

# Computational Method-Driven Digital Inheritance of the Taiping Drum of Lanzhou and Collaborative Reconstruction of Cultural Ecology

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**Abstract** In the context of the rapid development of digitalization, the protection and inheritance of intangible cultural heritage is facing new opportunities and challenges. This paper takes Lanzhou Taiping Drum as an example, analyzes its cultural characteristics and current protection status, and discusses the innovative application of digital technology in the protection of intangible cultural heritage. Combined with high-definition imaging, 3D modeling, big data analysis and other technical means, this paper puts forward a practical path of digital recording, intelligent assistance and cultural ecological reconstruction. Research shows that digital technology can significantly improve the preservation, dissemination and experience of intangible cultural heritage, and promote the development of intangible cultural heritage from local culture to global dissemination. The research of this paper provides theoretical reference and technical support for intangible cultural heritage protection, aiming at promoting the sustainable development of traditional culture in the digital age.

**Index Terms** intangible cultural heritage; Lanzhou Taiping Drum; Digital protection; Intelligent assistance; Cultural ecological reconstruction

## I. Introduction

Intangible cultural heritage, as an important part of human cultural diversity, carries rich historical information and national memory, and is a living fossil of the national spirit [1]. Among them, Lanzhou Taiping Drum, as a Chinese folk dance music, is formed and popularized in the folk as other folk music. It is a folk dance and music art created and performed by the people of Lanzhou, which expresses the traditional culture of Lanzhou, embodies the spirit of the working people of Lanzhou, and has strong local characteristics of Lanzhou [2]-[4]. Obviously, as a kind of local folk cultural activity, Lanzhou Taiping Drum vividly shows the concept of life and aesthetic interest of the masses [5]. Taiping Drums are mainly performed collectively, and it is precisely because the collective power gives people a strong spiritual incentive that Taiping Drums inspire the local people's attitudes towards life and nature, and they are able to subconsciously deepen the national spirit into the hearts of the masses and sublimate it continuously [6]-[9]. However, in the rapid development of modern society, the development prospect of Lanzhou Taiping Drum is facing the risk of loss and extinction. In order to protect and inherit this unique cultural resource, the government and related organizations have introduced relevant policies and measures.

The advantages of digitalization for the transmission of intangible cultural heritage are obvious. Feng, H investigates the significant advantages of digital technology in the field of intangible cultural heritage preservation and dissemination in different cultural contexts, and describes the necessary preservation strategies for the flourishing of intangible cultural practices using virtual reality and 3D scanning technology [10]. Wang, Q shows that digital technology can enable intangible cultural heritage in the new era to present new forms of development, and for this reason, designing non-heritage databases and digital maps for the management and operation of non-heritage digital resources to promote the inheritance and dissemination of non-heritage [11]. Liu, J. pointed out that ecological marginalization and imperfect development are the developmental drawbacks faced by many intangible cultural heritages, combining the protection and dissemination methods of digital information of intangible heritages with digital technology to provide valuable insights into the practice of intangible heritage inheritance [12]. Zhou, Y. et al. stated that in the process of safeguarding intangible cultural heritage, there are advantages in the development of digital resources and the formulation of policy conditions, but there are deficiencies in data storage and management and operation, so the construction of a sharing platform for intangible cultural heritage based on digital technology can further enhance the preservation of intangible cultural heritage data [13]. Amali, L. N. et al. designed an information system suitable for information dissemination, which can provide users with real distribution of tangible heritage and intangible cultural heritage information has

deepened their understanding, effectively enriching the protection and inheritance of intangible cultural heritage of the reality of the path [14]. Therefore, it is necessary to promote digital technology as a carrier, digital technology in the form of dissemination, presentation, sharing forms as the way of Lanzhou Pacific Drum cultural heritage path, with the help of digital technology to disseminate and promote the culture of intangible heritage.

Based on this, this paper takes Lanzhou Taiping Drum as an example to discuss the innovative application of digital protection in non-genetic inheritance, and puts forward a new path to reconstruct cultural ecology. By analyzing the cultural characteristics and protection status of Lanzhou Taiping Drum, combined with the specific practice of digital technology empowerment and data analysis assistance, this paper aims to provide technical reference and theoretical support for intangible cultural heritage protection and promote the sustainable development of traditional culture in the new era.

