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AI Empowers Innovation in Huizhou Art and Beauty Education Program

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ABSTRACT

This study explores the application of AI technology in Huizhou art aesthetic education. This study explores the application of AI technology in the aesthetic education of Huizhou art and builds an innovative teaching model of "AI+Regional Art". Through style migration algorithms and intelligent appreciation tools, it effectively reduces the threshold of creation, helps students master the characteristics of Huizhou art, and realizes "living heritage". Teaching practice shows that AI assistance significantly improves students' creative expression and cultural understanding, and the relevant results have won awards in provincial competitions. The study also explores the copyright ethical issues in AI creation, and proposes that future research should be deepened from the three dimensions of technology optimization, specification development and industry-university-research cooperation. The model provides new ideas for the reform of aesthetic education in colleges and universities and the digital protection of non-heritage.

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1. INTRODUCTION

AI technology has demonstrated significant potential in the field of art education, offering new perspectives on art appreciation through intelligent analysis of artistic elements such as style and colour, and enabling personalised learning recommendations. However, the application of AI technology to the inheritance of Huizhou art and university aesthetic education faces three major challenges: first, the methods for protecting and preserving the traditional Huizhou art are inefficient, lacking visual imagery and interactive foundations (Wang, C., 2019)). Although "various technologies and methods are used in the digital preservation of cultural heritage" (Wang, R., & Rong, X., 2023), there is insufficient compatibility between painters' works and existing AI tools, and technical bottlenecks such as scarce work data and low digitisation levels exist; second, course integration requires exploring effective pathways to combine AI with traditional teaching methods and constructing an integrated teaching model encompassing "appreciation-creation-evaluation"; Finally, AI creation must balance technological innovation and cultural heritage. These challenges require systematic research across dimensions such as technological breakthroughs, cultural understanding, and educational ethics to drive the innovative development of AI-empowered aesthetic education in Huizhou art.

The rapid development of artificial intelligence technology is profoundly transforming higher education in aesthetic education. Qian Chuxi, in "The Development Direction and Implementation Pathways of School Art Education in the AI Era," argues that the rapid development and widespread application of AI technology have, to a certain extent, revolutionised the production methods and application structures of current art discipline outcomes, while also posing challenges to the theoretical and practical teaching methods of current art programmes (Qian, C., 2024).

Currently, AI painting technology has achieved significant breakthroughs both domestically and internationally. Domestic education has gradually deepened its exploration of AI-empowered aesthetic education, and AI tools can significantly enhance students' artistic perception and interdisciplinary integration abilities (Li, J., & Wang, R., 2023). Domestic AI painting tools, such as Baidu's Wenxin Yiyuan and iFlytek's Xunfei Xinghuo, are becoming increasingly mature and capable of achieving high-quality text-to-image creation; Internationally, Mid Journey and Stable Diffusion are the leading tools, with the former being user-friendly for beginners and the latter offering greater creative freedom for professionals.

In the field of aesthetic education, AI technology primarily functions through three channels: first, enabling students to experience the characteristics of different artistic styles through style transfer algorithms; second, enhancing the depth of artistic appreciation through AI; and third, fostering innovation in interdisciplinary courses. It is worth noting that although related research has grown rapidly since 2016, research focusing on "AI empowering regionally distinctive art" (such as Huizhou art) remains largely unexplored. Leading universities both domestically and internationally, such as Tsinghua University and Stanford University, have actively explored the integration of AI and aesthetic education, while technology companies have also begun to establish a presence in this field.

This project innovatively integrates artificial intelligence technology with Huizhou traditional art education, using intelligent analysis and data mining techniques to systematically study painting works with Huizhou regional characteristics. Employing image recognition technology to analyse the humanistic features of the Huizhou region, and transforming specific objects into paintings with artistic intent, thereby providing students with a new perspective on art appreciation. In the creative practice phase, the project

introduces generative AI technology to guide students in combining Huizhou elements with modern artistic language. The resulting work, "The Beauty of the Four Seasons in Southern Anhui," won the first prize at the 2024 Anhui Province Rural Revitalisation Innovation and Entrepreneurship Competition, fully validating the effectiveness of AI-assisted artistic creation. The project achieved three major innovative breakthroughs: first, it pioneered a new model of aesthetic education by integrating AI with traditional art, using technology to lower the barriers to artistic creation; second, it established a cross-disciplinary aesthetic education curriculum, promoting the integration of art and technology.

