

An Exploration of Cultural Programs Contributing to the Digital Conservation of Intangible Cultural Heritage

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Abstract: *This thesis discusses the significant role of cultural programs in the digital preservation of intangible cultural heritage. By analyzing various forms of expression, it elaborates on the specific contributions of cultural programs in enhancing the visibility of intangible cultural heritage, innovating digital recording and preservation methods, and integrating intangible cultural heritage with modern cultural industries. Additionally, it addresses the challenges faced by these programs in the digital preservation of intangible cultural heritage, such as insufficient audience engagement and dispersed resources, and proposes corresponding solution strategies. This study aims to provide theoretical references for promoting cultural programs to play a more active and effective role in the digital preservation of intangible cultural heritage.*

Keywords: *Cultural programs; Intangible cultural heritage; Digital conservation; Challenges and Strategies*

1. Introduction

In the context of global digitalization, the preservation and transmission of intangible cultural heritage face numerous opportunities and challenges. As a vital communication medium, cultural programs play a key role in the digital preservation of intangible cultural heritage. They have injected new vitality into the inheritance and development of intangible cultural heritage through diverse and innovative forms and methods. However, cultural programs have inevitably encountered a series of problems in this process. Conducting an in-depth study on the performance, contributions, challenges, and strategies of cultural programs in the digital preservation of intangible cultural heritage is of significant practical importance.

2. Digital Safeguarding of Intangible Cultural Heritage in Cultural Programs

The preservation of intangible cultural heritage can be explored in cultural programs through three forms: visual presentation, auditory presentation, and digital virtual reality display.

2.1. Visual Presentation of Digitized Intangible Cultural Heritage in Cultural Programs

In today's digital age, the visual presentation of intangible cultural heritage in cultural programs is becoming increasingly diverse. For example, high-definition documentaries highlight the beauty of intangible cultural heritage details. The program "Heritage on Fingertips" captures the subtleties of embroidery and ceramics with delicate shots, showcasing the texture of silk threads in embroidery and the changing glaze colors in ceramics. This visual presentation reveals these works' exquisite craftsmanship and unique charm, allowing the audience to appreciate details that are usually hard to notice and to gain a deeper understanding of the value of intangible cultural heritage.

In addition, combining stage performances with multimedia effects can create a stunning visual feast. In the program "China's Intangible Cultural Heritage," live performances by inheritors and multimedia impact on the big screen complement each other, creating dream-like scenes. When displaying traditional operas, the background effects change with the singing and plot, enhancing the performance's emotional and visual impact and offering the audience a new aesthetic experience.

CCTV's 2021 program "China in the Classics" also demonstrates effective visual presentation. The

show selected outstanding Chinese intangible cultural heritage and texts as its core content. It used an integrated format of "cultural programs + drama + film and television + variety" to tell the story of the canon. Modern technology with immersive, interactive elements was incorporated to "restore" historical scenes^[1]. These visual presentation forms have undoubtedly injected new vitality into disseminating and inheriting intangible cultural heritage. They not only bring intangible cultural heritage into the public's view more vividly and intuitively but also provide the audience with rich visual enjoyment and a profound cultural experience.

2.2. The Use of Sound Elements in Digitising Intangible Cultural Heritage in Cultural Programs

The use of sound elements in cultural programs to digitally preserve intangible cultural heritage has also demonstrated diverse and innovative trends. As a crucial carrier of cultural heritage, sound elements play a key role in digital preservation.

One common approach is the creation of original national-style songs. For example, "Ancient Melodies in Modern Times," launched by Cool Dog Music, vividly narrates the story of protecting and inheriting intangible cultural heritage through simple lyrics and melodic tunes. This modern musical presentation successfully reintroduces intangible cultural heritage treasures to the public.

Additionally, digital music collections of musical instruments of intangible cultural heritage are notable highlights. For instance, "Ancient Music Chapter," the first digital music collection of heritage musical instruments issued by Kugou Music, features original hand-drawn illustrations of these instruments, combined with performances by renowned musicians and advanced digital technology. This allows collectors to experience the music of various instrumental versions immersively, providing a unique and rich audiovisual experience.

