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GAMIFICATION AND VISUALIZATION OF CHANGLE TAIGE IN DIGITAL MEDIA DESIGN

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This study explores how gamification and digital visualization enhance the presentation of Changle Taige, transforming it into an interactive cultural experience while preserving its authenticity.

Key words: *Gamification and Interactive Design, Digital Visualization, Changle Taige, Intangible Cultural Heritage, Digital Heritage.*

INTRODUCTION

With the advent of broadcasting, television, and digital media, the traditional barriers of time and space between people have significantly narrowed, shaping what Marshall McLuhan famously described as a "global village" [1]. As globalization accelerates, the ways in which people exchange and engage with culture have undergone profound transformations. Modern media has revolutionized the ways in which traditional culture is represented and disseminated, bringing both new opportunities and significant challenges to intangible cultural heritage (ICH). In an era dominated by fragmented information consumption, people's patience for deeply engaging with ICH is waning, increasing the risk of many traditional cultural forms becoming marginalized or even vanishing entirely.

Recognized as a national intangible cultural heritage (ICH), Changle Taige blends theater, storytelling, and folk performances, embodying a deeply rooted local cultural heritage (Fig. 1) [2]. However, traditional offline dissemination methods have struggled to keep pace with the evolving expectations of contemporary audiences, especially younger generations who gravitate toward more interactive and visually dynamic experiences. The diminishing presence of Changle Taige prompts an essential question: How can digital technology be harnessed to broaden its reach and rekindle public interest in this cultural heritage? This study aims to explore and address this pressing challenge.

PURPOSE

This study explores how gamification and interactive design can improve the digital transmission of Changle Taige, turning it from a static tradition into an engaging and interactive experience. This research uses digital tools to examine how game-based interaction can enhance visualization and user engagement. It also focuses on digitizing key story elements, blending traditional aesthetics with



modern design, and expanding its reach through multiple platforms to keep it relevant and accessible in today's society.

RESULTS AND DISCUSSION

1. The Playfulness of Gamification Design

The traditional Changle Taige performance is structured as a dynamic confrontation between two factions, namely "Shangshi Street" and "Xiashi Street." During these performances, participants engage in storytelling battles, crafting Taige narratives that highlight their intelligence and artistic prowess [3]. Furthermore, both factions employ "spies" to secretly gather intelligence from their rivals, heightening the suspense and intensifying the competitive nature of the storytelling process. Beyond its artistic significance, Changle Taige serves as a powerful symbol of community cohesion and collective collaboration, deeply embedded in the local cultural fabric. From an early age, children in Changle actively engage in performances, taking on various roles that contribute to the spectacle. As they mature, their responsibilities expand, encompassing essential tasks such as designing Taige structures, mastering traditional makeup techniques, and skillfully maneuvering the displays. Through this intergenerational participation, the seamless transmission of tradition is upheld, ensuring that Changle Taige remains a living and evolving cultural heritage experience.

Within the gamification framework, this traditional model is faithfully recreated by introducing two opposing factions, "Shangshi Street" and "Xiashi Street," thereby establishing a competitive storytelling mechanism (Fig. 2).



Fig. 1. Changle Taige Performance



Fig. 2. Game Battle Interface

Players must strategically select appropriate characters and storylines to participate in these narrative battles, ensuring an immersive and dynamic gaming experience. Moreover, "spy" characters emerge unpredictably during gameplay, requiring players to react swiftly and tap to eliminate them, thus helping their faction retain a competitive edge in the unfolding narrative. The game features well-known Chinese folklore and mythological narratives, including "Nezha's Battle Against the Sea," "The Pagoda-Bearing Heavenly King," "Havoc in Heaven," and "Journey for the Buddhist Scriptures", serving as the foundation for its competitive storytelling framework. This carefully structured and interconnected narrative system ensures cohesive storytelling and amplifies the competitive essence inherent in Changle Taige.