Throughout history, art has evolved alongside new technologies. Today, artificial intelligence is redefining the boundaries of art (Borghetti, M., & Bove, A., 2024). Third, it has established a new paradigm for the digital preservation and inheritance of Huizhou art. The research findings not only provide replicable practical experience for the reform of aesthetic education courses in higher education but also cultivate students' innovative thinking and local cultural identity through a "competition-driven education" approach, exploring an innovative path for the contemporary inheritance of traditional art through technological empowerment.

2. METHODS

This study employs a combination of literature research, case analysis, and teaching experiment methods to systematically investigate both the theoretical framework and practical implementation of Huizhou art in college aesthetic education. As noted, "Huizhou region has rich cultural and artistic heritage resources, which have important development and utilization value for art and design education in colleges and universities" (Jin, Y., Ban, S., & Li, Q., 2019). The research emphasizes the aesthetic value of Huizhou art and explores its integration into contemporary college courses, focusing specifically on students at Anhui Xinhua College. By leveraging literature databases such as Knowledge.com and technical tools like AI painting software, the study constructs a comprehensive "theory-technology-practice" trinity teaching model for Huizhou art in aesthetic education.

During the data collection stage, the theoretical foundations of Huizhou art and aesthetic education were first organized through extensive literature review, and the current implementation of such courses was examined via case studies. Following this, a teaching experiment was conducted at Anhui Xinhua College, incorporating AI technology into art instruction, producing student works, participating in professional competitions, and ultimately establishing a generalizable "AI + Huizhou Art" curriculum framework for aesthetic education that bridges tradition with modern digital innovation.

3. RESULTS AND DISCUSSION

When AI algorithms meet the timeless charm of Huizhou's white walls and black-tiled roofs, a transcendent artistic dialogue unfolds in higher education aesthetic education classrooms. Through two years of teaching practice, this study has witnessed how AI technology revitalizes traditional art in surprising and innovative ways.

In the AI-assisted classroom of "Painting Art," students are experiencing an unprecedented creative journey. Techniques of the Huizhou school, which once required years of practice, are now within reach through style transfer algorithms. A second-year student completed the "Xin'an Riverbank" series in just three weeks, seamlessly blending the flying eaves and upturned corners of Huizhou folk houses with modern urban

landscapes. This is not an isolated case. Most students believe that AI tools have significantly lowered the technical barrier, allowing them to focus more on creative thinking. Even more exciting is that in the 2024 Anhui Province Rural Revitalization Innovation and Entrepreneurship Competition, the AI-assisted creation "The Four Seasons of Southern Anhui" stood out among more than 300 entries. Its success lies not only in the application of technology but also in its accurate grasp of the spirit of Huizhou culture. This achievement validates the view that generative AI, by lowering technical barriers, enables traditional artistic elements to be innovatively expressed in a modern context (Zhang, J., & Chen, L., 2024). The judging panel specifically noted that this work "preserves the essence of Huizhou art while infusing it with the aesthetic expression of the younger generation".