In a more cutting-edge exploration, the Shanghai Concert Hall organized the "Digital Muse - 2024 Music Technology Fusion Festival," which featured notable performances such as "The Past is the Future" and "The Future is the Past," both digitalized World Heritage "Nan Yin +" concerts. The Quanzhou band "Point of Water Nan Music" delves deeply into the essence of ancient Nan Yin music, creatively combining traditional elements with modern technology. They preserve the original flavor of Nan Yin while incorporating synthesizers and other contemporary musical instruments. Advanced sound technology breathes new life into the ancient Nan Yin, producing a highly innovative expression of this musical heritage.

Additionally, Tencent Game's "Digital Conservation of Traditional Chinese Instrumental Music" project exemplifies another innovative approach. This project sampled the Ming Dynasty guqin "Qiu Lai," generating high-quality sound samples through precise processing and algorithmic synthesis. These samples correspond to various playing techniques, perfectly reproducing the guqin's unique sound and subtle techniques in the digital realm. This achievement is widely utilized across different fields. For instance, the theme song "Ancient and Modern Qin," created in collaboration with QQ Music, showcases the beauty of the guqin. It is also featured in the game "Moonlight Blade," enhancing its environment with an ancient ambiance. Furthermore, a dedicated space for the guqin's digital audio experience has been established, allowing more people to appreciate the guqin's charm firsthand.

The innovative use of sound elements in cultural programs offers greater flexibility compared to visual presentations. This approach allows cultural elements to be integrated into various aspects of daily life, paving new pathways for the inheritance and development of intangible cultural heritage. Additionally, it provides fresh insights into effective strategies for preserving and passing on this heritage.

2.3. Virtual Reality Presentation of Digital Intangible Cultural Heritage in Cultural Programs

Digital virtual reality presentations of intangible cultural heritage in cultural programs are increasingly diverse. One common and effective strategy is to build immersive scenarios that place the audience directly in the moment. For instance, CCTV's "Intangible Cultural Heritage Open Class" program employs virtual reality technology to recreate an ancient folk opera stage. This allows viewers to experience the bustling theatre environment as if they were actually present, providing a close-up view of the actors' performances and a genuine sense of the opera's unique charm. This immersive experience not only showcases the performance aspects of intangible heritage but also fosters a strong cultural atmosphere, deepening the audience's understanding and appreciation of the intangible cultural heritage.

Incorporating interactive elements into the display process, breaking through spatial limitations, and enhancing the audience's sense of participation are also key strategies. For instance, in the Henan "Spring

Festival Gala," the program "Henan Museum Lantern Festival Wonderful Night" featured the "Taijiquan: Doing Star Shift" segment. This performance took place directly at the Dengfeng Stargazer Terrace, moving beyond the confines of a studio stage. Aerial footage reveals three distinct areas, with numerous performers from the Dengfeng Shaolin Tagou Wushu School. AR technology and live-action integration, combined with later-added star track effects, create a fusion of real and virtual elements, resulting in a visually spectacular and immersive atmosphere. [2]

The use of virtual reality for storytelling, thereby eliciting emotional resonance from viewers, proves highly effective. For example, CCTV's "The Power of Inheritance" program uses virtual reality to narrate the story of an intangible cultural heritage inheritor's perseverance and dedication. By immersing the audience in the virtual scene, viewers follow the plot's development and gain a profound appreciation for the inheritor's struggles and determination. This approach fosters a deeper understanding of the significance of preserving intangible cultural heritage and heightens the audience's sense of responsibility for its protection.

These innovative practices demonstrate that diverse methods and strategies can significantly enhance the effectiveness and impact of digital virtual reality presentations of intangible cultural heritage. This approach creates expansive opportunities for the inheritance and development of such heritage.

3. Contribution of Cultural Programs to the Digital Safeguarding of Intangible Cultural Heritage

Cultural programs have significantly contributed to the preservation of intangible cultural heritage in several key ways, which can be explored through the following three aspects:

A. Raising Visibility and Societal Attention: Cultural programs have increased the visibility of intangible heritage and heightened societal awareness.

B. Innovating Digital Recording and Preservation Methods: Cultural programs have introduced innovative digital recording and preservation techniques.

C. Promoting Integration with Modern Cultural Industries: Cultural programs have facilitated the integration of intangible heritage with contemporary cultural industries.

3.1. Enhancing the Visibility and Social Attention of Intangible Cultural Heritage

Currently, the development of intangible cultural heritage faces many challenges, and cultural programs showcase its charm in a unique way, stimulating the interest and curiosity of the audience. As Marshall McLuhan's theory of "the medium is the message" suggests, programs can serve as a medium of communication to convey the value of intangible cultural heritage. The CCTV program "Intangible Cultural Heritage Open Class" delves into various intangible cultural heritage projects, providing viewers with a window into these previously unfamiliar aspects and bringing them into the public eye.

