

The Development Framework and Practical Strategies of Traditional Culture from the Perspective of Interactive Digital Narrative

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Abstract: With the rapid development of digital technology, interactive digital narrative, as an emerging narrative method, provides a new perspective and path for the inheritance and innovation of traditional culture. Applying interactive digital storytelling to the field of cultural heritage is an important practice for the universal sharing of digital achievements in Chinese culture and the implementation of the “digital+cultural heritage” strategy. This article aims to explore the application framework and practical strategies of interactive digital narrative in the development of traditional culture. Taking traditional culture in Shenzhen as an example, a development framework of “subject medium local traditional culture” will be constructed through interactive digital narrative innovation, innovating cultural content, enhancing cultural experience, and elaborating on the strategy of storytelling expression of local traditional culture. This provides theoretical reference and practical guidance for the digital dissemination and innovative development of traditional culture.

Keywords: Interactive digital narrative; Traditional culture; Development framework; Practical strategy

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1. Introduction

Culture is the soul and foundation of a country and a nation, and traditional culture is an important carrier of national memory and historical wisdom. However, in the context of globalization, the inheritance and development of traditional culture face many challenges. On the one hand, the dissemination methods of traditional culture are relatively single, making it difficult to attract the attention of the younger generation. On the other hand, the protection and inheritance of traditional culture require a significant amount of manpower, material resources, and financial resources, which existing resources cannot meet^[1]. Therefore, how to innovate the dissemination methods of traditional culture and enhance its attractiveness and influence, has become an urgent problem to be solved. Today, in the context of the rapid development of the Internet, the traditional cultural communication mode has undergone tremendous changes. The traditional cultural narrative focuses on the integration of scientific

and technological elements, such as “Tang Palace Banquet”, “Shangxin Forbidden City”, “National Treasures”, “Mawangdui Immortal Time”, “Dragon Boat Festival Wonderful Tour” opening dance “Prayer” and other programs have been “out of the circle.” From this, it can be seen that narrative is not only a way of telling stories but also an important tool for expanding cultural influence by incorporating technological elements. The research in this article is expected to find a new path for the inheritance and innovation of traditional culture, provide some inspiration and reference for researchers and practitioners in related fields, and promote the digital dissemination and innovative development of traditional culture.

2. Theoretical basis and development framework

2.1. Interactive digital narrative

Interactive digital narrative (IDN), abbreviated as interactive narrative, is an emerging narrative style that provides new possibilities for the development of traditional culture with its unique interactivity and immersion. Interactive narrative is a product of the development of digital media technology, which originated in the late 1860s and has gradually developed into a mature and dynamic research field. It refers to “multi-sequence narratives in which users can have beneficial effects through interactive narrative systems”, in short, user input can intervene in the narrative.

The field of interactive narrative inherits the four classic theories of Western narrative and has become an important research topic in the field of VR narrative. Currently, scholars mainly study the creative laws of interactive and intelligent narrative, narrative, interaction, and system patterns, as well as design theory and practice [2]. Domestic scholar Li Yuan found through research that the way users participate in storytelling is through role-playing, human-computer dialogue, etc., which can enhance the user experience. Scholar Zhang Meng found through research that the core of the interactive narrative is to construct a digital narrative system. Users can activate script cognition to understand the story world in a virtual narrative experience and stimulate participants’ initiative through adventure games or interactive narratives. Foreign scholar Hamet Kouaniz found through research that interactive narrative is a form of narrative expression in multiple forms, implemented in the form of multimodal computing systems, which can enhance user experience. He believes that the core elements of the interactive narrative are the system, process, and product, and has constructed and continuously improved the SPP model.

2.2. Development framework for this article

This article aims to construct an interactive digital narrative system for local traditional culture. Taking Shenzhen’s traditional culture as an example, a development framework of “subject medium local traditional culture” is constructed. The three-dimensional interactive diagram of “subject media local traditional culture” is shown in Figure 1.

