

Digital protection and dissemination of intangible cultural heritage based on information ecology theory

Qun Xia

Nanchang Institute of Science and Technology, Nanchang, Jiangxi, 330000

Abstract: The protection and dissemination of intangible cultural heritage has always been the focus of society and media, and how to effectively protect, inherit and disseminate it is also a research hotspot in the academic circle. Due to the immaterial, cultural and folk characteristics of intangible cultural heritage itself, many young people do not pay attention to it, which is out of touch with the modern society, the aging of inheritors and other invisible problems. Make it difficult to maintain in the market demand, facing the dilemma of loss. With the iteration and update of digital technology, digital protection uses modern intelligent technology to collect and store intangible cultural heritage, converts all kinds of information into digital information, changes the transmission channels and methods of intangible cultural heritage, provides greater space for the diverse expression forms of intangible cultural heritage, and promotes the protection and dissemination of intangible cultural heritage.

Key words: information ecology; Intangible cultural heritage; Digital protection

1. Case analysis and dilemma of Intangible cultural heritage

1.1 Case Study -- Wuyuan Nuo Dance in Jiangxi Province

Nuo dance is a folk dance widely spread throughout Jiangxi Province, which has the function of exorcising ghosts and exorcising epidemics and offering sacrifices. Wuyuan Nuo dance, commonly known as "Ghost dance" or "Dance ghost", is one of the Nuo dances in Jiangxi Province. Originated from the early folk sacrificial activities, is a kind of wearing a mask according to the folk sacrificial activities and dance ceremony. The original connotation is to pray for the elimination of disaster, amuse oneself. After the continuous processing, finishing, refining and absorbing the essence of other performing arts by folk artists, the local folk dance art was gradually formed. In addition, the unique Nuo mask art made it develop into a folk dance art with distinct local characteristics - Nuo dance. There are many nuo dance programs in Wuyuan, such as "The Beginning of Heaven and the Creation of the Earth", "The Sun Shoots the Moon", and "Meng Jiangnu sends Cold Clothes", which reflect mythology and folklore. Wuyuan is rich in nuo dance movements, such as "exercising soldiers", "crossing the river by patting legs", "playing feathers", "dancing flowers" and "turning sticks" in "Prime Minister Exercising Soldiers", and "carving axes", "turning axes" and "sharpening axes" in "Opening the World". As a national intangible cultural heritage, Nuo dance movement has a long history and profound cultural deposits. Nuo dance is favored by rural people in Jiangxi Province for its diversified activities. Wuyuan Nuo dance, with its ancient and simple dance style and numerous performances, carries rich traditional cultural contents. Intangible cultural heritage of dance is in danger of disappearing rapidly due to its characteristics of region, inheritance and vitality. We cannot let this intangible culture be lost, so we should pay close attention to how to protect, inherit and spread it.

1.2 The survival dilemma of intangible cultural heritage

The cultural value reflected by the performance methods, style characteristics and content of dance intangible cultural heritage involves various aspects such as national history, religious belief, life form, local and people conditions, aesthetic taste and so on. It can be said that dance intangible cultural heritage is the interweaving and integration of social culture. In order to accurately grasp the inheritance status and communication difficulties of Wuyuan Nuo dance, the author collected data from five aspects of disseminators, communication content, communication media, communication audience and communication effect through literature review, network and field questionnaire survey, and made content analysis, drawing the following conclusions:

(1) Single form of inheritance

In the traditional media era, the inheritance of intangible cultural heritage is limited. It is passed down from generation to generation, and the inheritance forms are mostly graphic record, oral transmission and external imitation. Lack of innovation, conservative tradition, not only did not complete the record of intangible cultural heritage, even distortion. Intangible cultural heritage of dance mainly relies on dance work, facial expression and other inheritance, which needs to record fine movements. Ordinary entity inheritance is easy to lose.

(2) Limited audience leads to breakage of inheritance chain

Many young people said, "Intangible cultural heritage is really not an art form that our age group will pay attention to." On the one hand, Nuo itself is a time-consuming dance with many people participating in it, and its dance form and content make the inheritors weak. With the rise of various entertainment activities, there are many new and exciting activities, so few people are willing to repeat one form of activities, and many people do not understand and love the ancient folk culture. Especially young people. On the other hand, many inheritors have to live far away from home to make a living, which makes this folk custom irrelevant in the trend of economic development.

