



Article

An Innovative Application of Integrating Transmedia Storytelling and Digital Technologies into Local Culture in China

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Abstract

The study explores the innovative use of technology to enhance the dissemination of local cultures in China. Through content analysis, comparative analysis, and case studies, the research examined transmedia storytelling practices integrated into cultural communication. Findings confirm that digital technologies significantly expand opportunities for promoting and preserving cultural heritage. The use of virtual and augmented reality (Tencent, Youku, Baidu, Nreal Glasses), multimedia platforms, interactive content, and social media (WeChat, Douyin, Xiaohongshu) has deepened the understanding of cultural values and traditions. Virtual museums (Tencent, Youku), gaming technologies (GuJian, Journey to the West Online), and transmedia storytelling created new interaction formats, heightened emotional engagement, and made cultural content more accessible globally. Social media platforms played a vital role in disseminating cultural narratives across generations, particularly among youth, who engaged actively with personalized digital tools. Interactive applications (Tencent Mini Programs, Alipay Mini Games) further contributed to contextual cultural learning. The results demonstrate a notable rise in cultural awareness and increased interest in regional traditions, reinforcing preservation and development within the modern digital environment. Importantly, digital transformation facilitates access to cultural heritage for audiences of diverse cultural and linguistic backgrounds, thereby strengthening international dialogue. The study recommends further integrating transmedia storytelling as an effective tool for safeguarding cultural heritage and broadening opportunities for intercultural communication. Overall, the research highlights how innovative technological applications support both local cultural continuity and global cultural exchange, ensuring that traditions remain vibrant and relevant in the digital era.

Keywords: globalization, heritage preservation, interactive strategies, international exchange, modern communications

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Introduction

Scholars working in cultural communication and digital technologies face several important challenges. One of the main limitations is technical limitations, as the development and implementation of the latest digital technologies, such as virtual and augmented reality, require significant resources and a high level of technical knowledge, which limits the availability of such tools for a wide range of researchers. In addition, cultural barriers are important, as integrating traditional culture with new digital formats can lead to the distortion of cultural elements or their loss due to insufficient consideration of the specifics of local culture and its adaptation to modern technologies. The lack of common international standards for using transmedia storytelling and digital technologies to preserve cultural heritage makes comparing and integrating research results difficult.

Jing (2024) worked on developing traditional Chinese cultural programs in the new era, based on the example of the Chinese Festivals series from Henan TV. He analyzed the use of symbolic elements of culture and innovative technologies that contributed to the intensification of viewer engagement and the establishment of media rituals in the cultural and communication environment. The study showed how the program created a multidimensional cross-media ecosystem, expanding the “world of history” boundaries and forming a harmonious cultural community. It also highlighted the problem of “*aesthetic fatigue*”, which was addressed by combining artistic and technological approaches. The paper emphasized the importance of integrating culture, aesthetics, and economic potential in the modern media. Tazhiyev (2021) studied the role of digital technologies in accelerating regional digital transformation and developing inclusive strategies for sustainable development in Central Asia. The paper also examines the use of transmedia approaches and cross-sectoral solutions for developing digital culture, promoting the effective use of digital technologies in local contexts through integration between government and civil society initiatives.

The role of cultural heritage in developing culturally sustainable communities was defined by Song et al. (2023), focusing on the importance of preserving cultural identities and social integration. This paper examines how transmedia storytelling techniques can help engage the public in preserving and transmitting cultural values. The impact of innovations in digital technologies on the development of local culture in China through the integration of transmedia storytelling was studied by Zhang and Chen (2024). They analyzed examples of digital solutions in cultural projects and studied how these innovations contribute to preserving cultural heritage and audience engagement. They considered optimizing the management of cultural initiatives, the

role of digital infrastructure, and the importance of interactive content in creating new forms of cultural experience. The researchers also analyzed the challenges associated with the insufficient level of digital transformation in specific regions and proposed solutions that would help to use technology more effectively to promote local culture.

The use of transmedia storytelling as a tool for cultural exchange and the development of digital literacy in intercultural communication was studied by Gilardi and Lam (2021). They paid special attention to analyzing the choice of cases from different countries and the challenges of adapting these examples to different cultural contexts. As a result, they proposed practical solutions for integrating transmedia technologies into local cultural practices, which can become the basis for an innovative approach to preserving and developing China's cultural heritage through digital platforms.

Zhang and Qiao (2024) worked on the study of the integration of transmedia storytelling to create a non-conformist cultural product in the modern media space of mainland China. The article by Mambetomorov and Almasbekova (2020) examined the new economy's development patterns, establishing the relationship between the digital economy and the new economy as a 'form of form'. They substantiated the formation of the digital economy as a form of manifestation of the evolution of the new economy. These works illustrate how a transmedia approach can contribute to creating cultural products that combine innovations in digital technologies with local socio-cultural and political conditions.

Scholars' research on integrating transmedia storytelling and digital technologies has covered various issues aimed at preserving and developing cultural heritage in the digital age. In their works, they analyzed the following aspects: the development of cultural programs in the digital age; digital technologies as a tool for cultural transformation; preservation of cultural heritage and social inclusion; the impact of digital solutions on cultural experience; integration of art and technology; and intercultural communication. Based on the reviewed literature, this study formulates the following research objectives:

- To analyze the current state of transmedia storytelling and its role in cultural communication.
- To study the possibilities and applications of digital technologies (virtual reality, augmented reality, modelling, etc.) for cultural communication and determine the principles of integrating transmedia storytelling and digital technologies into Chinese local culture.
- To evaluate the effectiveness of new approaches in cultural communication and their impact on the global audience.

- To develop international recommendations for preserving and promoting local culture through digital technologies that may be useful for other countries, including Kyrgyzstan.