## II. The historical and cultural value of Lanzhou Taiping Drum

### II. A. Historical origin: From folk tradition to cultural symbol

There is a folk legend about the origin of Lanzhou Taiping Drum. During the reign of Hongwu in the Ming Dynasty, General Xu Da was ordered to go west. Soldiers to the Gulan city, a long attack can not be, the war stalemate. When Xu Da visited the people, the wooden bucket used by the people was inspired. He ordered the wooden bucket transformed into a long drum with two sides closed, placed his weapons in the drum, and disguised himself as a Shehuo artist into the city during the Lantern Festival, and finally took over the ancient city of Lanzhou. In order to celebrate disarming the army and living in peace and contentment, this long drum was named "Taiping Drum". Although it is only a legend, it can be seen from this that since ancient times, ordinary people have longed for a peaceful life. Lanzhou is connected with four regions and has been a battleground for military forces since ancient times. Frequent wars have brought heavy suffering to the people of Lanzhou. "A monkey horse on a golden saddle, and he returned to Gaolan. The cock wind is slightly urgent, the Great Wall water is cold." It is a tribute to the bravery of the frontier soldiers and a true description of the plight of ordinary people. "The Yellow River is far above the white clouds, and there is a lonely city. Qiang flute why blame the willow, the spring breeze does not degree Yumenguan." It is to describe the magnificent vastness and loneliness of the frontier, and it is also to lament for the garrison soldiers. The people of Lanzhou have lived in this land of war and chaos for generations, and they are full of longing for a stable and peaceful life. They put this desire in the performance of the folk Taiping drum, with the drum to express aspirations, with the dance lyric, not only to show the world the northwest men to ride the field of heroic physique, but also to express the people's yearning for a peaceful life.

Therefore, Lanzhou Taiping Drum is not only a folk dance culture, but also the carrier of northwest culture and history. It has witnessed the historical development of the northwest in a unique way, carrying the hopes and hopes of the people in the northwest. Several years later, even if The Times are far away, our descendants can still understand the national history and culture in the inheritance and development of Taiping drum, experience the lasting charm of Taiping drum, and cherish this hard-won stable life.

### II. B. Cultural value: integration of locality and nationality

Lanzhou Taiping Drum, as a unique form of intangible cultural heritage, carries profound local cultural connotation and occupies an important position in the cultural inheritance of the Chinese nation. First of all, Taiping Drum embodies the distinctive regional cultural characteristics of Lanzhou. Its drumming rhythm integrates the musical elements of the Yellow River basin, which is vigorous and powerful, highlighting the unique roughness and heroism of the northwest land; The movements in the performance are integrated into the strong folk customs of the northwest, through the combination of dance, rhythm and performance, the unique charm of local culture is vividly displayed, and it is a concentrated reflection of the cultural symbols of Lanzhou. Secondly, Taiping drum is not only an art form, but also a symbol of community cohesion. Taiping drum performance is often carried out as a community unit, with a strong ritual and collective. In festival activities, Taiping drum is not only an important medium for celebration and blessing, but also enhances the cultural identity and sense of belonging of local residents through performance and interaction. This shared cultural engagement makes Taiping Drum an important link to the community and deeply integrated into local social life.

In addition, Taiping drum, as an important branch of Chinese traditional drum culture, fully demonstrates the artistry and diversity of Chinese traditional culture. It organically combines music, dance and folk activities, not only embodies the richness of traditional art forms, but also carries profound cultural memory and historical value, and becomes an important carrier of the cultural inheritance of the Chinese nation. In contemporary times, the significance of the Taiping drum is not limited to its traditional properties. Through the innovation of artistic expression forms, it has gradually integrated into the modern social and cultural context, and has been used as an important tool to carry forward the national spirit and transmit cultural values. At the same time, the application of

Taiping drum in local tourism and cultural industries has also injected new vitality into it. For example, Taiping drum performance is included in tourism cultural activities and local festivals, which not only enhances the attraction of local cultural tourism, but also promotes the development and utilization of cultural resources, so that its traditional cultural value is continued and regenerated in the new era. Thus, Lanzhou Taiping Drum has become an important cultural bridge connecting tradition and modernity, local and national, and its significance has long gone beyond a simple art form, becoming a vivid symbol of the diversity and vitality of Chinese culture.