(3) The importance of digital protection

With the gradual acceleration of the urbanization process, the loss of the main group of cultural inheritors in rural areas, the living state of cultural heritage cannot be sustained. By creating a digital resource library and according to the specific characteristics of intangible cultural heritage projects, digital protection adopts technologies such as text entry, photography, video recording, graphic scanning and virtual reality to input, store,

analyze, organize, display and spread. With the development of new technologies, the development space of cultural heritage has been expanded and the feasibility of cultural heritage space protection has been enhanced. Digital protection solves the disadvantages of traditional protection mode: large amount of traditional protection materials, high cost of management and maintenance; Low communication and openness to the outside world; "There is no successor." The establishment of digital library, reduce maintenance costs, realize permanent preservation, display in multiple ways, beyond the limitation of time and space, the openness of digital platform, expand the audience.

2. Overview of information ecology theory

The concept of information ecology originates from the concept of ecology in biological science. Generally speaking, ecology refers to the living conditions and states of organisms, including both the natural environment in which organisms live and the growth and development state of organisms. All organisms grow and evolve in the ecosphere, forming the symbiosis and co-prosperity within the ecology.

Information ecology is to introduce the concept of natural ecology into information science, and to study information construction, information self-organization and information system theory from the perspective of ecology, so as to express the correlation between ecological concepts and complex information environment. Information ecology pays more attention to the information cycle of the whole system and analyzes the information flow of the whole system from a macro perspective, so as to promote and maintain the balance of the information ecosystem and achieve the balanced and stable order of the information ecosystem. The core purpose of information ecology is to emphasize the harmonious and orderly development of information, information people and information environment.

3. Protection and dissemination of intangible cultural heritage under the theory of information ecology

With the further development of digital technology, Chinese mainstream media have many innovations in forms to cater to the communication characteristics of the digital age. In this context, cultural resources "live" with the help of digital media, combining the important value contained in it with the new situation and new points of digital technology, in order to achieve creative transformation and innovative development.

Wang Yaoxi defined the digital protection of intangible cultural heritage as the use of digital collection, storage, processing, display, dissemination and other technologies to transform, reproduce and restore intangible cultural heritage into a shareable and renewable digital form, and interpret it from a new perspective, preserve it in a new way, and use it to meet new needs. In this definition, although it is conservation, the ultimate goal is still development and utilization, so don't neglect market needs and display and dissemination.

3.1 Digital protection countermeasures

(1) Determine the digital classification and collection standards of dance intangible cultural heritage

Digital classification is the premise and foundation of digital storage, organization, management, protection and dissemination. Provide unified classification standards for resource sharers to improve resource utilization. Starting from the knowledge characteristics of time, specific evolution, form of presentation, regional scope and the reason for development, the resource description is perfect, and the standards and norms of digital classification of dance intangible cultural heritage are established.

At the initial stage of data collection, determine the hardware and software facilities and data storage specifications required for data collection. In addition, every dance intangible cultural heritage contains a large amount of data and information, so the digital collection of intangible cultural heritage resources should be based on standardized classification, and scientific and unified intangible cultural heritage data collection standards and collection techniques should be determined.

At present, high-precision digital photography of intangible cultural heritage is a commonly used means of collection and recording, which plays a very important role in the protection of intangible cultural heritage. The first step of digital photography is to determine the object of intangible cultural heritage, acquire the optical image of the object intangible cultural heritage, and then transform the optical signal into digital signal through the photoelectric sensor, and finally form the digital image. Digital camera, video camera as a typical digital camera equipment, shooting process data information can be directly stored in digital format, for workers to provide high-precision audio and video data collection, convenient for later editing and processing.

3D scanner is a device that converts object information such as photos, text pages, drawings and samples into digital models by means of scanning using photoelectric technology and digital processing technology. Three-dimensional has a strong sense of stereo, combined with a variety of high and new technologies, in a short time to quickly obtain the three-dimensional shape of the target object, pattern color, surface albedo and other information. A variety of new technological means, such as three-dimensional scanning, motion capture and visualization construction, support the innovative development of digital inheritance and communication of intangible cultural heritage of dance, so as to ensure the overall protection of excellent national cultural resources.