Methodology

The research was conducted in several stages, including specific analysis methods and approaches to studying the impact of digital technologies and transmedia storytelling on promoting local Chinese culture. Initially, we analyzed the modern technologies used to create, adapt, and distribute cultural content. Particular attention was paid to artificial intelligence, virtual and augmented reality technologies, and big data. The researchers studied artificial intelligence algorithms for processing multimedia content, machine learning systems for audience personalization, and big data analysis tools that allowed them to determine user preferences.

In addition, interactive VR (virtual reality) and AR (augmented reality) platforms were studied, which were used for digital reconstructions of cultural heritage and mobile applications with AR functions for real-time interaction with cultural content. These technologies played a key role in creating a deep immersion in the cultural context, allowing users to interact with artefacts, architectural monuments, and historical events through virtual spaces. A study of platforms such as iQIYI VR, Tencent VR, and Xreal AR Glasses has allowed them to assess their effectiveness in reproducing cultural heritage, their impact on audience engagement, and the formation of new ways of perceiving history and traditions.

Google Analytics, Meta Pixel, and Hotjar were used to identify user interaction patterns with digital platforms. Google Analytics was used to collect statistics on user behavior, including time spent on the platform, navigation paths, and engagement levels. Hotjar helped to capture heat maps of clicks and mouse movements, which helped to identify the most attractive interface elements. Meta Pixel allowed tracking the effectiveness of interactive social media campaigns. Additionally, a user survey was conducted on SurveyMonkey, Typeform, and WeChat Mini Programs to collect direct feedback from the audience on their perception of integrated digital technologies. The sample comprised 1500 respondents aged 18 to 45, including 52% women, 46% men, and 2% other gender identities. The respondents were divided by social status: 30% – students, 50% – working professionals, 10% – entrepreneurs, and 10% – other population categories.

The survey included questions to investigate the frequency of consumption of digital cultural content, the influence of recommendations, and the popularity of various platforms. For example, respondents were asked to indicate how often they watch videos, articles, and interactive projects and what factors (friends' recommendations, content quality, exclusive access, etc.) influence their willingness to support digital projects through donations, subscriptions, or purchases. The main goal of the survey was to identify the behavioral characteristics and preferences of the

audience, which helped to identify the key factors of engagement. To process the results, we used descriptive statistics to calculate confidence intervals for the main categories of answers. The statistical error was $\pm 2.5\%$, which ensured sufficient accuracy to interpret general trends.

Data was collected on user interaction with digital cultural content on various platforms. The *"People's Culture Cloud"*, a digital cultural platform of Henan Province that has played a key role in preserving and promoting the cultural heritage of the Central Plains, was analyzed. An immersive scenario tour implemented by Huayi (Luoyang) Culture & Tourism Development Co., Ltd. was analyzed. The project *"Henan's Unique Country, Drama"*, which promoted cultural heritage through theatre performances, was also studied. The analysis revealed the effectiveness of transmedia formats: interactive applications, VR/AR technologies (Baidu VR, Nreal AR Glasses), and social networks (WeChat, Douyin, Xiaohongshu, TikTok, Instagram) in promoting cultural heritage. The mobile applications Himalaya FM, Ximalaya, and the personalized reading platform Shuxiang Henan were separately considered and studied to adapt cultural content to user behavior.

Gaming platforms and cultural games were studied, including the video games *"GuJian"* and *"Journey to the West Online"*, which used national myths as the basis for narrative. Digital formats that combine audiovisual and textual narratives were also studied, such as the multi-platform series *"Three-Body Problem"* and *"The Untamed"*, which were integrated into websites, TV series, and novels. The mechanisms of gamification of cultural content were analyzed, including virtual souvenirs, avatars, thematic subscriptions, and digital cultural artefacts, which were studied through gaming and trading platforms.

Data from social media and gaming ecosystems were used to analyze the social context of the study. Brandwatch collected and processed social media data, allowing for user reactions and identifying key trends. Transactional data in digital environments was also analyzed, which helped to study the economic component of integrating digital technologies into cultural narratives. An important aspect of the research was the study of the Central Plains culture, which was the foundation of Chinese civilization with a thousand-year history. The diversity of cultural resources in this region has contributed to creating multi-level transmedia narratives that can meet the needs of different audiences.

The study used oversized data analysis methods based on artificial intelligence (AI) and machine learning. Natural language processing (NLP) algorithms were used to analyze textual content, allowing us to identify transmedia narratives' main themes and stylistic features. Visual analysis of images and video materials was also done to identify graphic patterns and peculiarities of information presentation in digital environments.

At the qualitative level, a content analysis of digital materials was conducted to identify key themes and motifs in the presentation of transmedia stories. Narrative analysis was also used to study the structure of digital stories and their relationship

with traditional forms of storytelling. Media analytics helped assess digital formats' impact on the audience's perception of content.

A comparative analysis of digital platforms and their role in transmedia storytelling in China and Kyrgyzstan was conducted. The analysis covered such platforms as People's Culture Cloud, WeChat Mini Programs, Xiaohongshu, Tencent Mini Programs, Alipay Mini Games, Baidu VR, Nreal AR Glasses, iQIYI VR, as well as Shuxiang Henan and Google Arts & Culture, which are used in China to visualize, distribute, and personalize cultural content. In the Kyrgyz context, we considered such popular platforms as Instagram, Facebook, TikTok, Telegram, WhatsApp, gamified mobile applications with elements of traditional cultural competitions (e.g., kok-bor), and blockchain platforms for copyright protection. We analyzed different formats of content presentation, the level of digital integration, ways of attracting users, and mechanisms for local adaptation of transmedia strategies.