### III. Protection status of Lanzhou Taiping Drum

#### III. A. *Government-led protection and policy support*

As an intangible cultural heritage, the protection of Lanzhou Taiping Drum mainly relies on the leadership of local governments to promote the inheritance and development of intangible cultural heritage through policy support and the implementation of special projects. First of all, Lanzhou Taiping Drum was included in the intangible Cultural Heritage list of Gansu Province. The establishment of this official status provided policy and financial support for it, and also established legal guarantee for its protection and inheritance, becoming an important basis for promoting the protection of intangible cultural heritage. At the same time, the local government has also set up special funds to focus on Taiping drum performance activities, the training of inheritors and the organization of related cultural activities. Through the holding of special activities such as "non-genetic inheritance exhibition", not only enhance the publicity of Lanzhou Taiping Drum in the public, but also further promote the popularization and dissemination of intangible cultural heritage. In addition, traditional festival activities have also become an important display and communication platform for Taiping drum. Every year, Lanzhou organizes special performances of Taiping drum during the Lantern Festival, Spring Festival and other festivals to promote this traditional culture to a wider audience with the help of the festive atmosphere. These festivals not only provided a fixed stage for the performance of Taiping Drum, but also attracted more young people to participate and watch, injecting new vitality and vitality into the living inheritance of intangible cultural heritage. Through the active promotion of the government, the protection of Lanzhou Taiping Drum has received more comprehensive support in terms of policy, funding and activity organization, laying a solid foundation for its long-term development.

#### III. B. *Promotion and challenge of inheritor system*

Inheritors are the core force of intangible cultural heritage protection, and the inheritance of Lanzhou Taiping Drum still mainly relies on the traditional way of "oral instruction". However, this mode of inheritance faces many challenges and limitations in the current social environment. First of all, the identification and training of inheritors provide a certain guarantee for the protection of skills and cultural transmission. At present, the representative inheritors of Lanzhou Taiping Drum have been recognized as provincial or municipal non-genetic inheritors, who have played a vital role in preserving traditional skills and transmitting cultural values. However, the number of inheritors is limited and most of them are old people, facing a serious problem of lack of successors. The waning interest of the younger generation in traditional skills, coupled with the fast pace of modern life, many people lack enough time and patience to learn the skills of Lanzhou Taiping Drum, which further exacerbates the non-hereditary generational fault. In addition, the lack of economic incentives is also a major problem in the succession work. Due to limited performance opportunities and low income, some inheritors cannot maintain the inheritance of Taiping drum skills as their main occupation, which makes them lack of motivation in inheritance work, and directly affects the sustainable development of intangible cultural heritage skills. Therefore, although inheritors, as the core role of intangible cultural heritage protection, play a key role in promoting the inheritance of skills, the limitations of their inheritance methods and realistic environment are still important issues that need to be solved in the protection of Lanzhou Taiping Drum.

#### III. C. *Lack of digitalization and modernization protection*

Although digital technology is increasingly playing an important role in the protection of intangible heritage, the digital protection of Lanzhou Taiping Drum is still in the initial stage and there are many deficiencies. First of all, the lag of digital records limits the in-depth development of their protection. At present, the recording and preservation of Lanzhou Taiping Drum mainly rely on paper archives or scattered video materials, and lack of systematic digital archive construction. Modern technologies such as high-quality image data, 3D modeling and interactive display have not been fully applied, which makes it difficult to preserve and display its expression forms and cultural connotations comprehensively and accurately. Secondly, its communication means are relatively simple, mainly relying on offline performance forms, and it is difficult to break through regional restrictions for more extensive promotion. In contrast, the use of modern communication tools such as social media and short video platforms has not been effectively developed, which is out of step with the communication habits favored by contemporary young

people, resulting in limited dissemination and influence. In addition, the lack of technical resources is also a major bottleneck in the current digital protection work. Local intangible cultural heritage protection departments are limited in technology investment and lack in-depth cooperation with technology enterprises or universities, resulting in obvious deficiencies in digital protection, communication means innovation and technical support. These problems make Lanzhou Taiping Drum has not yet formed a mature system in the field of digital protection, and it is urgent to promote its digital process by strengthening resource investment and technical support to achieve more effective protection and dissemination of intangible cultural heritage.

