

Multifaceted Design of Traditional Calligraphy in the Digital Media Perspective

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Abstract: Traditional calligraphy, throughout its extensive historical development, has established its own set of rules and characteristics, becoming an integral part of Chinese culture. In the digital media era, the integration of calligraphy into the realm of design has not only enriched the cultural significance of design but has also expanded the expressive language of design. Concurrently, the relentless advancement of digital media technology has introduced new tools and techniques for artistic expression. Against this backdrop, traditional calligraphy faces both challenges and opportunities, particularly with the recent emergence of transformative technologies like virtual reality and artificial intelligence, which have profoundly impacted traditional art and design fields. Nevertheless, the diverse array of digital media technologies has injected fresh creativity and expressive capabilities into calligraphy art. Therefore, exploring the diversification of calligraphy art from a digital media perspective is not only a demonstration of respect for tradition but also a forward-looking endeavor. Through this research, we aspire to provide valuable insights that can contribute to enriching the diversified design of traditional calligraphy in the digital era.

Keywords: Digital media, graphic design, traditional calligraphy, diversification

1 Introduction

Throughout its extensive historical evolution, traditional calligraphy has established distinct rules and characteristics, seamlessly weaving itself into the lives, arts, and culture of the Chinese people. In the era of digital media, the integration of calligraphy into the realm of design has not only heightened the cultural significance of design but also broadened the expressive language of design. Simultaneously, the relentless progression of digital media technology has introduced novel tools and techniques for artistic expression. Against this backdrop, traditional calligraphy encounters both fresh challenges and opportunities, especially in light of recent advancements such as virtual reality and artificial intelligence, which have ushered transformative changes into the traditional domains of art and design. In the digital media age, we grapple with a diverse array of challenges stemming from varied cultures, media forms, and audiences, while concurrently possessing the opportunity to craft a more diversified spectrum of artistic works. Digital media has infused newfound creativity and expressive capabilities into the realm of calligraphy art, yet it has also ignited intricate deliberations about harmonizing tradition with modernity and culture with technology. Hence, the exploration of calligraphy art's diversification from the vantage point of digital media is not merely a tribute to tradition but also an expedition into the future. This paper employs case analysis and data analysis methodologies to examine existing applications of calligraphy art. It argues that calligraphy art

exhibits a greater diversity of design applications in the digital media era. Our objective is to offer valuable insights for the diversification of traditional calligraphy in the digital age, adhering to the requirements for academic publication.

2 Transformation of Traditional Design through Digital Media Technology

2.1 Paradigm Shift

Design activities have been an intrinsic part of human endeavors since the inception of civilization. Dating back to the Paleolithic era, our ancestors began creating visual representations on cave walls and various artifacts. Although these early graphics conveyed relatively simplistic content, they served as an intuitive and direct means of communication that predated written language [1]. As time advanced, and with the evolution of papermaking, printing technologies, and the contemporary utilization of audiovisual tools, followed by the introduction of computers, the spectrum of tools available for design has progressively diversified (Figure 1).

This transformation has redefined the dimensions of time and space associated with creative endeavors. Historically, the creation of a single work of art could span weeks, months, or even years. However, in the digital media era, particularly with the advent of artificial intelligence, producing a piece of artwork can be accomplished within seconds. This liberation from laborious physical processes has allowed individuals to channel their focus more intensely into creative ideation. The emergence of scientific and technological advancements has necessitated a shift in our cognitive approach to creativity within the realm of artistic creation. Presently, there is a heightened emphasis on innovation and creativity, reflecting an adaptation to the evolving landscape of artistic expression.

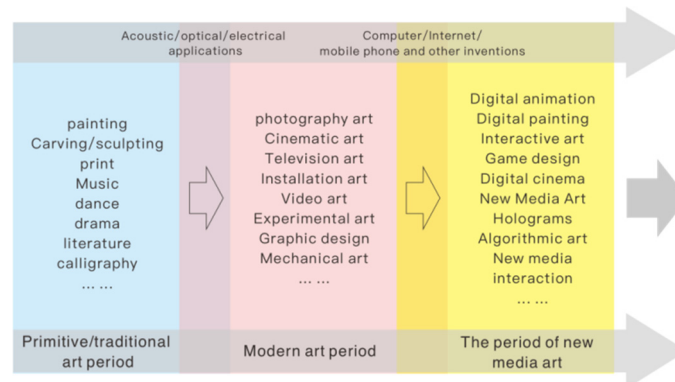


Fig. 1. The evolutionary relationship between art and emerging media

2.2 Evolution of Skills and Tools

In the era of digital media, the continuous advancement of technology has enriched and accelerated the utilization of tools and techniques for individuals. This transition from traditional manual methods to software applications has significantly enhanced efficiency across various

industries. For instance, in the field of graphic illustration design, traditional hand-drawing techniques initially prevailed. Subsequently, computer graphics software such as Photoshop, Coreldraw, and Illustrator took center stage. Presently, a new wave of AI-based drawing tools is emerging. According to publicly available data, it is projected that in 2022, the market size for generative AI applications in China will reach 66.3 billion yuan, and it is expected to grow to 207 billion yuan by 2025 (Figure 2). Therefore, technological advancements inevitably result in changes in the tools employed.