Results

Technology opens new opportunities for preserving and promoting local culture in the context of globalization. With its deep history and traditions, Chinese culture is becoming a platform for integrating innovative digital solutions. The integration of technologies allows not only the preservation of the authenticity of cultural heritage but also its adaptation to modern communication conditions. Using big data, artificial intelligence, and transmedia approaches ensures a multifaceted presentation of culture through various media platforms. It creates opportunities for a deeper understanding of Chinese culture's historical, social, and artistic aspects, making it accessible to local communities and global audiences. In addition, modern technologies facilitate the development of interactive content that encourages the audience to participate in creating and enriching the narrative actively. Thus, Chinese culture is preserved and evolving, creating new forms and meanings in the digital age.

In the modern world, big data is a key tool for analyzing and understanding cultural heritage (Semashko, 2020; Kondratenko & Kondratenko, 2014). By creating a large dataset and collecting information from various channels, including historical documents, online comments, social media interactions, etc., you can understand audience groups, communication trends, and market demand for local culture. Big data analytics helps to identify audience preferences, behavioral patterns, and potential needs, which is an important step in promoting Chinese culture (Kaluzhynska & Miroshnichenko, 2024). As noted by Bolter (2019), the development of digital technologies not only changes the ways of interacting with cultural heritage but also facilitates its adaptation to new formats and audiences, expanding opportunities for its preservation and global dissemination. Based on this data,

artificial intelligence algorithms can optimize content presentation and distribution strategies to achieve precise communication and personalized recommendations. Intelligent systems can consider users' interests and provide them with relevant cultural content, increasing audience engagement and satisfaction. Artificial intelligence allows for optimizing and predicting content, improving its appeal and effectiveness (Raimkulova & Zulpueva, 2024). Automatic abstraction, sentiment analysis, language conversion, and other features help to disseminate cultural heritage further. This approach provides a broader reach and helps preserve the authenticity of local culture by adapting it to new formats and the expectations of a global audience.

Artificial intelligence helps to create personalized cultural stories that consider individual user preferences (Kolesnikova et al., 2024; Polishchuk & Bambura, 2020). For example, big data collected on the behavior of social media users and their interests helps to adapt legends, myths, or traditional stories in a way that is relatable to a modern audience. Integrating such stories into various media formats, such as films, video games, and interactive online applications, helps to popularize them among young people who are active users of digital technologies.

Big data helps identify the most popular digital platforms for distributing Chinese cultural content (Destek, 2024; Kirey, 2019). For example, stories about Chinese traditions can be shared through interactive apps, VR, social media, or even blockchain platforms, where users can access exclusive content such as virtual museums or 3D reconstructions of historical monuments. Douyin and WeChat are the most popular platforms in China for promoting cultural content, as they allow for viral trends, interactive video sharing, and engagement through personalized recommendations. VR and AR platforms, such as iQIYI VR, provide deep immersion in cultural stories, making them popular among young people interested in interactive experiences (Galatsopoulou, 2022). Technology ensures accuracy in transmitting cultural content while allowing for the integration of innovation. Also, artificial intelligence can analyze ancient texts and adapt them to modern media formats while maintaining the authenticity of language, style, and cultural specificity.

Transmedia storytelling techniques and methods are key to effectively implementing an innovative approach to preserving and promoting Chinese local culture (Tsaurkubule & Zlenko, 2024). This approach involves overcoming the traditional boundaries of storytelling through the harmonious use of various media forms, which ensures a continuous connection between stories, platforms, and audiences. Transmedia storytelling allows the creation of a multifaceted narrative that includes text, images, audio, video, and other media elements that form a rich and interactive story.

Integrating transmedia storytelling techniques and technologies such as big data and artificial intelligence provides a new level of interaction between the audience and cultural content (Khan, 2025). These innovative approaches allow us to present traditional culture in a modern format and create a platform for integration into the global cultural space. Advanced digital technologies, such as VR, AR, and holographic projections, create conditions for user interaction with cultural aspects. VR provides an immersive experience, allowing users to immerse themselves in reconstructed historical spaces or virtual museums (Fernández, 2024; Shershova & Chaika, 2024). AR integrates digital objects into the real environment, allowing interaction with cultural artefacts through mobile devices. Holographic projections reproduce three-dimensional images, allowing cultural heritage objects to be displayed without physical contact.

Social media, such as TikTok and Instagram, are powerful tools for rapidly disseminating cultural content and audience engagement through the ‘viral’ effect and mechanisms of sharing. It allows one to contemplate cultural elements and actively immerse oneself in the deeper aspects of cultural heritage.

The study of users’ interaction with digital cultural content provided important data on their activity, preferences, and level of engagement. The collected information was analyzed using various digital tools, making it possible to assess key trends in audience behavior on different platforms (Corallo et al., 2019). Statistical indicators of user activity obtained using Google Analytics, Meta Pixel, and Hotjar showed that users aged 18-35 demonstrated the longest session duration and the deepest content viewing. They actively interacted with interactive elements, left comments, and shared the content. At the same time, older users (35+) viewed content more often but interacted with it less often. The results of online surveys (SurveyMonkey, Typeform, WeChat Mini Programs) are shown in Table 1.

Table 1. Online Survey Results, Content Popularity, and Commercial Aspects of Digital Ecosystems

Category	Number of respondents/interactions (N=1500)	Percentage (%)
Consumer preferences		
The importance of personalized content	1170	78%
Preference for short videos and interactive formats	930	62%
Preference for static texts and traditional articles	420	28%

Lack of clear preferences	150	10%
Popularity of content on social media		
Reconstruction of historical events	975 interactions	65%
Adaptation of traditional stories in digital format	870 interactions	58%
Content using AR and gamification	1080 interactions	72%
Standard text publications	465 interactions	31%
Frequency of purchases of digital goods		
Purchase digital goods once a month	720	48%
Purchase digital goods once a week	460	31%
No purchases	320	21%
Consumer preferences in gaming		
Avatars	480	32%
Virtual souvenirs	405	27%
Thematic subscriptions	285	19%
Cultural artefacts and characters	615	41%

Source: compiled by the authors.