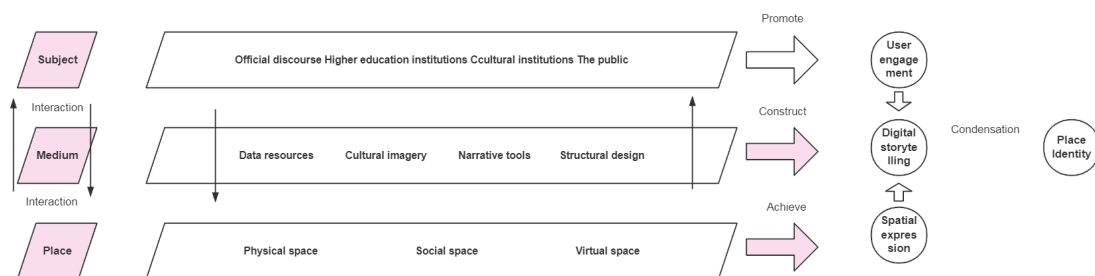


Figure 1. Three-dimensional interactive diagram of “Subject media local traditional culture”

The subject refers to the users of the system, who are the participants and experiencers of the story. Users can understand and experience the traditional culture of Shenzhen through interaction with the system. Media refers to digital technology and media forms, including metadata, semantic annotation, international image interoperability framework (IIIF), associated data, and other technical standards, as well as Chinese-style interface design and background music. These media provide users with rich sensory experiences and interactive methods. Local traditional culture refers to the core content presented by the system, including the history, art, folk customs, festivals, and other aspects of Shenzhen. Through interactive digital storytelling, users can deeply understand and feel the charm of these traditional cultures.

3. Design of an interactive digital narrative system for traditional culture

To build an effective interactive digital narrative system for traditional culture, technologies, and standards such as metadata, semantic annotation, IIIF, and related data were adopted, combined with Chinese-style interface design and background music. The construction of this system is beneficial for the public's recognition, understanding, and appreciation of traditional cultural images in Shenzhen, as well as for public cultural institutions such as libraries, archives, and museums to carry out digital curation, data visualization, moral and aesthetic education, and promote the inheritance and development of traditional culture in Shenzhen. The following is a detailed description of the system design.

3.1. Application of technology and standards

Metadata: Used to describe the basic information of digital images, such as author, creation time, location, etc., providing users with a preliminary understanding of the image and helping them search and filter in the system.

Semantic annotation: By annotating elements in an image, such as people, buildings, clothing, etc., it provides users with deeper image interpretation and background information.

IIIF: The international image interoperability framework provides a unified standard for the display and interaction of digital images. Through IIIF, image scaling, translation, rotation, and other operations can be achieved to associate and compare with other images.

Related data: Through related data technology, different digital resources (such as images, text, audio, etc.) can be linked and integrated to form a complete cultural knowledge system.

3.2. Interface design and background music

Interface design: The system adopts a Chinese-style interface design, including traditional color matching, pattern elements, and layout methods, which not only meets the aesthetic needs of users but also creates a strong cultural atmosphere.

Background music: The system is equipped with traditional background music featuring local characteristics of Shenzhen, such as guzheng and pipa performance pieces from Chaozhou music, or local folk music ensembles of Shenzhen, providing users with a more immersive cultural experience and deepening their appreciation of Shenzhen's traditional culture.

3.3. Function interface

Overview+details: The system presents a digital image overview of cultural products in Shenzhen. Users can quickly understand the visual content of traditional cultural information in Shenzhen through the system's

overview function, including historical background, main features, etc. At the same time, they can also gain a deeper understanding of specific aspects or elements through the detail function, and achieve image focusing and panoramic display through the zoom function.

Navigation+browsing: The system provides clear navigation menus and browsing paths, allowing users to easily find the content they are interested in and explore in depth. There are three forms of experience: timeline browsing, navigation browsing, and free browsing. At the same time, the combination of background music can bring users a visual and auditory experience of being in the context.

Introduction and sharing: For each traditional cultural element or attraction, the system provides detailed introductions and background information, which users can share on social media to share their discoveries and experiences with more people, promoting the dissemination of traditional culture.

