The Living Inheritance of Hunan Flower Drum Opera Based on Human Computer Interaction Technology

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Abstract

As an intangible cultural heritage, Hunan Flower Drum Opera is not only one of China's precious cultural resources, but also a witness of historical development. In view of the single protection form and interactive limitations of Hunan Flower Drum Opera, on the basis of retaining the traditional repertoire and folk cultural characteristics of Hunan Flower Drum Opera, the paper constructs a live communication mode of voice interaction design, image interaction design and immersion interaction design through human-computer interaction technology, so as to increase the interactivity and interest of intangible cultural heritage protection and dissemination.The live inheritance of drama has practical significance, and also provides new ideas for the live inheritance of excellent traditional culture.

Keywords

Hunan Flower Drum Opera; Human Computer Interaction; Living Inheritance

An Overview of Hunan Flower Drum Opera

Hunan Flower Drum Opera is the general name of Flower Drums and Light show, which belongs to the Han Opera in Hunan Province. As a regional cultural form, Hunan Flower Drum Opera carries the life concept and emotional style of Hunan people (Zhong, 2011), and has profound historical and cultural accumulation. As early as the Spring and Autumn and the Warring States period, the Xiang Chu Culture with fragrant charm germinated the embryonic form of Hunan opera art. To the prosperity of Yuefu poems in the Han Dynasty, it nourished the development of various Opera Arts in Hunan. Until the Ming and Qing Dynasties, the opera art was unprecedented prosperous. All kinds of operas settled in Hunan, which further enriched Hunan opera art. Hunan Flower Drum Opera has accumulated a lot of strength through the accumulation and precipitation of history, and

finally emerged in the Kang-Qian Flourishing Age of Qing Dynasty (Zhu, 2018). Until the period of the Republic of China, Hunan Flower Drum Opera has become more and more professional, which also marks that Hunan Flower Drum Opera has entered a mature stage. In 2008, Hunan Flower Drum Opera was approved by the State Council as the second batch of national intangible cultural heritage (hereinafter referred to as "intangible cultural heritage") and became the symbol of Hunan culture.

Development Status of Hunan Flower Drum Opera

Hunan Flower Drum Opera is an important embodiment of HuXiang culture. Influenced by the barbarian culture of Huxiang culture, people will have the custom of singing when they work in the field, such as the tea picking song when picking tea and the planting Yangko when transplanting rice seedlings (Yan, 2018). The performance form and content of Hunan Flower Drum Opera are absorbed from these labor songs. This form of Flower Drum Opera is also known as field flower-drum. Hunan Flower Drum Opera is evolved through the gradual development of field flower-drum. Flower Drum Opera spreads and sings with the folk troupes, and continues in this seemingly loose, but actually authentic and close to people's life. After that, there were regular flower drum troupes singing on the stage. The two forms complement each other, so Flower Drum Opera develops rapidly and expands to other areas, attracting more people's attention. At the same time, the government's management intervention makes Flower Drum Opera more standardized and its performance forms more abundant, which makes the development of Flower Drum Opera reach its peak, and people's enthusiasm for Flower Drum Opera is gradually increasing in its development.

The Weakness of Flower Drum Opera in the Digital Age

With the advent of the digital age, the rapid rise of the digital industry has brought about earth shaking changes in people's way of life. In their spare time, people are no longer shuttling around in various theatres to watch opera performances, nor are they confined to the single performance of Flower Drum Opera. They use the Internet as a medium for all kinds of entertainment. The change of the times makes the development of Flower Drum Opera in a dilemma. Although the efforts of several generations of Flower Drum Opera artists have made Flower Drum Opera effective in inheritance and development, it still faces many problems. First of all, for Flower Drum Opera itself, the repertoire is too old to meet the current audience's artistic and cultural pursuit, which is not in line with the aesthetic of contemporary people. Secondly, Flower Drum Opera is presented in the form of stage drama, which is too single, leading to weak communication channels. Moreover, the professionalism of Flower Drum Opera makes many people who love Flower Drum Opera stop. At the same time, the way of inheritance of Flower Drum Opera is not recognized by the younger generation. Little is known about the cultural connotation of Flower Drum Opera, which makes

it difficult for Flower Drum Opera to move forward in the process of inheritance. Such problems have hindered the development of Flower Drum Opera. It can be seen that the protection of Hunan Flower Drum Opera is an urgent matter.