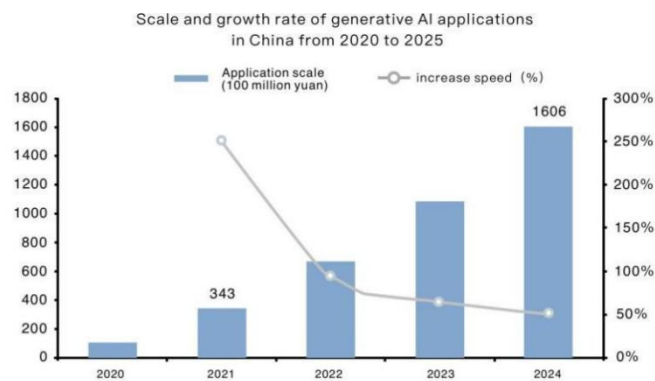


Fig. 2. Scale and growth rate of generative AI applications in China
Image source:www.huaon.com

3 Application Status of Calligraphy Art in the Digital Media Era

3.1 Traditional Art Field

For a long time, the concept of calligraphy art has been perceived by the general public as a pure art form, with most people associating it with personal cultivation and hobbies. However, the study of calligraphy art should fundamentally involve an understanding of its artistic concepts and principles [2]. Unfortunately, contemporary calligraphy art education often dwells only on the superficial aspects of form, with a simplistic understanding that boils down to whether calligraphy looks "good" or "not good," with a heavy emphasis on technique. This approach deviates from the traditional and comprehensive principles of calligraphy learning. Moreover, within the professional domain, there has been a prevailing emphasis on the "exhibition" aspect of calligraphy, focusing on the effect within exhibition halls. Some individuals have ventured into eye-catching calligraphy performance art, such as shooting ink or even performing calligraphy in the nude, which deviates entirely from the inherent characteristics of calligraphy.

3.2 Art and Design Field

Calligraphy, as a design element, finds extensive application in various fields, including graphic design, stage design, dynamic film and television design, and more. Calligraphy art possesses unique aesthetic principles, characterized by the flow of lines and spatial structures, making it a significant design element in various domains. For instance, in the field of font design, calligraphy fonts are an indispensable part of various font libraries in China. Fangzheng and Hanyi fonts dominate a significant market share, with Fangzheng offering 628 styles of

simplified Chinese fonts, including 176 styles of calligraphy handwritten fonts and 80 creative fonts with calligraphy characteristics. Meanwhile, Hanyi offers 478 styles of simplified Chinese fonts, including 54 styles of handwritten calligraphy fonts and 60 creative fonts with calligraphy features. Furthermore, there are even more artistic fonts related to the fonts of famous calligraphy masters (Figure 3). From a market perspective, calligraphy fonts enjoy substantial popularity.

Secondly, in fields like graphic design, countless cases exist where calligraphy elements are employed in design. Renowned Hong Kong graphic designer Kan Tai-keung, for instance, frequently incorporates ink brushstrokes into his poster designs. In the realm of movie poster design, traditional calligraphy fonts are commonly used, as seen in the posters designed by artist Huang Hai for Chinese films.

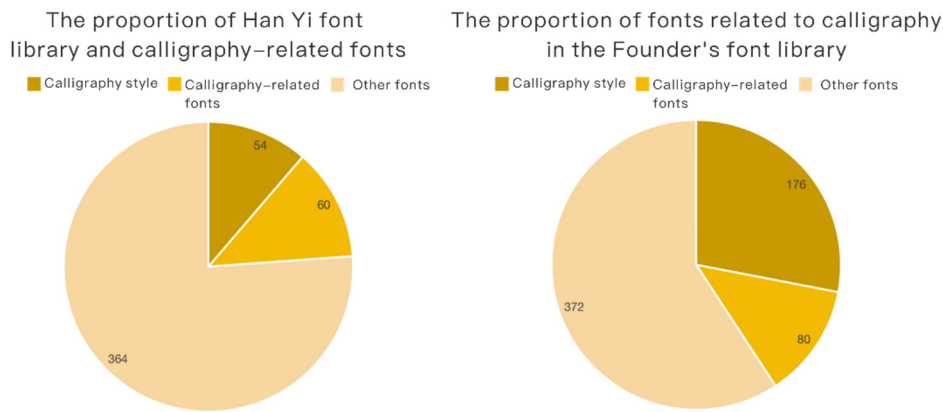


Fig. 3. Hanyi and Founder's calligraphy font scale
Data sources: www.foundertype.com www.hanyi.cn