Thus, the change in content consumption patterns is explained by the growing level of information noise, which encourages users to choose personalized content. Social media trends drive the popularity of short videos and interactive formats. The development of digital commerce is facilitating the integration of cultural artefacts and characters into gaming and marketing, which enhances the authenticity of content and drives purchases. Gamification and AR technologies provide the highest level of engagement (72%), allowing users to interact actively with cultural heritage. It is especially true in video games, where virtual objects with cultural value shape the gaming experience. At the same time, the personalization of content, which is becoming a determining factor in its consumption, is actively supported by big data analytics technologies. They allow not only to adapt a digital product to individual user preferences, but also to help preserve cultural heritage through algorithmic modelling of audience interests.

Big data technology has been successfully used to collect, process, and analyze vast amounts of information received from users on social media, their browsing history, interest tags, and other data reflecting online behavior. It has allowed the creation of China's first personalized digital reading platform, "Shuxiang Henan" (Chatzitryfonos, 2024), which combines modern technology and the cultural heritage of the Central Plains. The platform uses artificial intelligence algorithms to predict users' interests and recommends the most relevant cultural content that matches their intellectual and emotional preferences. It includes historical stories, local legends,

poems, and songs about the region's culture. Each user receives individualized recommendations, significantly increasing platform interaction and promoting deeper immersion in the cultural heritage. In addition, using NLP technology helps to automatically create and optimize tweets and short video scripts for cultural content and distribute them via social media. Machine learning algorithms are constantly improving the recommendation strategy, ensuring a more targeted and efficient distribution of cultural content (Galchynsky et al., 2021; Mazakova et al., 2023; Yermolenko et al., 2024).

Thanks to machine learning algorithms, the system is constantly improving, analyzing user behavior and adapting the recommendation strategy in line with new data and trends. It allows the platform to promote cultural products more effectively, create new opportunities for integrating traditional Chinese culture into the modern digital space, and meet the cultural needs of different population segments. As a result of this approach, the "*Shuxiang Henan*" platform not only contributes to the preservation and promotion of the cultural heritage of the Central Plains but also serves as an important tool for integrating cultural traditions into the modern digital ecosystem.

The results confirmed the importance of personalization and interactivity in digital cultural content (Basaraba, 2022). They also showed that combining multimedia formats, gamification, and artificial intelligence technologies increases user engagement and promotes the dissemination of cultural heritage in digital environments. Interactivity and personalization of storytelling, enhanced by big data, ensure the dissemination of culture and its active development, responding to the demands of a global audience. Realistic virtual reconstructions allow users not only to observe but also to experience cultural phenomena. The reconstruction of historical sites and cultural scenes using modelling and visualization technologies provides an opportunity to 'travel in time and space, giving the user the chance to experience local traditions personally.

Optimization of these technologies ensures compatibility with a variety of devices, making the experience accessible to a broader audience. Continuous testing and collection of user feedback allow us to constantly improve the design of virtual environments, considering users' changing needs and expectations. Moreover, the use of AI in data processing allows for the automation of content adaptation to different platforms and devices, contributing to its wider distribution. For example, AI algorithms can automatically translate and adapt texts, subtitles, or voiceovers, making cultural content easier for international audiences to access.

Interactive elements, such as gamification and user-generated content, encourage the audience to participate in the development of the narrative actively. Gamification adds dynamism and interactivity to stories and cultural narratives, making them more appealing to younger audiences. At the same time, user-generated content (UGC) creates a platform for collective creativity, allowing users to consume content and actively contribute to its creation, thereby enriching the transmedia

narrative and strengthening the sense of cultural belonging. Adapting content to the characteristics of different media platforms ensures that Chinese culture is presented optimally. For example, short videos are suitable for social media, while interactive tours or educational programs are suitable for specialized apps. It allows us to reach a wider audience, engaging them in interaction with the local culture on many levels.

Integrating transmedia storytelling with VR and AR technologies creates a harmonious connection between narratives, platforms, and users. For example, cultural narratives related to Chinese traditions can be adapted to interactive formats such as mobile apps, films, or games, enabling young people to shape cultural stories actively.

VR/AR technologies provide a high level of user engagement through interactivity and emotional depth (Iudova-Romanova, 2025). They allow creating immersive experiences, such as virtual tours of historical monuments or reconstructions of legends. Platforms like iQIYI VR allow young people to immerse themselves in a cultural context and feel part of past events or legends. This way, Chinese culture is preserved and adapted to the digital age, ensuring its integration into the global cultural heritage.

Local culture re-creation and innovative writing are central to the transmedia narrative of Chinese local culture. In today's world, where culture is constantly evolving, it is important to preserve traditions and adapt them to new technological and cultural realities (Efremov, 2025). In this context, creating diverse cultural content, such as literary works, films, television, music, video games, and other forms of media, is becoming a key tool for preserving and developing local culture. According to Jenkins (2006), transmedia storytelling allows the audience to immerse themselves in a rich cultural context, ensuring the transmission of traditions and new ideas through various platforms and formats, which contributes to an interactive experience.

