

The Role of Stage Lighting and Sound in Enhancing the Expressive Power of Stage Art from the Perspective of New Media

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Abstract

In order to study the impacts of applying the new media technology to the design of stage lighting and sound on the audio-visual effects and expressive power of the stage art, the statistical analysis is firstly taken on the development of new media technology in recent years by referring to the data in this study. According to the predicated data, the market share of the new media in China is 12.7% in 2021, ranking second in the world, indicating that the new media technology in China has great market potential. Secondly, the light and sound integrated into the new media used for the space creativity, content richness, and emotional expression of the stage play are analyzed through two examples of the Canadian stage play “Anime Master Norman” and the China’s famous Buddhist stage play “The Light of Colored Glaze”. Finally, it clarifies that the new media art has an important influence on the performance of stage plays. The combination of new media technology and stage lighting and sound provides a better rendering effect, enhances a lot of charm to the stage play, and brings the audience have a better audiovisual experience.

Keywords

New media; stage lighting; stage sound; expressive power of stage art.

1. Introduction

The expressive power of stage art is to use the stage performances to bring the feel of beauty to audience, but it is difficult to attract the audience’s attention if the performance on the stage does not have tension or expression power, which will not achieve the expected viewing effect [1]. Therefore, the stage expressive power is an important part for the actors, and it is an art full of vitality. In the stage expression, lighting and sound occupy a very important position and exert a vital role in the realization of stage expressive power and tension [2].

A few decades ago, the new media technology was firstly applied to the stage in some foreign countries. With the frequent exchange of art in China and overseas, more and more domestic artists are exploring this field. This is also the inevitable results for joint development of art and scientific technology in the era of science and technology with new media as the mainstream [3]. Compared with the traditional stage plays, new media dramas combine the new media with dramas to make the stage more expressive. The appeal is very strong both in terms of stage lighting, sound effects, design, and layout, and in the rendering of stage atmosphere, which injects new elements into the drama art. Lighting and sound play an important role in the rendering of stage effects. The application of new media technology to stage lighting and sound not only increases the depth effect of the stage space, but also increases the layering of stage sounds [4]. For example, Broadway’s famous drama “Cat” incorporates various new media technologies in sound and lighting to achieve the mysterious and fashionable dance effect, so that it becomes a classic.

It mainly analyzes the lighting and sound in the Canadian stage play “Anime Master Norman” and Chinas famous Buddhist stage play “The Light of Colored Glaze” to explore the impacts of

stage lighting and sound on the expressive power of stage art from the perspective of new media and provide a reference for improving the audiovisual effect of the stage.

2. Methods

The user scale of the new media industry in China from 2011 to 2019 is collected through the internet to calculate the growth rate, and the bar and line combination chart of this scale and growth rate is made by using the Execl software. The market share of the new media all over the world in 2021 is predicated, and the funnel chart of the market share is made by using the Execl software.

Relevant information on the Canadian stage play “Anime Master Norman” and China’s famous Buddhist stage play “The Light of Colored Glaze” are collected, especially the information related to the application of new media technology in stage lighting and sound. The impacts of the new media lighting and sound on the expressive power of stage art are analyzed from the primary and secondary, bright and dark, true false, virtual and real aspects created by the stage lighting, the development of sound effects, and their roles in rendering of the atmosphere, promotion of the plot, and the grasp of rhythm.

By studying the application of new media technology in lighting and sound of the stage play, the importance of new media application in the stage lighting and sound in the art expression of stage play from both single aspect and combined aspects.

3. Results and Discussion

3.1. User Scale of New Media in China from in 2011-2019

In recent years, the market scale of China’s new media industry has maintained a rapid growth rate. According to the statistics of the Forecast and Investment Planning Analysis Report of China’s New Media Industry released by the Prospective Industry Research Institute, the market size of China’s new media industry in 2011 has reached 226.81 billion Yuan, maintains a growth rate of higher than 15% every year, and breaks through 1.2 trillion Yuan in 2019 (as shown in Figure 1). In the future, with the introduction of industry-related policies and the maturity and popularization of related technologies such as 5G, the new media industry in China will usher in rapid development, and the future market prospects are considerable.