Innovation of Hunan Flower Drum Opera Based on Human Computer Interaction Technology

Human Computer Interaction Technology

Human computer interaction refers to the interaction between human and computer through a certain dialogue language or communication skills, with a certain interactive way to complete the instructions that people convey to the computer, and the instructions received through computer operation can feed back the calculation results to people. It is an information exchange process between people and computers. The process of human-computer interaction is mainly completed by input and output devices. The input device transforms the operator's ideas and needs into the language that the computer can recognize and input into the computer CPU, and then through calculation, the calculation results are converted into the language that can be recognized and understood by the output device, so as to complete a complete human-computer interaction process (Ding, 2005).

The essence of human-computer interaction is the interaction cycle formed by human information input and machine output feedback. Whether in the era of PC or mobile Internet, the efficiency of this interactive cycle has been improved by the upgrading of technology. With the continuous development of computer technology, the interaction between human and computer has not been a single interaction between human and computer through coded input, Nowadays, there are many kinds of human-computer interaction recognition languages, such as Siri voice input, iFlytek input method, touch screen direct input, gesture input, portrait mode and so on, which are popular among the public. This is a more intelligent multi-channel, multimedia human-computer interaction, is the main way of human-computer interaction, and is also the development trend of human-computer interaction technology.

Human Computer Interaction in Hunan Flower Drum Opera

The traditional Flower Drum Opera has been unable to be based on the new era, and the solidified mode of Flower Drum Opera is difficult to meet the aesthetic needs of contemporary audience. Hunan Flower Drum Opera has approached the edge of the city. The living inheritance of Hunan Flower Drum Opera is the realistic demand for carrying forward the spirit of Hunan culture and implementing the strategy of strengthening Hunan Province with culture. In the process of

inheritance, we should grasp the current digital technology resources, and on the basis of retaining the traditional repertoire of Hunan Flower Drum Opera and the sincerest folk cultural form, carry out digital innovation on the Flower Drum Opera, and explore the inheritance and dissemination of Hunan Flower Drum Opera in digital. The new path in technology makes Flower Drum Opera really alive and prosperous.

(1) Voice Interaction Design

Intelligent voice interaction is a kind of derivative in the era of artificial intelligence, which endows the machine with the ability of perception and cognition. In the process of information transmission, the comprehensive utilization rate of auditory language is much higher than that of visual symbols. Therefore, voice interaction tends to be a kind of instinct of human beings, and is the most natural way of human-computer interaction. Personalized voice customization provides customers with the choice of many languages and dialects. With the support of artificial intelligence black technology, entertainment voice changing service realizes accurate voice transfer and makes uncle change into "wonderful voice loli", aiming to help users realize interesting changes in voice. These fast input, low time cost and inclusive ways not only change people's lifestyle, but also inject new strength into the society.

Hunan Flower Drum Opera is rich in musical tunes. Most of these tunes are linked structure of Qupai, supplemented by plate changes. Therefore, the development of Hunan Flower Drum Opera has derived four forms: Playing gongs cavity, chuan scale, Pai and minor scale. Hunan Flower Drum Opera is characterized by its tunes, tunes and dialects. With the help of artificial intelligence technology, Hunan Flower Drum Opera is digitized by using the characteristics of diversified tunes and tunes. Specifically, the paper collects the tune types of Hunan Flower Drum Opera, and establishes the tune database of Flower Drum Opera by means of speech recognition and audio storage. For the amateurs of Flower Drum Opera, a series of adjustments can be made to the tone, volume and language version of the user's input voice. According to the user's needs, the data in the tune database that is consistent with the user's needs can be extracted for voice interaction design, so that users can experience different types and versions of Hunan Flower Drum Opera. Using online speech synthesis to expand the transmission of Hunan Flower Drum Opera. Because the lines of Flower Drum Opera conform to the character and colloquialism of drama language, and the lines are humorous and catchy, people can quickly master the lines and remember them.