4 Impact of Digital Media Technology on Calligraphy Art and Design

The development of digital media technology has witnessed a dual transformation in both technology and ideology. It has not only improved efficiency but also expanded the platform for expressing traditional culture. Under the influence of digital media technology, traditional calligraphy finds broader applications, especially in the field of design. The ink colors, lines, and spatial characteristics of calligraphy influence the way design is presented. The application of calligraphy art conveys the spirit of Chinese ink painting, using black and white to express rich meanings, embodying the traditional philosophical concept of "the greatest virtue is to be simple." This gives modern design a traditional charm and highlights its cultural significance.

In the field of design, calligraphy art has gained new vitality through emerging digital media technologies. For example, the Henan TV program "Ink Dance Mid-Autumn Scroll" (Figure 4) seamlessly incorporated Wang Xianzhi's "Mid-Autumn Scroll" from the Jin Dynasty into the show. Leveraging digital media technologies and employing a fusion of reality and virtuality, the program reproduced the process of writing calligraphic scrolls by combining calligraphy strokes with dance movements. This unique visual effect, created through the fluidity of both

the actors' dance and the strokes of the calligraphy, carries profound cultural significance.

Furthermore, in the realm of virtual reality (VR) technology, calligraphy has experienced a rebirth. For instance, in 2016, the Taipei National Palace Museum collaborated with HTC to introduce a calligraphy immersive VR installation titled "Self-Narrative · State of Mind." (Figure 5) This installation showcased the continuous flow and dynamic artistic beauty of calligrapher Huaishu's work "Self-Narrative Scroll" through virtual technology, presenting it before the eyes of the experimenter.



Fig. 4. Ink Dance Mid-Autumn Scroll



Fig. 5. Self-Narrative · State of Mind

Therefore, as an integral facet of traditional culture, calligraphy must not only retain its inherent traditional artistic allure in the digital media era but also adapt to the diverse demands of contemporary times. Design serves as a pivotal platform for showcasing and applying traditional culture. Hence, leveraging digital media technology becomes particularly crucial in diversifying traditional calligraphy art.

5 The Diversified Design Strategies of Calligraphy Art from the Perspective of Digital Media

5.1 Traditional Design Centered on Chinese Characters

Calligraphy art is intrinsically linked to Chinese characters, making these characters the cornerstone of its expression. While calligraphy also exists in Japanese culture, it differs fundamentally as an art form, originating from Chinese characters [3]. Calligraphy relies on Chinese characters as its medium and generates artistic aesthetics through spatial patterns, writing conventions, and the kinetic beauty inherent in the act of writing. Hence, in the era of continuous technological advancement characterized by digital media, preserving the innate essence of calligraphy is of paramount importance.

Furthermore, by incorporating the aesthetic characteristics of calligraphy into Chinese character design within the digital domain, through the extraction and transformation of traditional calligraphic features, we can infuse digital media with calligraphy's classical charm. For instance, in font design, we can extract features from traditional calligraphy works and use design software to create artistic fonts that capture the essence of tradition. Several typefaces in both Fangzheng and Han Yi font libraries, such as "Xuanzhen Seal Transformation" in Fangzheng, are examples of fonts designed with traditional seal script characteristics in mind.

In addition, by combining virtual reality technology with traditional calligraphy, it's possible to showcase the process of writing Chinese characters in a dynamic and immersive manner. This can include animations, music, and other elements that allow the audience to emotionally connect with the act of calligraphy. This approach transforms calligraphy, which is traditionally a static and abstract art form, into something lively and engaging. It has the potential to effectively attract the younger generation while preserving and innovating on tradition.

5.2 Interaction Design Rooted in Writing Culture

As mentioned earlier, traditional calligraphy possesses distinctive features such as ink, brush strokes, and layout. These characteristics have evolved over a long period and form the foundation of calligraphy aesthetics. In the digital media era, while preserving tradition, the use of digital media technologies like electronic drawing screens and stylus pens can be a worthwhile endeavor. Through these technological means, the culture and aesthetic experience of calligraphy can be transplanted onto digital media.