## IV. New path of digital intangible cultural heritage protection and cultural ecological reconstruction

### IV. A. Digital technology enables non-genetic inheritance

#### IV. A. 1) Digital record and archive construction: Constructing permanent memory of intangible cultural heritage

The rapid development of digital technology has opened up a new path for the recording and preservation of intangible cultural heritage, enabling intangible cultural heritage to be comprehensively and systematically preserved through multi-dimensional forms, and establishing a digital archive system with permanent and dynamic updating characteristics. First of all, high-definition imaging and 3D modeling technology provide technical support for accurate recording of intangible cultural heritage. Through high-definition photography, video capture and 3D modeling technology, the performance process, production skills and musical instrument details of Lanzhou Taiping Drum can be recorded with high precision. This can not only preserve the original characteristics of its physical form, but also provide important technical support for subsequent inheritance, research and reproduction, and ensure that intangible cultural heritage techniques can be permanently preserved in digital form. Secondly, multi-dimensional cultural records further expand the depth and breadth of intangible heritage preservation. Through sound acquisition technology, the rhythm and sound effects of Taiping drum performance are accurately recorded, and its cultural background, historical origin and folk value are described in detail by combining words and pictures, so as to fully restore its rich cultural connotation. This multi-sensory and multi-media recording method not only makes the expression forms of intangible cultural heritage more diverse, but also can better show its deep historical and social significance.

The development of digital technology provides a new way for the comprehensive recording and systematic preservation of intangible cultural heritage. Through high-definition image, sound acquisition and 3D modeling technology, multi-dimensional recording of intangible cultural heritage projects can be achieved. For example, for Lanzhou Taiping Drum, its performance rhythm characteristics, dance movements and the form of objects can be accurately collected and preserved by the following technical means:

High-definition video and sound capture: Use high-resolution cameras and audio capture equipment to record performers' movements and drum beats. The frequency spectrum after sound acquisition can be analyzed by Fourier transform formula:

$$X(f) = \int_{-\infty}^{\infty} x(t) e^{-j2\pi f t} dt \quad (1)$$

The formula converts the time domain signal into the frequency domain signal and is used to extract the rhythm pattern of the Taiping drum.

3D modeling technology: Through 3D scanning equipment or image modeling algorithm, the shape and details of the Taiping drum are reconstructed. In the modeling process, the representation of polygonal mesh is often used, where the surface fitting formula is:

$$S(x, y, z) = \sum_{i=1}^n a_i \phi_i(x, y, z) \quad (2)$$

Here  $a_i$  is the fitting parameter and  $\phi_i$  is the basis function.

Through these technologies, a dynamically updated digital archive system can be built to integrate intangible historical data, performance details and cultural background to form a permanent memory.

#### IV. A. 2) Application of digital communication platform: expand the influence and coverage of intangible cultural heritage

The rapid development of digital technology has broken the inherent limitations of the inheritance of intangible cultural heritage in time and space. Through digital communication platforms, intangible cultural heritage has been able to reach a wider and diverse audience, especially among the younger generation. The rise of short videos and social media has provided an efficient and accurate way for the dissemination of intangible cultural heritage. Through platforms such as Douyin, Kuaishou and Station B, the performance clips of Lanzhou Taiping Drum can be released in the form of short videos. This lightweight communication method not only lowers the threshold for

the public to understand intangible cultural heritage, but also makes use of the high communication efficiency and algorithm recommendation function of social platforms to accurately push relevant content to users who are interested in intangible cultural heritage, thus significantly expanding its dissemination scope. Compared with the limitations of traditional offline communication, this algorithm-driven digital communication model not only enhances the exposure of intangible cultural heritage, but also promotes in-depth interaction with the younger generation.

In addition, the online exhibition and live broadcast have further broadened the communication channel of Lanzhou Taiping Drum, providing a more diversified and immersive experience form for the display of its cultural value. Through the online exhibition, the audience can intuitively understand the historical origin, production process and performance skills of Lanzhou Taiping Drum in the virtual exhibition hall, while the live performance enhances the audience's sense of participation and involvement through real-time interactive forms. This combination of online and offline communication not only breaks the geographical and time constraints, but also infuses modern audio-visual elements into the dissemination of Taiping Drum, making its cultural connotation more widely accepted and recognized in the digital space.