In order to make the traditional Hunan Flower Drum Opera more interesting, we can also use the entertainment voice changing voice way to transmit the interesting voice change of Flower Drum Opera on the basis of retaining its own voice flavor. Users can select the typical representative of human and object voice in Hunan Flower Drum Opera to exchange roles through voice input, so

that the user voice can be transformed into Flower Drum Opera actors change voice and lip sound are unified to let users feel and drive multi-modal interactive experience of virtual image.

(2) Image Interaction Design

In the digital information age, image as a two-dimensional carrier of visual information, has been widely involved in various fields of society. The flexibility and inclusiveness of digital technology makes the image processing directly output from the original raw material to the interactive image processing form which carries on the operation processing to the original material now. Face recognition technology is an interactive image processing technology. It is a biometric recognition technology based on the analysis and comparison of human face feature information (Wang, 2020). This interactive image processing technology has entered into people's lives and become one of the ways of entertainment.

Hunan Flower Drum Opera has a strong dramatic characteristics, and its role setting and dress make-up have certain refinement. Once a clown in his life, the drama image of "Three playlet" has left a deep impression on the audience. The traditional Flower Drum Opera performance can only feel the role image of "Three playlet" on the drama stage. In the current fast-paced living environment, the role image of the drama stage is fleeting in the audience's impression. Only those Flower Drum Opera fans have a deep understanding of it. Based on this limitation, this paper attempts to use the form of dynamic image stickers to understand the "three small plays" in Flower Drum Opera "playlet" and other characters are recreated. On the basis of digital technology face recognition, the role image of Flower Drum Opera is set up digitally, and the role image gallery of Flower Drum Opera is established. Users can experience the dynamic image stickers of Flower Drum Opera through face recognition technology and face key point detection, so as to enhance the memory of the role image of Flower Drum Opera, in order to let Hunan Flower Drum Opera has higher recognition. On the basis of dynamic Flower Drum Opera character image interaction, the voice interaction design is carried out. When the user selects the character image sticker of Flower Drum Opera, it can be matched with a unique segment in the tune of Flower Drum Opera to enhance its recognition, so as to stimulate its entertainment function under the combination of image interaction and voice interaction diversified and dynamic inheritance of Drum Opera.

(3) Immersive Interaction Design

With the gradual improvement of the level of science and technology, the emergence and development of new media, film and television media have entered a new stage in the digital era, and virtual art experience emerges as the times require. In recent years, holographic projection technology has been frequently introduced into various major art fields. The immersive artistic

scene created by this technology improves people's aesthetic cognition. It can not only produce three-dimensional space illusion, but also make the illusion in the air interact with performers. Holographic projection technology makes the three-dimensional picture suspended in the half sky of the real scene for imaging, creating an atmosphere that is also illusory and real. It has a strong sense of space and perspective, and realizes the close combination of the image and the real object (Zhou, 2019), and the visual effects are lifelike. Digital Kingdom Domain3.0) is a global leader in the production of special effects, and also the key founder of "virtual Teresa Teng". In 2013, at the famous singer Jay Chou's concert, after 18 years, we saw Teresa Teng's "virtual image reconstruction technology" for the first time in Asia. Through the virtual reality technology of multi-dimensional space, Jay Chou and Teresa Teng performed on the stage across time and space. This multi-dimensional virtual reality technology conveys the digital development of the whole system of image system in the art field through multi-level and multi angle ways.