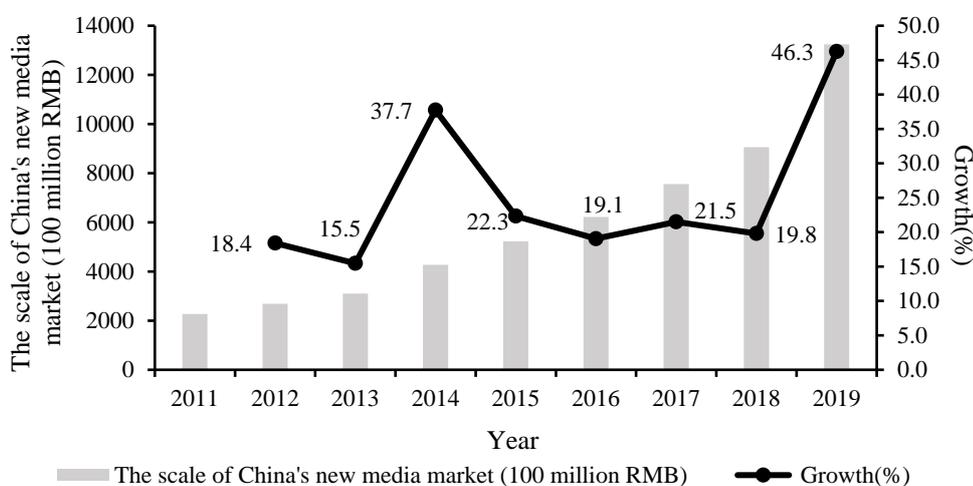


Figure 1. User scale and growth rate of China’s new media industry in 2011-2019

Internationally, according to the forecast data of the Korea Creative Content Agency (KCCA), the size of the media content market will reach US\$2,561 billion in 2021, with the US market occupying the top 1 with 36.4%, followed by China with 12.7%, Japan with 7.5%, UK with 4.4 %, Germany with 4.3%, France with 3%, and South Korea with 2.5% (as given in Figure 2). Based on the “New Media Blue Book: China’s New Media Development Report No. 10 (2019)” released by the Institute of Journalism and Communication of the Chinese Academy of Social Sciences (CASS) on June 25, 2019, the growth rate of China’s new media industry decreased slightly in 2018, but the emerging markets such as short video, big data, artificial intelligence, 5G, and blockchain were developing rapidly. Such emerging technology is applied to high-tech equipment such as high-end equipment, new energy and new materials, and biomedicine to promote the depth integration of new media and manufacturing, and accelerate the national development. In the future, China’s new media market may exceed the United States and occupy the first place.

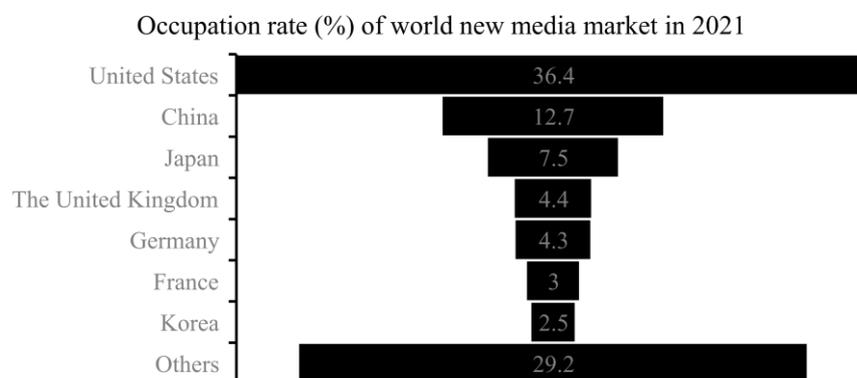


Figure 2. Predicated market share of new media in the world in 2012 (%)

With the rapid development of new media, artists also begin to emphasize the application of information technology in the artistic creation, which lead to the rapid spread of new media art. At present, artistic creations using new media as a carrier are endless, and the stage play has become one of the classic examples of the combination of new media art and drama. The combination of new media and stage play can promote the development of both, so that they can be more and more modern.

Stage art design includes the artistic nature of space and time. It is an art form that exists in four-dimensional space. At the same time, it requires extremely high technical and material conditions. The material factors included are: stage, lighting, sound, props, and scenery. etc., and the final effect is composed of specific activity, activity space, light sense, texture, and shape. The significance of stage lighting in the entire stage art design lies in the degree to which the light renders the entire play. The light will deliberately describe and portray the characters and props in the play according to the needs of the plot and the emotions displayed, and adopt the bright light to the characters and scenery that need to be highlighted to highlight the subject [5]. Stage lighting often uses the bright or dark light to make up a stage effect with spatial characteristics. The stage sound can increase the sense of space of the stage, and the integration of new media technology makes the presentation of stage sound effects more unique and thicker, reaching an unprecedented height. It not only increases the level of stage sound, but also increases the depth effect of stage space [6]. At present, most theaters in China have used 6.1 channel, which is an upgrade of 5.1 channel. It is to add a new independent Back Surround channel in addition to the original 5 main channels, which perfectly compensates for the lack of sound effects in the rear sound field and greatly increases the continuity of the rear sound field. The traditional stage play uses the two-dimensional sounds to show the performances, and the

audience can't hear many subtle sounds. But after the 6.1 channel of new media technology, the audience is surrounded by all-round stereo sound, not only can hear the sound of the stream, but also hear the sound of a bird waving its wings, or even the sound of a needle falling to the ground. Audiovisual special effects include stage lighting and sound. The sound and photoelectric technology of the stage is extremely important for the rendering of the entire stage atmosphere.

3.2. Application of Lighting and Sound Technology in Stage Performance

The application of lighting and sound technology in stage art performance is explained through examples. The 31st International Theatre Festival, held in 2008, was the largest drama festival in the world and was held in Nanjing. The multi-media play of "Anime Master Norman" of the Canadian Four-dimensional Art Troupe was a unique performance of the drama festival, and was a "saluting play" showed by actor and multi-media lighting effects. The unique feature of the play is that there is only one actor in the whole show. The rest of the actors are virtualized through the new media technology. These virtual actors are all kinds of animated characters created by the animation master Norman. The stage is presented as the interaction and communication of a real people and various animated characters, and perfectly combine true and false and real using multimedia lighting technology, attracting praise again and again. A picture of "Anime Master Norman" is given in Figure 3 as below.