4. Practical strategies of traditional culture from the perspective of interactive digital narrative

4.1. Aggregation and integration of data resources

Data resources are the foundation of traditional cultural development. To implement the decision and deployment of the CPC Central Committee on promoting the digital construction of public culture and implementing the digital strategy of the cultural industry, actively respond to the opportunities and challenges brought by the rapid development of the Internet to cultural construction, and meet the growing spiritual and cultural needs of the people, the Office of the CPC Central Committee issued the Opinions on Promoting the Implementation of the National Cultural Digital Strategy. Cultural data has become an important part of the national digital infrastructure. In the digital practice of traditional culture in Shenzhen, the primary task is to extensively collect, organize, and integrate data resources, including various types of cultural resources such as historical documents, cultural relics archives, folk legends, local operas, and folk arts. Through digital means, these resources are transformed into searchable, editable, and interactive digital assets, providing a rich material library for subsequent narrative creation. The aggregation of Shenzhen's traditional culture resources often uses text, images, audio, video, and other methods. To achieve the above goals, it can be based on the ternary framework of "people time events", and collect diverse and heterogeneous data of inheritors, traditional cultural works, local history, and other types based on the time series of traditional cultural inheritance and evolution. By adopting advanced technologies such as big data and cloud computing, a database of traditional culture in Shenzhen should be constructed. The database should have efficient data storage, retrieval, and analysis capabilities, and support cross-platform and cross-terminal data sharing and utilization. At the same time, attention should be paid to data security and privacy protection to ensure the legal and compliant use of cultural resources^[3].

4.2. Extraction and transformation of cultural symbols

Cultural symbols are a key force in understanding and reshaping a place and are the essence of traditional culture. In interactive digital storytelling, how to extract and transform these cultural symbols into modern and attractive narrative elements is the key to achieving innovative dissemination of traditional culture. Firstly, there is a need to develop traditional cultural IP and innovate narrative forms. Shenzhen, located in the south of China, is at the forefront of reform and opening up, with a diverse and vibrant culture. Its intangible cultural heritage resources are equally rich and diverse, including the Shatoujiao Fish Lantern Dance, Hakka Straw Hat Making Technique, Cantonese Opera, and Dapeng Memorial Ceremony for Martyrs, which have distinct regional characteristics.

It has strong regional characteristics. Therefore, based on the rich traditional cultural resources of Shenzhen, a series of cultural IPs with regional characteristics can be developed to create three types of story texts: adapted, extended, and integrated, forming different story worlds. In terms of narrative form, modern literature and film and television works can draw on narrative techniques such as suspense setting and plot reversal to enhance the appeal and influence of the story. Secondly, there is a need to break away from a single narrative mode and construct an intertextual narrative space. In the digital practice of traditional culture in Shenzhen, efforts can be made to construct an intertextual narrative space. Through the interweaving and fusion of various narrative clues, perspectives, and levels, an open, diverse, and interactive narrative environment can be formed to deeply explore the intrinsic value of cultural resources and stimulate users' desire for exploration and participation enthusiasm. Finally, Shenzhen can integrate online and offline derivatives, create IP-related official accounts, make digital facial expression packs, and H5 animations, develop IP-related APPs, and fully integrate IP images into the catering industry, beauty industry, cultural and creative products and toys^[4].