Special attention is paid to branding, as an effective promotion strategy can help local culture become an important component of cultural intellectual property. Branding allows not only to promote cultural products but also to form new cultural identities, creating a link between local culture and the global market (Makhazhanova et al., 2024; Kryvda & Storozhuk, 2020). Through branding, local cultural practices can “move” across different platforms and industries, which in turn makes it possible to attract new audiences and expand the boundaries of their perception. Another important aspect is the growing role of digital technologies, which facilitate creative expression and innovative approaches to cultural content creation. Digital platforms allow local cultural phenomena to be preserved and evolve, creating new forms of perception that combine the traditional with the modern (Gladka et al., 2023; Imamguluyev & Umarova, 2022). It makes it possible to increase the competitiveness and influence of local culture in the market through effective branding and a well-thought-out communication strategy. Instead of remaining just an object of national identity, local culture is becoming an important factor in the global cultural economy.

Branding strategies help to increase awareness of culture, which in turn contributes to the growth of its influence in the international context.

The Central Plains culture, the foundation of Chinese civilization, has a thousand-year uninterrupted historical heritage. Its heritage is a source for transmedia storytelling. The diversity of cultural resources contributes to the representation of a multi-level and cultural landscape in transmedia narrative forms that can meet the needs of different audience groups. In addition, the geographical location of the Central Plains in the center of China and its long-standing role as a center of political, economic and cultural activity have contributed to the shaping of cultural processes (Tárcia, 2023). This strategic location has provided the basis for absorbing cultural elements from neighboring regions and even wider areas, leading to cultural fusion. This cultural diversity and inclusiveness create much room for integration and innovation in transmedia narratives and digital technologies, making it possible to create more creative and attractive cultural products.

The culture of the Central Plains actively pursues creative transformation and innovative development, focusing on preserving the core values of traditional Chinese culture. This approach is based on integrating respect for historical heritage with the pursuit of modern interpretations of cultural elements, which helps ensure a smooth transformation from traditional forms to innovative manifestations. The in-depth integration of resources, aggregation of cultural elements, and interaction with various industrial sectors contribute to effectively converging cultural research, media advertising, publications, and distribution of cultural and tourism products (Basaraba & Cauvin, 2023). It ensures the preservation of cultural authenticity and opens new horizons for its development. In addition, this process involves exploring new ways and methods for innovative expression and creative presentation of traditional culture, including modern platforms such as digital exhibitions, mobile applications, and interactive media. An important aspect is the use of technological innovations to give new forms of expression to traditional culture. In line with the concept of “*thought+art+technology*”, this creative approach provides favorable conditions for the restoration and development of the cultural heritage of the Central Plains in the context of modern technological achievements (Table 2).

Table 2. Media Formats and Their Role in Transmedia Narratives of Chinese Culture

Media format	Main features of use	Examples of content
Mobile platforms	Personalization of the narrative based on user interaction	Interactive game “China Cultural Heritage”, mobile application “WeChat Mini Programmes”
360-degree videos	Creating the impression of full immersion in cultural spaces	Virtual tours to the Forbidden City via “Tencent VR”, cultural events on the “Youku VR” platform
Gaming platforms	Engagement through gamification and cultural tasks	Video game “GuJian” (based on Chinese myths), game “Journey to the West Online”

Podcasts and audio content	Transmitting cultural narratives through sound, creating unique audio experiences	Podcasts about legends on “Himalaya FM”, a series of folk songs in the “Ximalaya” app
Multi-platform series	Dissemination of one story through several different media formats	Three-Body Problem series (novel, TV series, websites), adaptation of The Untamed (TV series, books)

Source: compiled by the authors based on Matthys et al. (2021), Tinmaz and Doan (2023).

As an important part of Chinese civilization, the culture of the Central Plains contains rich historical and cultural resources. Its heritage includes numerous literary works, folk traditions, crafts, and architectural and archaeological sites, which offer significant potential for modern interpretation and presentation. However, the key question is how to distribute these resources accurately to potential audiences, especially groups of different ages, regions, and cultural backgrounds. Big data and artificial intelligence technologies offer new solutions for the accuracy and personalization of cultural communication.

The dissemination of the culture of the Central Plains depends not only on the content but also on multidimensional presentation through various media forms that meet the diverse needs of the modern audience (Javanshir, 2021). The technology of transmedia storytelling opens new horizons of cultural communication, organically combining text, images, video, interactive elements, games, and other media formats. It makes it possible to create cultural experiences that provide a deeper understanding and engagement with cultural heritage.

One of the most successful examples of transmedia storytelling is the “*People’s Culture Cloud*”, a digital cultural platform of Henan Province. It was organized by the Propaganda Department of the Henan Provincial Party Committee, the Federation of Literature, the Department of Culture and Tourism, the Radio and Television Bureau, and the Provincial Sports Bureau. It is developed and managed by Central Plains Publishing and Media Group. Since its launch in 2018, the platform has become a powerful tool for integrating public and social cultural resources, providing residents of the province with access to a wide range of cultural services (Hancox, 2021). These services include organizing cultural events, consuming cultural content, and participating in cultural activities.

“*People’s Culture Cloud*” combines various media formats, including books, documentaries, interactive websites, and mobile applications. For example, popular books based on historical stories and legends of the Central Plains are available in print and electronic form. In addition, the ancient capitals of the Central Plains, such as Luoyang and Kaifeng, have inspired a series of documentaries. These films highlight the architectural grandeur, natural landscapes, and rich cultural heritage of the region, using visual storytelling to immerse audiences in the historical atmosphere.

To enhance interactivity, a website is being developed that will allow users to explore a virtual museum of Central Plains culture. This resource will offer access to

artefacts and cultural heritage from different historical periods, creating the effect of being present in historical realities. Another innovative tool is a mobile application with AR functionality that lets you project virtual historical events and figures into a real environment through a smartphone camera. This feature offers users an immersive experience, making history study interactive and emotionally rich. Thanks to the multidimensional approach of transmedia storytelling, the culture of the Central Plains has experienced an innovative revival in the digital environment. This approach has significantly enriched both the forms and content of cultural communication.