American communication scholar Walter Lippmann's theory of the "mimetic environment" indicates that the information environment created by mass communication influences people's perception of the real world. Cultural programs create a "mimetic environment" for intangible cultural heritage, allowing the audience to subconsciously absorb its culture, thereby increasing their attention to and awareness of intangible cultural heritage.

At the same time, interactive elements in cultural programs have transformed the audience's role from passive recipients to active participants in displaying and transmitting intangible cultural heritage. This participatory experience enhances the audience's understanding and appreciation of intangible cultural heritage, encouraging them to promote and disseminate it actively.

Additionally, cultural programs can spark public discussions on intangible heritage topics, leading to widespread effects on social media and other platforms. The vigorous debate and interest surrounding intangible heritage contribute to forming a collective consciousness and a shared commitment to its preservation and protection.

3.2. Innovative Digital Recording and Preservation

In the "Opinions on Strengthening the Protection of Intangible Cultural Heritage in China," issued by the General Office of the State Council of the People's Republic of China on March 26, 2005, it is clearly stated that intangible cultural heritage should be recorded in an authentic, systematic, and comprehensive

manner using various means, such as written text, audio recordings, video recordings, and digitized multimedia, and that archives and databases should be established. Therefore, in the current new media environment, including radio, television, and online platforms, utilizing new communication methods and technologies—particularly video digital technology—is crucial for protecting intangible cultural heritage more effectively. This approach allows ancient folk arts, which are at risk of being lost, to regain their prominence and enables the innovation and upgrading of various traditional art forms.^[3] It represents an inevitable choice for advancing the protection, inheritance, and development of intangible cultural heritage.

For example, the documentary "Masters in Forbidden City" employs 4K high-definition photography, three-dimensional modeling, virtual reality, and other advanced technologies to accurately capture the subtle movements and changes in restoring cultural relics. It presents the original state of the relics before damage as well as their restored appearance, allowing the audience to witness the meticulous skills of relic restorers and their focused dedication as if they were present.

This type of digital recording and preservation is of significant importance. On the one hand, it transforms the traditionally tedious and specialized process of relic restoration into a compelling narrative, capturing the interest of a broad audience, particularly younger generations. It challenges stereotypical views of traditional culture, making intangible cultural heritage more accessible. On the other hand, these digitized materials serve as valuable references for future generations studying and continuing the art of heritage restoration. Every shot and explanation in the program contributes to a digital treasury of intangible cultural heritage, satisfying viewers' entertainment needs while subtly conveying the value and significance of intangible cultural heritage and enhancing the public's sense of responsibility for its protection and preservation.

3.3. Promoting the Integration of Intangible Cultural Heritage with Modern Cultural Industries

Cultural programs are crucial in promoting the integration of intangible cultural heritage with modern cultural industries in an era of cultural pluralism. Through thoughtful planning and production, these programs vividly and intuitively showcase the unique charm and value of intangible cultural heritage. For instance, programs like "Extraordinary Ingenuity" invite celebrity guests to engage with intangible cultural heritage techniques personally, generating significant interest and attention from viewers. This broad dissemination raises awareness of intangible cultural heritage, laying a cognitive foundation for its integration with contemporary cultural industries.

Cultural programs encourage the incorporation of intangible cultural heritage elements into modern and creative products. These programs skillfully integrate traditional motifs, craftsmanship, and cultural connotations of intangible heritage into contemporary designs, resulting in products with unique cultural values. For example, certain programs showcase how traditional embroidery techniques are applied to modern fashionable clothing. This approach preserves the essence of intangible cultural heritage while imbuing the products with new aesthetic value, expanding the cultural consumption market.

For example, the program "Charming City of China" promotes the local cultural tourism industry by showcasing the intangible cultural heritage characteristics of various places, attracting tourists to experience these heritage projects, and driving the growth of the related economy. In analyzing how to protect China's intangible cultural heritage, such as white water tofu culture, scholars have proposed measures to integrate this culture with industry, including holding cultural fairs, exhibitions, and other branding activities to create a platform for showcasing the heritage^[3].