Dance activities consist of people and movements. Firstly, aiming at the shortcomings of traditional human model construction, such as redyeing and low efficiency, a rapid generation method based on a single photo of the inheritor's realistic human body was studied. It includes the construction of 3D face model library, the interactive calibration of 13 facial feature points and the mode matching, the texture mapping of the three dimensional xannel deformation and the bilinear difference, the skin color fusion based on the Alpha map and the body adjustment based on the vector difference, etc., to realize the construction of the realistic human body of the inheritor. Secondly, the motion capture technology is used to bind the inheritor model to the captured real dance movements, so as to realize the digital restoration of folk dance activities in the original ecological environment.

(2) Determine the digital display and communication technology of dance intangible cultural heritage

Inheritor protection, as the most long-established media of intangible cultural heritage, has an incomparable impact. Most of the younger generation lack interest or knowledge of intangible cultural heritage, which affects their input to some extent. The interesting, interactive and other features of digital technology are easy to attract more people to participate in and understand intangible cultural heritage. At present, the technical standards and metadata description standards of the digital resources of dance intangible cultural heritage are not uniform, which makes it difficult to realize the sharing and dissemination of the network platform. According to the characteristics and requirements of the digital resources of folk dance, the digital collection technology and metadata preservation standards are studied, including the digital collection technology and metadata standards of models, movements, videos and audio, and the digital technology standards suitable for the classification of digital resources are perfected to achieve the unity of the online dance representation rules. For the intangible cultural heritage with existing sounds and movements, digital technologies such as high-precision digital camera technology can be adopted for protection, while for the intangible cultural heritage that refers to the protection of body movements, digital technologies such as two-dimensional and three-dimensional scanning technology and motion capture technology can be adopted for protection.

3.2 Information ecological theory helps the protection and dissemination of intangible cultural heritage

(1) The participants in the information are very important

Raise the people's awareness of protection. The protection of intangible cultural heritage needs the participation of the whole society and the whole nation. Only by improving the cultural consciousness of the whole nation and attracting strong social attention, can the cause of intangible cultural heritage be better carried out and cultural confidence be achieved.

Government departments should actively publicize the advantages of digital protection of intangible cultural heritage. Don't limit it to a small local area, spread it widely. Advertise more. With the advent of the Internet, everyone can be an anchor and a communicator on platforms such as Douyin and Kuaishou. As ambassadors of propaganda, cultural propaganda comes in many forms. Hold more exhibitions of digital achievements of intangible cultural heritage. Let people see, touch, and really feel the intangible cultural heritage into daily life.

(2) Establish an information sharing platform and a nongovernmental independent collection platform

Digital technology provides a brand new cultural expression form and way for intangible cultural heritage resources. Through digital technology, intangible cultural heritage resources are encoded and stored, and a digital database of intangible cultural heritage is established. Taking these resource information as the basis and guided by market demand, the intangible cultural heritage knowledge is re-created to establish market demand-oriented and share cultural products. Relying on personal computers, mobile phones and other mobile terminals, computer websites, mobile websites and wechat websites for the exhibition and dissemination of dance intangible cultural heritage are established, and digital museums and other important platforms for the publicity and display of intangible cultural heritage are set up. On the website, through the introduction of electronic methods and ways of dance resources, as well as the provision of relevant assistance, the website can help users to independently file data, and at the same time provide a multi-party data sharing platform to assist the public to contribute personal intangible cultural heritage of dance. This spontaneous collection method effectively avoids the difficulty of obtaining dance intangible cultural heritage.

(3) Establish visual expression and spatial theoretical framework

In addition to the knowledge source layer, knowledge description layer and visual expression layer, the application and expansion of knowledge are emphasized. The purpose of constructing the digital protection technology system of dance intangible cultural heritage and creating a more perfect virtual environment is to enhance the appeal of intangible cultural heritage. In addition to external protection of dance movements and performance forms, it is more necessary to further understand and master the national history, social forms, customs, religious beliefs, thoughts and feelings and ways of expressing feelings related to dance, namely, the cultural space of dance. Through text introduction, picture display, relevant literature, publications, costumes and other information, users can have a comprehensive understanding of the characteristics of a dance intangible cultural heritage and the way to obtain the archives.

4. Summary

Intangible cultural heritage comes from production and life, closely related to clothing, food, housing and transportation. Intangible cultural heritage, as a kind of heritage culture, is a prerequisite for the marketization of intangible cultural heritage. It is necessary to enhance the deep integration of culture and technology. It is an effective way to protect and inherit the intangible cultural heritage by effective protection mechanism and means to protect the expression form and cultural space of the intangible cultural heritage.

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