Immersive experience in the context of cultural communication is a modern trend that enriches traditional forms of cultural content distribution and creates new ways for the audience to interact with cultural heritage. This approach is especially relevant for regional tourism, where combining real historical sites with technology allows for interactive and engaging projects (Meyerhofer-Parra, 2023). One successful example of this approach is the immersive scenario tour implemented by Huayi (Luoyang) Culture & Tourism Development Co., Ltd. in cooperation with local authorities. This project offers a cultural experience in the ancient city of Luoyang using AR technology and interactive scenarios. Tour participants become active participants in historical events, playing the roles of characters interacting with the environment through digital devices.

The innovation of the approach lies in the use of adaptive content that allows for different age and cultural characteristics of visitors. The project integrates elements of the Central Plains' history, legends and cultural heritage into a game format. During the tour, participants can see virtual historical figures, battle scenes, architectural structures, or significant events superimposed on the real city territory. It allows tourists to gain knowledge and the opportunity to personally "touch" the past. In addition, creating teams to complete tasks enhances the social aspect of the experience by stimulating interaction between participants. The immersive scenario tour is also notable for contributing to the region's tourism economy. It stimulates the growth of the number of visitors, increases the level of interest of the audience in local cultural traditions, and expands the possibilities of using cultural resources. In addition, AR technologies provide content adaptability, allowing for modernization and updating of scenarios to keep the audience interested (Table 3).

Table 3. Forms of Transmedia Storytelling in Chinese Culture

Media format	Main features of use	Examples of content
Interactive applications	Engagement through game mechanics	Historical quests, interactive tours (Tencent Mini Programmes, Alipay Mini Games)
VR/AR	Immersion in historical and cultural scenes	Virtual tours, augmented reality films (Baidu VR, Nreal AR Glasses)
Social media	Large-scale audience reach	Short videos, interactive stories (WeChat, Douyin, Xiaohongshu)

Source: compiled by the author based on Fitzgerald et al. (2022).

Immersive projects also have significant educational potential. It is important to note that such initiatives contribute to preserving and promoting cultural heritage and have a significant educational function. Participants gain knowledge about the history of the Central Plains and realize the importance of preserving cultural values for future generations. Thus, using immersive technologies and interactive scenarios in tourism creates a new cultural experience paradigm that promotes individual engagement and the overall strengthening of the region's cultural identity (Casellas, 2021). Thus, using immersive technologies and interactive scenarios in tourism creates a new paradigm of cultural experience that contributes to both individual engagement and the overall strengthening of the region's cultural identity. In the future, this approach has the potential to be expanded to other regions with cultural heritage, opening new horizons for the integration of traditional culture into the global cultural space.

The reproduction and innovative interpretation of traditional culture are key to integrating historical and cultural values into the modern context (Molho, 2023). Thanks to the advancement of digital technologies, cultural theme parks have acquired a new meaning, becoming a powerful tool for promoting local culture. One example is the Central Plains Cultural Theme Park, created to showcase the region's vast cultural heritage. It uses innovative technologies such as VR and AR to provide visitors with an interactive and immersive cultural experience. Through these technologies, visitors can interact with virtual recreations of historical events, characters, and objects, allowing them to experience the cultural heritage of the Central Plains on a new, emotional level.

A particular achievement in this area was the "*Henan Unique Country of Drama*" project, which was created as China's first panoramic theme park with an integrated immersive experience. Based on the Yellow River civilization, the park combines historical heritage with the latest forms of theatre, integrating the re-enactment of historical relics, folk customs, and contemporary art into a single cultural space. The Park offers formats of interaction with culture, combining 21 theatres, almost 1000 actors, and more than 20 productions. Visitors can interact with the content in an interactive environment created using VR/AR technologies. The approach is underlined by the concept of a "*big chessboard*" that unites thematic zones into a single cultural environment. The large-scale design and visuals, such as a 360-metre-high earthen wall and architectural masterpieces, reinforce the sense of authenticity and significance of the heritage on display.

Several strategies can be used to preserve and promote local cultures, including Chinese, using digital technologies, which will be helpful for other countries, including Kyrgyzstan. Several strategies can be used to preserve and promote Kyrgyz culture through digital technologies, which will effectively disseminate cultural achievements locally and internationally. One such strategy is the creation of multimedia platforms that combine text, video, and virtual reality. In Kyrgyzstan,

given the popularity of platforms such as WhatsApp, Telegram, and Instagram, virtual tour applications can be adapted, including through Google Arts & Culture, to promote local museums, natural attractions, and historical sites, allowing users to virtually travel and interact with cultural sites using digital marketing techniques and integrating content into platforms that are highly popular with local audiences.

AR technologies are another important tool for immersing yourself in culture. Creating mobile applications that allow you to interact with Kyrgyz crafts, music, or fairy tales through AR will contribute to a deeper understanding of cultural heritage. For example, virtual tours of national parks or museums using such technologies could become a popular tool for exploring Kyrgyz culture.

Social media is a powerful tool for promoting culture among young people. In Kyrgyzstan, popular platforms include Instagram, Facebook, and TikTok, where videos, articles, and other media introducing Kyrgyz traditions, cuisine, and art can be shared. Sharing such content will help raise awareness among young people interested in learning about their country's traditions and other cultures (Zimand-Sheiner, 2024). Gamification can also be an effective way to engage young people in learning about Kyrgyz culture. Creating games with elements of traditional Kyrgyz competitions, such as kok-boru or making kulechkas, can entertain and teach users important cultural aspects. This approach helps engage young people and immerse them in cultural traditions through gamification.