Compared with the traditional stage performance of Flower Drum Opera, people prefer to experience the stage of Flower Drum Opera. As Hunan Flower Drum Opera itself belongs to Taizi opera, but with the sharp decrease of the regular Flower Drum Opera Troupe, the lovers of Flower Drum Opera watch it through TV screen, and their experience is limited. In order to make Hunan Flower Drum Opera vivid and not limited by space, we can establish an immersive holographic projection Experience Hall of Hunan Flower Drum Opera. Research shows that in immersion interaction, it is a passive cognitive process. Through the virtual reality technology, the stage of Flower Drum Opera is created into a kind of unrestricted, unrestricted and irregular space. People can deduce at will according to their understanding of Flower Drum Opera. When people in this virtual space can sing with professional actors in the space, they can also freely imitate or recreate the repertoire of Flower Drum Opera in this immersive scene. This kind of multi-sensory participation enables people to have a new understanding of Flower Drum Opera, breaking the professional and rigorous stage presentation mode of Flower Drum Opera in people's hearts, so that the Flower Drum Opera can really enter into life and be close to the audience.

The Significance of Human-Computer Interaction Design of Hunan Flower Drum Opera

The digital protection of Hunan Flower Drum Opera is based on the folk cultural value of the traditional Flower Drum Opera. The digital transmission of the Flower Drum Opera is based on the human-computer interaction technology. On the basis of retaining the traditional repertoire, role image and tune of the Flower Drum Opera, people can intuitively and comprehensively understand the regional cultural characteristics of Hunan Flower Drum Opera from visual and auditory perspectives, Through the form of interaction, we can arouse people's awareness of the protection of Hunan Flower Drum Opera, and improve people's participation and interest in the spread of Hunan

Flower Drum Opera. The application and promotion of digital technology is of great significance in promoting the live inheritance and communication of Hunan Flower Drum Opera.

The design of voice interaction is conducive to the collection and extraction of the tune tone of Flower Drum Opera and the establishment of tune database of Flower Drum Opera. Based on the recognition of the user's Opera audio frequency, the voice interaction design can adjust the regional language features, push the most distinctive local dialect to the public, and let the public feel the unique language characteristics of Huxiang culture. Through voice interaction to strengthen the user's intonation and the characteristics of opera tunes, let more people experience all kinds of tunes in Hunan Flower Drum Opera, and truly feel the opera charm of Flower Drum Opera.

The graphic interaction design is conducive to the establishment of a picture library of the characters in Hunan Flower Drum Opera. Through face recognition technology, people can have interesting interaction with the characters in the Flower Drum Opera. The image interaction design deepens the role image in Flower Drum Opera, and carries the essence of traditional opera in the form of modern digital technology.

Hunan Flower Drum Opera experience hall with immersion holographic image system comprehensively shows the folk cultural characteristics of Flower Drum Opera, which makes people remember deeply. It not only enriches the communication form of traditional Flower Drum Opera, but also makes more people feel the artistic value of Hunan Flower Drum Opera, and establishes people's firm belief in the protection and inheritance of Hunan Flower Drum Opera.
Rooted in the characteristics of folk culture, Hunan Flower Drum Opera needs to retain the most simple folk cultural form and the underlying regional cultural emotional gene, which is the foundation of Hunan Flower Drum Opera. The integration of modern digital technology and the spread of Hunan Flower Drum Opera in the form of brand-new diversified digital technology is an important measure of Hunan Flower Drum Opera as a symbol of Huxiang culture.

Conclusion

The living inheritance of Hunan Flower Drum Opera based on digital human-computer interaction technology has realized an all-round, multi angle and multi-level presentation mode of intangible culture digital protection, and verified the feasibility and necessity of interactive Hunan Flower Drum Opera presented by digital technology. Human computer interaction technology is only one aspect of many digital technologies. In the context of digital age, the application of diversified digital technology to the protection and inheritance of Chinese excellent traditional culture not only conforms to the trend of the digital era, but also enhances cultural soft power and improves cultural confidence.

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