Additionally, cultural programs have fostered the public's emotional identification with intangible cultural heritage and influenced their consumption habits. As viewers enjoy these programs, they gradually develop a love and respect for intangible cultural heritage, becoming more willing to purchase related products and services. This growth in consumer demand further promotes the deep integration of intangible cultural heritage with modern cultural industries, injecting new vitality into the inheritance and development of intangible cultural heritage and enriching the connotation and form of contemporary cultural industries.

4. Challenges and Solution Strategies for Cultural programs in the Digital Preservation of Intangible Cultural Heritage

Cultural programs are also facing several problems and challenges in the digital preservation of intangible cultural heritage, which can be explored in the following two aspects:

- A. The difficulties of insufficient participation and the need for enhanced interaction
- B. The disadvantages of dispersed resources and the integration and optimization of preservation plans

4.1. Difficulties of Insufficient Participation and the Potential for Increased Interaction

Cultural programs need to enhance further audience engagement in the digital preservation of intangible cultural heritage. While many cultural programs have set good examples, most still need to focus more on the one-way transmission of knowledge. They often present content in a monotonous format that lacks interest and interactivity, making it difficult to attract active participation from the audience. For instance, specific intangible cultural heritage programs, primarily in lecture form, feature experts explaining on stage while the audience passively accepts the information, resulting in low enthusiasm for participation.

Additionally, communication channels between the programs and the audience are often not smooth enough, preventing timely feedback and handling of audience opinions and suggestions, thus affecting their motivation to participate. Communication scholar Wilbur Schramm proposed the concepts of decoder and encoder in the mass communication model, where the encoder encodes the communication message by systematically combining the story or message through images, sounds, colors, etc., and the decoder translates this encoding to conclude the message. Improving this communication process is essential for increasing audience engagement in cultural programs^[4].

To address this issue, it is essential to enhance the diversity and innovation of program content. Storytelling and gamification can make intangible cultural heritage knowledge more vivid and engaging. Utilizing new media platforms to build interactive communities and encourage audiences to share their stories and experiences with intangible cultural heritage can foster a deeper connection. Organizing offline intangible cultural heritage experience activities, such as workshops and exhibitions, allows visitors to experience the charm of intangible cultural heritage firsthand.

Interactive elements, such as voting, quizzes, and lucky draws, can be incorporated during program broadcasts to increase audience participation. Establishing an incentive mechanism for audience engagement by offering rewards such as certificates of honor and intangible cultural heritage souvenirs can motivate active participation. This approach transforms the audience's role from being decoders to becoming encoders and disseminators, creating a collaborative environment that enhances both the entertainment value and the cultural significance of the programs.

4.2. Fragmentation of Resources and Integration and Optimization

Cultural programs face the challenge of resource fragmentation in the digital preservation of intangible cultural heritage. Programs from different regions and platforms often collaborate, needing more effective resource integration and synergy. Various local stations and online platforms tend to duplicate the approaches of significant media, leading to redundancy in content, resource wastage, and difficulty achieving significant scale and impact. Additionally, the human, material, and technical resources involved in the production process are not fully or efficiently deployed, affecting the programs' quality and efficiency.

To address this challenge, a unified resource coordination platform is needed. This platform, led by relevant departments or industry associations, should integrate intangible cultural heritage resources, program production teams, and communication channels across various locations for information sharing and optimal resource allocation. Cross-platform cooperation should be strengthened, promoting linkages between TV stations, online platforms, and social media to form a cohesive communication synergy.

Optimizing the program production process is also crucial. Each segment should clearly define labor responsibilities and divisions to improve resource utilization efficiency. Encouraging the participation of social capital and introducing a market-based mechanism can provide the necessary financial support and innovative impetus for program production. Addressing these issues can significantly enhance the digital preservation of intangible cultural heritage.

5. Conclusions

Cultural programs have played a crucial role in the digital preservation of intangible cultural heritage,

significantly contributing to enhancing its visibility, innovating recording and preservation methods, and promoting industrial integration through various innovative forms of expression. However, challenges such as insufficient audience participation and resource fragmentation remain. By adopting strategies like enhanced interaction and resource integration and optimization, these issues can be effectively addressed, further improving the effectiveness of cultural programs in preserving intangible cultural heritage digitally. It is anticipated that cultural programs will continue to innovate and improve, creating more favorable conditions for the protection and inheritance of intangible cultural heritage and allowing these precious cultural treasures to thrive in the digital age.

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