology has a particularly obvious driving effect on the development of both, and new media has brought a larger platform and space for visualization, and the continuous development of visualization has also Brings a broader development prospect for new media. Therefore, the two are based on digital technology, promote each other and complement each other.

2.4. Visualization of music stage performance
The development of digital media technology and the application of new media have made many impossible possible, even in music stage performances. The intervention of digital technology perfectly combines the sound, light and electricity elements in the music performance elements, and also allows the audience's auditory and visual experience to be integrated. However, digital technology brings not only opportunities but also challenges [3]. In the face of the continuous development and intervention of technology, is the visualization of music stage performance moving towards a better development, or is it gradually disappearing under the cover of technology Controversial subject.

3. Advantages of visualization of music stage performance
Using digital media technology to visualize music stage performances has three main advantages: multi-dimensional experience methods, virtual experience scenarios, and diversified performance methods, as shown in Figure 1.

![Figure 1. The advantages of digital media visualization](image-url)

3.1. Multidimensional experience
The intervention of digital media technology has transformed the form of stage performance from single-dimensional to multi-dimensional, which is different from traditional stage performances-performers perform on stage and audiences sit down to enjoy. When performing, traditional music stage performances are mainly based on singing, supplemented by other performance forms such as dance or projected visual screens. In the same space, except for the atmosphere and interactive factors, the two are relatively independent, while digital technology The stage performance after the intervention makes the traditional music performance enter the multidimensional space from the plane. Just like a movie, although it is still played by projection, the carrier is always the same, but
the technical difference between 2D and 3D makes the viewing experience more three-dimensional and more shocking, and this is the core of visualization [4]. For example, in 2012, Sa Dingding performed "All Things Live" on the Spring Festival Gala. With ethereal music and lines, digital technology turned the stage into a jungle, making the audience feel as if they were actually in the jungle. Such a scene makes the music performance more three-dimensional and concrete, and it can also make the audience more involved in the performance.

3.2. Virtualization of experience situation
In addition to the substitution of multi-dimensional scenes mentioned above, the virtualization of scenes has also become an important symbol of music stage performance. The intervention of digital technology makes impossible scenarios exist in reality, or interprets virtual scenarios in a surreal manner. It breaks away from the assistance of other performance forms or flat video, and uses virtual imaging technology, such as holographic projection, to create a virtual experience for the audience. There are two advantages to this. First, remove the lyrics, it can use the lack of technology in situations that cannot be achieved in reality. Secondly, it can make the emotional experience more inclined to three-dimensional, so that the audience can better engage and understand. For example, when Jennifer Lopez performed "Feel the light" on American Idol’s musical stage, the ordinary white skirt was integrated with the performance stage during the performance [5]. The entire stage was shaped into a starry sky, the universe, etc. and constantly changed, bringing the atmosphere of the scene Push to the climax, placing the audience and performers themselves in the entire galaxy, matching the theme of the music.

3.3. Variety of performance methods
Traditional music performance forms are relatively single. Unlike other performance forms, the performance forms and auxiliary tools of music performance are simple and cannot be reshaped. For example, sketches can enhance the viewing effect by shaping props, performance rhythm, and interaction between performers and audiences. The main body of music is music from the beginning to the end. It cannot adjust the rhythm of the music during the performance, because it is fixed, and the preparation of the props only shapes the scene, and cannot change the performance itself. However, the intervention of digital technology has also changed the way of music performance. For example, Li Yuchun's "Shu Embroidery" performed in the 2015 Spring Festival Gala used holographic projection technology to perfectly interpret the clone, creating an extremely shocking stage effect. The technology of holographic projection is actually not a new topic [6]. It has already attracted widespread attention in the performance of "Hatsune”, and because of the limitations of holographic technology, its application fields are gradually developing. But it is an indisputable fact that it has begun to change the form of music performance.

4. Disadvantages of digital media music stage performance
The intervention of digital media has injected new power into music stage performances. However, due to the lack of technology and incomplete coordination with traditional performance methods, it has also brought many problems to music stage performances. Using digital media technology to visualize music stage performances has three main disadvantages: the limitations of audience perception, the unclear performance of the subject, and the coordination between technology and art needs to be strengthened, as shown in Figure 2.