2. Visual Expression and Digital Innovation

The digital adaptation developed in this study remains faithful to the traditional aesthetics of Changle Taige. Characterized by its elaborate decorative elements, Changle Taige integrates imagery drawn from traditional folklore and storytelling traditions [4]. The visual presentation is highly stylized, featuring bold color schemes, exaggerated forms, and an inherently theatrical quality. Key visual components—including elaborate headpieces, traditional costumes, and distinctive postures—were carefully extracted and digitally reconstructed using 2D vector graphics throughout the game development process. This approach not only preserves the authentic artistic heritage of Changle Taige but also enhances its visual appeal for contemporary digital audiences.

In terms of color design, the game uses grayscale backgrounds to highlight the main characters, enhancing depth and dramatic effect. The background includes dot matrix effects to mimic the texture of traditional folk crafts, while the main characters are designed with fine-grain detailing to create a sense of depth and visual richness. Additionally, in character modeling, key visual elements have been refined and adjusted to align with modern aesthetics, ensuring that while the traditional style is maintained, the designs fit seamlessly into digital media formats.

The characters and scenes in the game are not just decorative elements; they play an essential role in deepening players' cultural understanding. Players need to learn and recognize the distinctive costumes and attributes of each character, making informed choices to build the story successfully. This approach fosters a more immersive connection with the artistic essence of Changle Taige, turning ICH from a passive historical tradition into an interactive and engaging cultural experience.

3. Application of Interactive Games in ICH Dissemination

The digital project developed in this study is available in both PC and mobile versions, designed with compact file size and optimized performance to ensure compatibility across multiple devices, thereby broadening the channels for ICH dissemination. Currently, the game is featured in exhibitions at the Changle Ancient Town Museum. It has been simultaneously distributed through WeChat public accounts, websites, and various digital platforms, effectively bridging online and offline dissemination methods. Through internet-based sharing mechanisms, the game extends its reach to a wider audience, enabling Changle Taige culture to overcome geographical limitations and gain global visibility and recognition.

The strength of this dissemination model lies in its gamified interactivity, which proves to be far more engaging than traditional exhibition formats, especially for younger audiences who are accustomed to interactive digital experiences. Moreover, the game's inherent challenges allow players to immerse themselves in the artistic essence of Changle Taige and gradually absorb its cultural significance as they progress through the gameplay. In contrast to static textual descriptions or passive video content, interactive games offer a more immersive and dynamic experience, making the dissemination of ICH more compelling and impactful.



CONCLUSIONS

There is no doubt that digital technology has emerged as an indispensable tool for the preservation and dissemination of ICH. At present, numerous ICH projects and cultural practitioners actively engage with social media platforms, including Weibo, WeChat, and short-video apps, to broaden ICH outreach and engagement. Additionally, digital technologies have supported the launch of various ICH-related cultural and creative products, revitalizing traditional culture in modern society [5]. The preservation and promotion of ICH should not be limited to conventional methods; rather, it should evolve alongside contemporary advancements, continuously broadening its dissemination strategies through interactive and innovative approaches. The digitalization of ICH not only enhances its accessibility and experiential richness but also enables a wider audience to connect with its unique charm in a more intuitive and immersive manner. In the future, ICH preservation efforts should fully embrace gamification, virtual exhibitions, and cross-media dissemination, ensuring that traditional culture is preserved and seamlessly integrated into contemporary society. These approaches will enable ICH to thrive with renewed vitality in the digital era.

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КУАН Жуйн, КОЛОСНІЧЕНКО О.

ГЕЙМІФІКАЦІЯ ТА ВІЗУАЛІЗАЦІЯ ЧАНЛЕ ТАЙГЕ В ЦИФРОВОМУ МЕДІАДИЗАЙНІ

Це дослідження розглядає, як гейміфікація та цифрова візуалізація покращують презентацію Чанле Тайге, перетворюючи його на інтерактивний культурний досвід, зберігаючи при цьому його автентичність.

Ключові слова: *гейміфікація, інтерактивний дизайн, цифрова візуалізація, Чанле Тайге, нематеріальна культурна спадщина, цифрова спадщина.*