#### IV. A. 3) Introduction of immersive technology: enhance the public's sense of cultural experience

Immersive technologies such as virtual reality (VR) and augmented reality (AR) have opened up new possibilities for the dissemination and experience of intangible cultural heritage, and narrowed the distance between the public and traditional culture in a more interactive and participatory way, so that intangible cultural heritage projects have a new vitality in modern society. First, immersive cultural experience is one of the core advantages of this technology application. Through VR technology, the festival scene of Lanzhou Taiping Drum can be highly restored, placing the audience in the virtual environment, participating in the performance with the "first perspective", and personally feeling the shocking rhythm of the drum and the lively atmosphere of the festival celebration. This immersive cultural experience not only allows the audience to have a more intuitive feeling of the artistic expression of Taiping drum, but also further stimulates the public's emotional identification and interest in the cultural connotation of Taiping Drum, greatly enhancing the attraction and communication effect of intangible cultural heritage. Secondly, AR technology provides innovative forms for interactive experience and skill dissemination of Taiping drum through augmented reality. Users can scan the relevant logo of Taiping drum through mobile devices, watch the production skills or performance rhythm demonstrated by 3D modeling in real time, and interact with the digitally presented Taiping drum in real time with the help of virtual interactive functions to learn basic playing skills. This kind of augmented reality interaction with technology as a bridge not only makes traditional skills more palpable, but also effectively lowers the threshold of intangible cultural transmission and learning, providing the public, especially the young generation, with an intuitive, vivid and interesting way of cultural contact.

#### IV. A. 4) Data analysis and intelligent assistance: Promote the scientific management of non-genetic inheritance

The rapid development of big data and artificial intelligence technology has provided scientific and precise auxiliary tools for the protection and inheritance of intangible cultural heritage, making the protection and dissemination of traditional culture enter a more efficient and intelligent stage. First of all, in terms of the analysis of the communication effect of intangible cultural heritage, big data technology can provide accurate basis for the optimization of communication strategies by tracking the communication data of Lanzhou Taiping Drum related content on social media platforms, including the number of viewers, interaction rate and audience portraits. For example, through the analysis of user preferences in different age groups and geographical distribution, the core audience groups in Taiping Drum communication can be accurately identified, and the form and time of promotion content can be further adjusted, thus significantly improving the communication effect and public participation of intangible cultural heritage.

Big data technology plays a core role in the dissemination and audience analysis of intangible cultural heritage. The digital communication effect of Lanzhou Taiping Drum can be evaluated through big data analysis of social media user interaction behavior, including click rate, play volume and comment sentiment. Its core goal is to accurately identify audience groups and optimize communication strategies. Common data analysis methods include:

Audience portrait analysis: The audience is classified by clustering algorithm, such as user group classification based on interest and interactive behavior, using K-means algorithm:

$$J = \sum_{i=1}^k \sum_{j=1}^n ||x_j^{(i)} - \mu_i||^2 \quad (3)$$

where  $x_j^{(i)}$  denotes the  $j$ th data point in the  $i$ th cluster and  $\mu_i$  is the center point of the cluster.



#### **IV. B. Path of cultural ecological reconstruction**

##### **IV. B. 1) Build a multi-subject collaborative intangible cultural heritage protection system**

The reconstruction of cultural ecology requires the concerted participation of all forces, and through the joint efforts of the government, academic institutions, enterprises and communities, the comprehensive protection and sustainable development of intangible cultural heritage can be realized. First of all, the government plays a leading role in the protection of intangible cultural heritage and promotes the optimization of cultural ecology through policy support and resource allocation. The formulation of a more comprehensive intangible cultural heritage protection policy and the improvement of the legal framework for the ecological protection of intangible cultural heritage can provide institutional guarantee for the inheritance of intangible cultural heritage projects such as Lanzhou Taiping Drum. At the same time, the government should set up special funds to give priority to supporting intangible cultural heritage digital protection projects, including Lanzhou Taiping Drum, to enhance their communication in modern society. In addition, by promoting intangible cultural heritage into campus activities and conveying the historical value and cultural significance of intangible cultural heritage to young people, it can not only enhance the cultural identity of the young generation, but also cultivate the reserve force for non-genetic inheritance.

Secondly, the deep participation of academic institutions provides theoretical basis and academic support for the reconstruction of cultural ecology. Through interdisciplinary research and the combination of cultural anthropology, digital technology and sociology, the interactive relationship between non-genetic inheritance and cultural ecology can be more comprehensively analyzed, and scientific theoretical guidance can be provided for the protection of intangible cultural heritage. In the case of Lanzhou Taiping Drum, academic institutions can dig deeper into its cultural value through historical document research and field investigation, provide solid theoretical support for its digital protection, and further promote the innovation and practice of cultural protection.