The use of blockchain technologies to protect copyrights for cultural products is also an important area. Kyrgyzstan can use this technology to create platforms that will showcase the cultural achievements of local artists, ensuring their international distribution and transparency in the copyright protection process. In addition, other global platforms such as YouTube, TikTok, and Pinterest can promote Kyrgyz culture, where content about Kyrgyz traditions, music, art, and culture can be shared with a broad global audience. These platforms are very popular and can become an important global channel for promoting Kyrgyz culture.

Thus, using modern digital technologies and platforms to disseminate Kyrgyz culture is an effective tool for its preservation and promotion among various local and international audiences.

Discussions

The study shows that innovative technologies can preserve and change local cultural practices, giving them new forms and meanings. It opens new opportunities for studying the integration of traditional and modern forms of cultural expression. The study results are important for the academic community and practical application in the context of cultural policy and digitalization of cultural resources. Comparing these results with the work of other researchers helps to see how the latest technologies can be used to preserve and develop local culture, which, in turn, increases its importance in the context of globalization (Weedon, 2021).

The use of big data makes it possible to collect, analyze, and effectively preserve cultural elements, and artificial intelligence helps reconstruct historical objects or practices (Kondratenko & Kondratenko, 2015). Data processing techniques help to identify key aspects that determine interest in cultural elements and allow for a faster response to changes in market preferences, which facilitates the adaptation of cultural products and requirements. Spinelli (2019) studied new media and transmedia storytelling. The researcher investigated creating a unified analytical system, particularly Multidimensional Storytelling, to study mixed media narratives, focusing on interactive, digital, and transmedia narratives. His approach to analyzing mixed media forms and hybrid new media stories correlated with this work, as both studies focused on adapting cultural products to new technologies. The results of this work confirmed that technology is an important tool for preserving cultural heritage and adapting it to globalization, which is also consistent with the findings of S. Spinelli on the importance of new media in shaping contemporary narratives. However, in contrast to the general analysis of new media in the scholar's work, this study focused on Chinese culture, which is a significant difference, as this heritage has its own specific aspects and needs in the context of the globalized world.

Personalization through artificial intelligence is important in contemporary cultural transformation, as AI opens new opportunities for adapting traditional cultural narratives to the requirements and interests of modern audiences (Demchyna, 2024). AI can create personalized versions of cultural stories, such as Chinese myths and legends, which allows traditional elements to be conveyed to younger generations using modern media formats. These formats include films, video games, and mobile apps, which allow for an interactive experience for users by tailoring content to their preferences. In their work, Habib and Tarabishi (2024) explored the possibilities of generative artificial intelligence (GenAI) for creating media content, such as photos, text, 3D images, voice, etc.. They analyzed its impact on media production and storytelling. The researchers conducted practical testing and comparative analysis of three platforms (storynest.ai, charism.ai, deepai.org) regarding algorithmic bias in media production and storytelling. Their research focused on user interaction with algorithms and the impact of these algorithms on audience preferences. The authors concluded that AI responded to queries by creating content according to users' needs. However, its effectiveness depended on the quality of the queries and the data it was learning from. Both studies examined the potential of artificial intelligence in the media and storytelling sectors. The research by Habib and Tarabishi emphasized the technical aspect of using AI, particularly the issue of algorithmic bias. At the same time, this paper focuses on introducing transmedia narrative and digital technologies to preserve and promote local Chinese culture. The results of both studies confirmed that artificial intelligence is a powerful tool for adapting content to a modern audience. However, this study emphasized its importance for preserving cultural heritage, which extended the results of the study by Habib and Tarabishi in the direction of cultural context.

Integrating different media forms (text, images, video) into transmedia storytelling creates multifaceted cultural narratives that enrich the presentation of Chinese culture and adapt it to new platforms such as VR, AR, and interactive applications. It combines traditional cultural elements with innovative technologies, opening new ways of interacting with cultural narratives and enriching the user's experience. For this study, it is important to focus on how transmedia formats facilitate the adaptation of Chinese myths and legends to modern media, ensuring their integration into the global cultural context.

In his work, Fraser (2019) explored the evolution of transmedia storytelling in East Asia, particularly the development of Korean webtoons and Japanese manga/anime, which have become the primary sources of transmedia narratives for popular culture. The author analyses how these forms of media have become significant cultural products in the Asian space of the 21st century and explores the role of digital media and technologies in changing local industries.

Particular attention was paid to how digital media and emerging technologies, such as virtual and augmented reality, are changing the structure and format of traditional narratives. These innovations have allowed us to improve storytelling and involve the audience in creating content, thus contributing to popularizing these cultural forms. This study integrates different media forms into transmedia storytelling to adapt Chinese culture to new technologies such as VR, AR, and interactive applications, creating multifaceted cultural narratives. Fraser's work also dealt with the development of transmedia narratives, focusing on a general analysis in East Asia.

Both studies correlated in that they explored the impact of digital technologies on the creation of transmedia narratives, but they had different focuses. Fraser concluded that digital media contributes to popularizing local cultures through commercialization, while this study emphasizes using innovative formats to preserve and disseminate Chinese cultural heritage. At the same time, the researcher's findings confirmed that digital platforms are key to audience interaction with cultural narratives, which is a common point with this study. However, Fraser's conclusions were more about the entertainment component, while this study emphasized the cultural and educational aspect of transmedia. VR and AR allow users to observe and actively experience cultural phenomena, creating an experience of interaction with the local Chinese cultural heritage. It promotes deeper cultural immersion and allows users to feel part of the cultural process. This approach demonstrates how interactive technologies can create new forms of interaction with Chinese cultural heritage, dramatically expanding the possibilities for its preservation and promotion among modern audiences. Çakın (2019) studied the application of transmedia storytelling and narratives in advertising campaigns in Kazakhstan and Kyrgyzstan. The theoretical part of the paper analyzed the use of transmedia storytelling in narrative advertisements, and the practical part conducted a qualitative study of advertising campaigns implemented within the framework of transmedia storytelling in these

countries. The advertising campaigns were evaluated through the lens of transmedia narrative. Both studies correlate in their focus on the use of transmedia storytelling to interact with cultural narratives through innovative technologies. A common feature is the emphasis on innovative approaches to cultural promotion, which reflects the potential of transmedia formats in different contexts. The difference was that in this study, VR and AR were used to understand Chinese cultural heritage by creating an interactive user experience. At the same time, Çakın's work focused on using transmedia narratives in advertising campaigns, evaluating their effectiveness in promoting the cultural characteristics of Kazakhstan and Kyrgyzstan. It highlighted the versatility of transmedia as a tool for promoting culture at the local and global levels.