![Figure 2](image-url)
4.1. Limitations of audience perception

Digital technology is still developing today, but the current technology is not perfect. For example, the “Life of All Things” and “Feel the Light” mentioned above still have insufficient look and feel. The “Life of All Things” mainly relies on the LED part. Virtual broadcast technology, so the audience on the spot cannot see the complete picture, and "feel the light" is the same. It takes the performance stage as the background, and the complete picture can only be presented through broadcast or video, which limits it to a certain extent. The visual experience of the audience. Of course, the intervention of holographic projection technology has changed this situation. On-site audiences can also see digital performances, such as "Shu Embroidery". However, the imperfection of holographic projection technology makes the performance effect still incomparable with virtual broadcast technology, so as to achieve the best visual effect [7].

4.2. Unknown performer

The intervention of digital technology has indeed made the visualization of musical stage performances more perfect, but the intervention of this technology also poses new challenges to musical stage performances. Performers or planners have devoted more attention to the field of visualization due to technical reasons, while ignoring the attention to the musical stage performance itself. While the visualization of musical stage performance is more perfect, it also inevitably reduces the importance of musical performance itself. Everyone pays more attention to visual effects, rather than the singer's own singing skills or performance effects. Just like movies, more and more technical means have transformed the theme of movies from the content center to the visual center. However, whether it is special effects or performance visualization, it is only a tool to assist performance rather than replace it. Therefore, while delving into digital technology, we should also reflect more on the meaning of performance itself.

4.3. The coordination between technology and art needs to be strengthened

In addition to the issue of the subject of the performance mentioned above, the issue of coordination between technology and art is equally important. The best way for digital technology to intervene is not just to better present the performance, but to become a part of the performance. For example, in "Shu Embroidery", the holographic projection technology is not just the background, but as part of the performance. However, at present, there is only one form of music performance that can integrate technology into art. There has not been a big breakthrough in the past few years, but this is not the only way that technology and art can coordinate. We should also explore more styles of music. The visual form of performance [8].

5. Improvement plan for digital music stage performance

5.1. Interactive stage effects

In order for the audience to better integrate into the performance and feel the atmosphere of the performance, the best way is the interaction between the performer and the audience. The traditional way of interaction is artificial interaction between the performer and the audience, such as applauding, cheering, singing in unison, etc. The intervention of digital technology can not only improve the performance, but also should focus on cultivating interactivity. For example, when the performer and the audience are placed in the same scene through digital technology, virtual props can become interactive devices to achieve interactive stage effects.

5.2. Pursue innovative stage effects

While digital technology is involved in stage performances, it should be better to pursue innovation from the perspective of auxiliary tools, rather than just focusing on the perfection of technology, that is, the visual effect of the stage. Because digital technology, as an auxiliary tool for stage performance, cannot be the main body of the performance, it is meaningless to pursue the development of
technology excessively and ignore the performance itself. At the same time, the trend toward single performance is a common problem in music stage performance [9]. Unlike other performances, music stage performance has its limitations, but this cannot be a reason to give up innovation. As digital technology is a strong support, more research should be put into performance.

5.3. Digital technology participates in art performances
The real manifestation of the visualization of music stage performance should not only be whether the stage effect is shocking or whether the digital technology is perfect, but that the visual stage performance has its real connotation. Just like movies, special effects are not just special effects. The role of special effects is to enable the audience to better understand the plot. Although meaningless special effects will make the audience enjoyable for a while, they will not become an immortal masterpiece. Digital technology has the same meaning for stage performances. Just matching the appropriate background and elements to the music cannot make the whole performance sublime. It can only become a gimmick to attract the audience's attention. The digital technology should be reasonable and participate without any trace. During the performance, make them integrated, so that the audience feels that this part of the performance cannot be completed without digital technology [10].

6. Conclusion
In general, digital media technology has taken a big step forward in the development of visualization. Of course, the development of visualization also promotes the development of digital media. In this process of promoting development, we need to balance the relationship between technology and art, so that they can develop in harmony.

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