Figure 3. Stage photo of Canadian stage play "Anime Master Norman"

In the "2012 Hubei Medicine Buddha Culture Festival", the famous scriptwriters and directors dedicated Buddhist stage play "The Light of Colored Glaze" combining the sound, light, and projection to the audience at the opening ceremony. A large number of new media technologies were used in the repertoire, which not only better demonstrated the profound Buddhist teachings, but also used specific images to explain a large amount of Dharma content to the audience. The main plot of "The Light of Colored Glaze" is that when the oriental Medicine Buddha is walking the bodhisattva road, he shows his compassion and wishes when that all beings in the world are constantly suffering from the six reincarnations, and hopes to save the suffering in the infinite number of robbery. The entire Buddhist stage play relies on high-tech new media technologies such as lighting, sound, and projection to make the stage more dazzling and show the special style of the combination of contemporary art and new media technology to the audience, so that the audience can deeply understand the implication of the oriental medicine Buddhist culture. Especially the audience on the scene, facing the colorful stage, it seems to they are shrouded in Buddha's mind with peaceful mind. At the same time, the actors show the audience the beautiful scenery of the glaze portrayed by Buddhism through the graceful dance posture under the lights, winning the applause of the audience. The stage photos of "The Light of Colored Glaze" were given in Figure 4.



Figure 4. Stage photos of China's famous Buddhist stage play "The Light of Colored Glaze"

3.3. Importance of Lighting and Sound Technology in the Stage Performance

The importance of lighting and sound technology in the stage performance is shown in Table 1 below. Stage lighting is an indispensable part of modern stage performance, and it is the presentation of stage art. The types of equipment used on the stage include chasing light, top light, flowing light, backlighting, and world lighting, etc. There are many types of lightings, and different lightings have different effects on stage performances. For example, the chasing light can make a finishing point to the stage effect. By tracking stage actors, the stage scene and characters can be highlighted so that the performance can be more exciting. Thus, it is one of the indispensable equipment in the stage performance. In particular, the combination of new media technology and stage lighting provides a better rendering effect, increases a lot of charm to the stage play, and brings better audiovisual experience to audiences [7].

The stage sound can enhance the atmosphere in the performance, mobilize the emotions of the actors, and promote the trend of the plot. The combination of new media technology enhances the important role of the stage sound in the stage performances. For example, in the musical "Miserable World", the background of music, the professional qualities of actors, and the change of scenes bring shock to the audiences' minds in addition to touching stories and themes. When the music sounded and the protagonist sang "Let Me Die and Let Him Live" with a sincere look and beautiful melody combined with the ferocious military music and the explosion of gunfire, the audiences are immersive. Thus, it can be known that the sound effect can promote the storyline step by step to the climax.

Table 1. Importance of lighting and sound technology in the stage performance

	Importance
Lighting	Rendering the performance atmosphere
	Improving the stage lighting and guiding the audience
	Shaping the character's image, expressing the emotions, and showing stage illusions
	Creating a space environment
	Showing the time and space conversion, highlighting the dramatic contradictions, strengthening the stage rhythm, and enhancing the artistic appeal
Sound	Adding vitality to the stage performance
	Driving the plot
Combination of lighting and sound	Highlighting the atmosphere of the stage environment
	Replacing the sceneries and props

4. Conclusion

The use of lightings on the performance stage will add color to the performance, render the entire stage, increase the brightness, and concentrate the audience's attentions. The stage sound brings excellent listening enjoyment to the audience, increases the attraction of the stage performance, and highlights the stage performance atmosphere, so that the plot can more impress the audience. In particular, the combination of new media technology in the stage performances not only satisfies the audiovisual enjoyment of audiences, but also enriches the artistic expressive power of the stage on the basis of not harming the basic principles of the performance. Integrating the new media technology into all aspects of the stage performances is one of the important types of new media stage performances in the future, and is a historical necessity.

The development of new media art is advancing with the times. On the one hand, it depends on the bold innovation consciousness and unexpected imagination. On the one hand, it uses the real technologies. These technologies have to rely more on the use and popularization of the new media technology, so that new media stage performances can have a completely different influence and unique charm from the traditional stage performances, and bring a variety of artistic flavors and performance methods to the stage plays. New media art meets the current audience's aesthetic concepts and cultural consumption needs. In the future, the stage play using the new media will be widely popular, and the interactive and holographic virtual modern stage play will be loved by the general audiences. Performers are no longer restricted by the time and space, and can achieve performing dances with virtual images in different places and at different times, which will become a kind of popular stage play. The continuous innovation of new media technology provides a new form of stage art performance and enriches the sense of time and space on the stage. This trend also makes the innovation and application of the new media technology become the hot spot of stage art in the contemporary world.

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