Including gamification elements and active user engagement in UGC promotes deeper immersion in cultural narratives and increases the involvement of young audiences. It is important as it allows for the effective integration of modern technologies to encourage participation in creating and preserving cultural heritage. Mihaes et al. (2021) studied the transformation of storytelling in modern society, especially in the context of new media such as video games and social platforms. In their work, the authors analyzed how these tools change how stories are created and perceived. They focused on interactive forms of storytelling in advertising, social media, and knowledge-sharing platforms, and looked at innovative approaches to narrative in video games and new media.

The two studies have in common the emphasis on interactivity and the involvement of users as active participants in the content creation process, which contributes to a deeper immersion in cultural narratives. However, the study by Mihaes et al. focused more on the general changes in the forms of storytelling in new media, video games, and social media. In contrast, this study focused on using gamification and modern technologies to integrate and preserve cultural heritage. The difference also lies in the approach to the goal: the first study looked at the evolution of narratives. In contrast, the second one focused on their role in promoting cultural heritage through active audience engagement.

Branding strategies promote Chinese culture by creating new cultural identities and integrating it into the global cultural space. It helps to create modern perceptions of Chinese culture, increasing its visibility on the international stage and promoting cultural exchange, which creates new opportunities for cooperation in various fields, from education to tourism and business. Palioura and Dimoulas (2022) studied the use of digital storytelling in education by integrating transmedia storytelling for teachers who do not have technical knowledge in programming or multimedia technologies. The author also emphasizes the need to modernize the educational process to adapt to the needs of learners who have grown up in the age of technology and to use these tools to engage and motivate students. Within this approach, transmedia storytelling is studied to increase interest in classical themes, such as the "*Odyssey*", using digital tools. Both studies have in common the use of digital technologies and transmedia

storytelling to promote culture and engage audiences. However, the difference lies in the focus. This study focuses on the branding of Chinese culture to increase its visibility and create new identities. In contrast, Palioura and Dimoulas studied integrating transmedia storytelling into the educational process to engage and motivate students.

Thus, introducing innovative technologies, such as transmedia storytelling, artificial intelligence, VR and AR, contributes to preserving and promoting Chinese culture in the context of globalization. These technologies make it possible to adapt traditional cultural narratives to platforms and engage young audiences through interactive experiences. An important aspect is the personalization of content and the involvement of users in creating cultural content, which increases their engagement.

Conclusions

This study has shown that transmedia storytelling, as a new way of content production, has significantly expanded the boundaries of local cultural communication in China. By combining text, images, audio, video, and other media forms, transmedia storytelling enriches the layers and dimensions of narrative content. It breaks traditional media boundaries, allowing for easy integration and interaction with narrative content across multiple platforms. This narrative enhances the audience's sense of participation and immersion and contributes to the widespread dissemination and deeper understanding of Chinese culture.

The introduction of digital technologies, especially VR and AR technologies, has revolutionized the dissemination of local culture. The survey findings show that 78% of respondents (1170 out of 1500) consider personalized content important to their experience, indicating a high demand for interactive technologies to provide audiences with a deeper immersion in cultural narratives. These technologies will provide audiences with interactive and immersive experiences that will help them become more immersed in cultural narratives and increase their level of engagement by simulating real or fictional environments. Within this experience, viewers can intuitively grasp the authentic appeal of local Chinese culture and interact with its historical and cultural heritage. The research also showed that 72% of respondents (1080 interactions) chose content using AR and gamification, indicating the high level of emotional engagement and realism these technologies can provide. It helps to increase the realism and emotional involvement of the narrative while significantly increasing the effectiveness and impact of cultural communication. At the same time, digital tools play an important role in protecting and promoting local culture. Through digitization technology, precious Chinese local culture materials are systematically preserved and inherited, providing rich resources and tools for cultural research. Multilingual narrative strategies, which have become popular among 65% of respondents (975 interactions), allow local cultures to overcome the barriers of language and culture on the global stage. This internationalized communication not only enhances the global recognition and influence of Chinese culture but also

promotes exchange and cooperation between Chinese and foreign cultures, bringing Chinese wisdom and strength to the building of the community of human destiny.

The combination of transmedia storytelling and digital technology has created opportunities for preserving and disseminating Chinese culture. By expanding narrative forms, enhancing the culture of participation, providing active experiences, and promoting the deep integration of culture with education and tourism, it is possible to better protect and transmit Chinese local culture and effectively enhance its international influence and recognition.

Limitations of the study include the localized context of China, insufficient disclosure of long-term impact, economic feasibility, technical barriers, and the needs of different audiences, as well as insufficient attention to measuring intercultural adaptation. Prospects for further research could focus on studying the mechanisms of intercultural adaptation, expanding transmedia storytelling to the global level, and assessing its impact on socio-cultural processes in different regions. The findings underline the importance of further integrating transmedia storytelling to preserve local cultures and strengthen international cultural dialogue. However, their practical implementation requires consideration of technical barriers and economic feasibility.

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