4.3. Application and development of narrative tools

Narrative tools are important means of achieving interactive digital storytelling. The current development of digital media technology has enriched the means of storytelling. With the increasing maturity of advanced technology, digital media technology integrates various elements such as sound, images, text, animation, and film and television into stories, gradually integrating deeply with traditional cultural development scenarios, giving rise to new formats such as "traditional culture+digital museums", "traditional culture+online tourism", and "traditional culture+electronic games." The Korean Cultural Heritage Agency, SK Telecom, and Google Korea have jointly developed the "ARiran" application to help the public browse the Changde Palace. The public can watch the restricted backyard through VR and enjoy the palace dance "Spring Oriole Dance" through AR [5]. Therefore, in the digital practice of traditional culture in Shenzhen, various narrative tools should also be fully utilized and developed to enhance the interactivity and fun of narration. On the one hand, virtual digital humans can be introduced to achieve human-machine interaction. Virtual digital humans, as an emerging artificial intelligence technology, have been widely applied in multiple fields. In the digital exploration of Shenzhen's traditional culture, researchers can first design a virtual digital human image with unique Shenzhen characteristics, incorporating local cultural elements such as modern urban style and traditional Lingnan culture into its appearance, including clothing and hairstyle. The virtual digital human personality can be designed, and different personalities can be adapted to different narrative scenarios. Secondly, virtual digital humans can be introduced as narrative subjects or guides to interact with users in real time. Through artificial intelligence technologies such as speech recognition and natural language processing, virtual digital humans can understand user instructions and intentions, and adjust narrative rhythm and content based on user feedback. This can enhance the interactivity and personalization of storytelling, providing users with a more authentic experience.

On the other hand, electronic games can be developed to achieve interpersonal interaction. Electronic games, as a highly interactive form of media, have become an important way for young people to obtain information, entertain, and relax. In the digital inheritance of Shenzhen's traditional culture, a series of electronic games that combine Shenzhen's historical background, folklore, and other cultural resources can be developed. These games can be based on Shenzhen's historical landmarks and unique culture as the textual foundation, with Shenzhen's urban landscape as the environmental background, incorporating elements such as Shenzhen's unique service industry and food culture, to create educational and entertaining electronic games. Through game interaction, users

can not only gain a deep understanding of Shenzhen's traditional culture but also share game experiences and enhance friendships with other players, thereby broadening the dissemination channels of traditional culture and attracting the attention and participation of more young audiences.

4.4. Creating an immersive narrative experience through the coexistence of reality and reality

Immersive experience is one of the important features of interactive digital storytelling. In the digital practice of traditional culture in Shenzhen, immersive narrative experiences can be created through the coexistence of reality and virtuality, making users feel as if they are immersed in the world of traditional culture. Firstly, Shenzhen's traditional cultural stories are rich in profound legends, historical tales, and anecdotes of famous people, which are imbued with regional identity and spirit. In narrative creation, the combination of "non-fictional" historical culture and "fictional" artistic creation techniques can form a narrative space where reality and virtuality coexist. By using digital technology to simulate historical scenes, reproduce cultural styles, and incorporate modern aesthetic elements and creative ideas, the narrative content can have both historical weight and a modern atmosphere, triggering emotional resonance among users and inspiring their interest and love for traditional culture. Secondly, virtual reality technology creates a vivid, multi-sensory, and multi-dimensional artificial world, where users can achieve immersive narrative experiences through advanced technologies such as virtual reality (VR) and augmented reality (AR). For example, VR experience zones can be set up in museums or cultural sites in Shenzhen, allowing users to explore virtual historical scenes while wearing VR devices; AR navigation systems can be installed at tourist attractions such as Wutong Mountain, Dapeng Ancient Town, Shenzhen Bay Park, Shenzhen Lotus Hill Park, East China Resort, Window of the World, Splendid China, and Xianhu Botanical Garden, enabling users to scan attraction markers with their mobile phones or tablets to access rich cultural information and interactive experiences. This enhances users' sense of participation and satisfaction and subtly promotes and disseminates Shenzhen's traditional culture ^[6].

In summary, interactive digital storytelling can enrich the presentation of stories and give users more sense of participation and control through the interaction between users and digital content. The practical strategy of traditional culture from the perspective of interactive digital narrative is a systematic project. In the perspective of interactive digital narrative, strategies such as aggregation and integration of data resources, extraction and transformation of cultural symbols, application and development of narrative tools, and creation of immersive narrative experiences through the coexistence of reality and virtuality should be adopted to continuously explore and practice, injecting new vitality and momentum into the development, inheritance, and promotion of Shenzhen's traditional culture, and promoting its brilliance in the new era.

Disclosure statement

The authors declare no conflict of interest.

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