##### **IV. B. 2) Innovate ways of intangible cultural heritage dissemination and activate cultural vitality**

The reconstruction of cultural ecology needs to break through the limitations of intangible cultural heritage in regional and communication modes through innovative communication methods, so as to make it glow with new vitality and attraction in diversified scenes. First of all, the innovative performance combining tradition and modernity has injected new vitality into the intangible cultural heritage. By integrating Lanzhou Taiping Drum into modern art performance, such as cross-border integration with pop music, modern dance and other art forms, it can not only improve the visual and auditory effects of the performance, but also attract the attention of more young audiences, so that the traditional culture is full of modern charm. At the same time, online and offline intangible cultural festival activities will be held to bring the lively atmosphere of the festival site to a wider audience with the help of the communication power of live broadcasting and social platforms, break the restrictions of time and space, and further expand the dissemination scope and influence of intangible cultural heritage. The popularity of short video platforms has created a new opportunity for the promotion of intangible cultural heritage, which can attract more young users' participation and attention through the production of interesting and compact rhythm of Lanzhou Taiping drum performance and teaching videos, combining content creativity and hot topics. In addition, the development of interactive games or applications with the theme of Taiping drum allows users to learn Taiping drum culture in entertainment through immersive experience, which not only enhances the interest and interaction of intangible cultural heritage dissemination, but also opens up a new way for cultural inheritance.

##### **IV. B. 3) Establish a sustainable cultural ecological protection mechanism**

The reconstruction of cultural ecology needs to take sustainable development as the core goal, and promote the long-term inheritance and innovative development of intangible cultural heritage through the dual path of protection and development. First of all, the establishment of a dynamic digital cultural ecosystem is an important basis for the realization of intangible cultural heritage protection and dissemination. By incorporating Lanzhou Taiping Drum into the digital intangible cultural ecosystem, building a dynamic database integrating historical data, skill display and inheritor information, and regularly updating the relevant content, it can ensure the long-term preservation and dissemination of intangible cultural heritage. At the same time, artificial intelligence technology was used to conduct real-time monitoring of cultural ecology, analyze the communication trend, audience feedback and social impact of Lanzhou Taiping Drum in different communication channels, and provide a scientific basis for the formulation of intangible cultural heritage protection strategies. This data-driven dynamic management model can not only optimize protection measures, but also improve the adaptability and dissemination effect of intangible cultural heritage in modern society.

Secondly, promoting the development of cultural industrialization is an important way to realize the integration of intangible cultural heritage protection and economic benefits. With Lanzhou Taiping Drum as the core, a series of cultural derivative products can be developed around its cultural connotation and artistic characteristics, such as

characteristic drum souvenirs, creative decorations and cultural tourism experience projects combining Taiping drum elements, and the deep integration of intangible cultural heritage and cultural tourism industry can be promoted through these diversified product forms. In addition, we will actively guide social capital to participate in the protection of intangible cultural heritage and provide financial support for intangible cultural heritage projects through market-based means. For example, sustainable economic impetus can be injected into the protection and inheritance of Lanzhou Taiping Drum through cultural funds, corporate sponsorship, etc., which not only expands the funding source of intangible cultural heritage projects, but also enhances its self-generating ability.

Finally, the establishment of a sound intangible cultural education system is an important guarantee to ensure the long-term inheritance of intangible cultural heritage. Lanzhou Taiping Drum is included in the education curriculum of local primary and secondary schools, and through traditional culture lectures and skills experience activities, students are cultivated from an early age to develop a sense of identity and interest in local culture, so that non-genetic seeds can be rooted in the young generation. At the same time, cooperation with universities to set up intangible cultural heritage research and practice courses, for the protection and inheritance of intangible cultural heritage training professionals, especially in the field of digital protection, cultural industry development and other interdisciplinary talents. This training mode combining education and practice can not only provide talent support for intangible cultural heritage protection, but also further promote the innovative development of intangible cultural heritage in contemporary society.

## V. Conclusion

The application of digital technology has injected new vitality into the protection and inheritance of intangible cultural heritage. Taking Lanzhou Taiping Drum as an example, digital recording, big data analysis and intelligent assistance not only continue the traditional skills, but also expand the boundaries of intangible cultural heritage dissemination. However, the preservation of intangible cultural heritage is not only a technological innovation, but also requires the multi-party collaboration of policy, academia and community to achieve sustainable cultural development. In the future, how to find a balance between technology and cultural authenticity is still an important topic for the protection of intangible cultural heritage.

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