For instance, Chinese calligraphy enthusiasts have created interactive installations that apply the brushstrokes and structural elements of Chinese character writing to digital art. The "Zishou" interactive art installation (Figure 6) enables participants to digitally recreate traditional calligraphy strokes on an electronic screen. The display then interprets these strokes, transforming them into various dynamic images. This experience combines traditional writing techniques with digital painting technology, creating an interactive and visually appealing encounter.

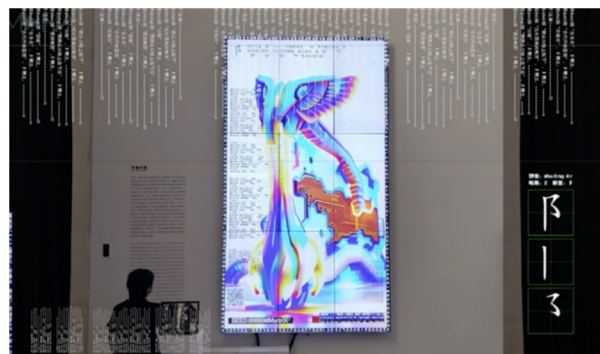


Fig.6."Word Beast" interactive device
Source: www.manamana.net

Furthermore, traditional calligraphy involves dynamic three-dimensional movements, as the writing instrument, such as a brush, creates variations in ink thickness and texture. Japanese scholars recognized this characteristic and designed a "Z-axis" concept pen, allowing users to create digital strokes with blurry and ink-penetrating effects on digital media devices[4]. These innovations, exemplified by "Zishou" and the "Z-axis" pen concept, represent the fusion of tradition and modernity. The former not only innovatively preserves and passes on traditional culture but also attracts people to experience and draw strength from it. The latter extracts distinctive features from traditional art to drive advancements in digital media technology, enhancing the interactivity of calligraphy art in the digital media realm.

5.3 Innovative Design Rooted in Cultural Concepts and Experiences

From the perspective of digital media, diverse modes of communication and creativity present both challenges and opportunities for traditional culture. The artistic value of calligraphy extends beyond abstract lines and ink; it lies in the thousands of years of Chinese culture it embodies. Therefore, in the application of digital media technology to traditional calligraphy, cultural experience and communication should be considered. This experience goes beyond mere writing expression; it should also convey the profound cultural significance of traditional Chinese civilization. Currently, the introduction of new technologies, such as ChatGPT, has initiated a new technological revolution. Combining the deep cultural significance of traditional calligraphy with emerging technologies like virtual reality and AI painting can create art pieces with digital characteristics for the new era. Utilizing advanced digital media tools and wide-reaching dissemination, it is possible to promote the outstanding qualities of traditional culture, fostering exchange and learning.

For example, the annual "Collect the Five Blessings" activity on Alipay uses AR technology and facial recognition to allow people to collect and "write" blessings, immersing them in the traditional atmosphere of the Spring Festival. This activity has become a new tradition in the digital media age. In the field of AI painting, Baidu's "Wenxin Yige" also introduces artistic calligraphy generation as a distinctive feature.

In addition, museums play a crucial role in experiencing traditional culture. Foreign scholars have combined virtual reality technology with Tang Dynasty murals in China to design an interactive installation. Focusing on the structure of ancient tombs and murals' content, the researchers integrated traditional Chinese culture's philosophical thought of 'harmony between man and nature' into digital media technology and reshaped the digital situational design. This installation to provide the audience with a better situational experience, promote the interaction between cultural relics, the environment, and the audience, and effectively improve their visiting cognition[5]. Therefore, integrating traditional cultural concepts and experiences into the application design of digital media technology will have a more profound and widespread impact.

Therefore, traditional calligraphy should harness the potential of digital media technology, which enhances the experiential aspect, and incorporate the concept of cultural experience into innovative design, paving a new path for the promotion of traditional culture.

6 Conclusion

This article explores the diversified design applications of traditional calligraphy art from the perspective of digital media. By considering the current state of the integration of calligraphy art and digital media, as well as the influence of emerging technologies on traditional calligraphy and design, it unveils the new landscape of calligraphy art in the digital age. It also suggests that traditional calligraphy should evolve towards diversified design, providing valuable insights for the preservation and innovation of calligraphy art. Exploring the multifaceted applications of traditional calligraphy art from the standpoint of digital media, and fostering innovative developments in both calligraphy art and design, holds significance not only for calligraphy

itself but also for the exploration of the reapplication of traditional calligraphy in contemporary design.

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