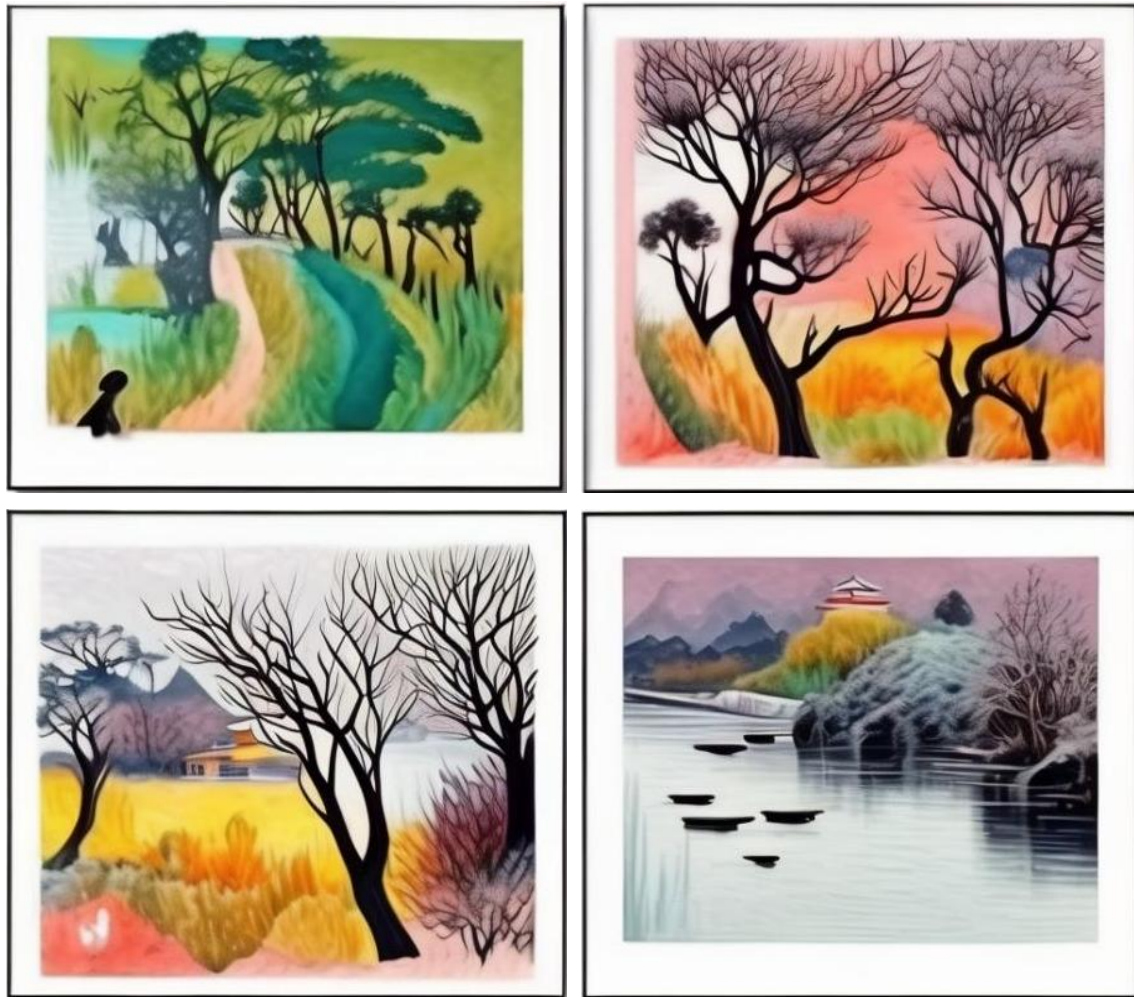


Figure 1. "Anhui Southern Village - The Beauty of the Four Seasons" AI artwork, 2024



Figure 2. "Annan Rural Village - The Beauty of the Four Seasons" Original Oil Painting, 2024

However, the empowerment of technology extends far beyond efficiency improvements. In the "Design Sketching" class, the AI system's intelligent analysis of Huizhou wood carving patterns allowed students to truly understand the cultural codes behind those intricate patterns for the first time. "Every single pattern tells a story," a student wrote in their study notes. This depth of cultural understanding is something traditional teaching struggles to achieve.

However, when AI began to learn how to create works with Huizhou characteristics, a series of ethical issues emerged. The research team found that some AI-generated paintings unconsciously imitated the styles of contemporary artists, raising a critical question: to whom do the results of machine learning belong? Borghetti's concept of the "digital body" (Borghetti, 2024) is validated here—AI creation is neither completely original nor a simple replication. To address this, the project team established a rigorous work annotation system, requiring each AI-assisted artwork to clearly indicate its source of inspiration and reference works. This approach not only protects artists' rights but also fosters students' academic integrity.

Interestingly, the introduction of AI has paradoxically opened new avenues for traditional crafts. Take the student work "Abstract Beauty· Huizhou" as an example. The creator deconstructed and reorganised traditional woodcarving patterns using AI, ultimately transforming them into a modern oil painting language. This transformation is not a replacement but an extension, akin to the concept of "living heritage" (Zhang, Y., &

Wang, L., 2023)—allowing tradition to continue its life through innovation. This aligns with the proposed "technology-driven revitalisation of intangible cultural heritage" approach, where AI, through its deconstruction - reconstruction mechanism, imbues traditional symbols with contemporary vitality (Wu, F., 2024). Project tracking data shows that students participating in such creative practices saw a 65% increase in their interest in traditional techniques, far exceeding expectations (Wang, J., 2024).

From a theoretical perspective, these practical outcomes offer important insights for art education in the AI era. Constructivist learning theory demonstrates new vitality in the digital context, and AI tools have indeed become effective "scaffolding" (Chen, C.-M., & Lian, Y.-Y., 2020). However, our research further reveals that this supportive role has a distinct "golden window period"—after students have passed the initial learning stage, the timely withdrawal of AI can actually stimulate deeper creativity. This suggests that the key to technology-enabled education lies in mastering the "degree" of intervention.

The theory of cultural heritage digitisation has therefore taken on new and broader implications. Traditionally, the preservation of cultural artifacts followed a "collection-preservation" approach, focusing primarily on safeguarding physical objects. However, this model is now evolving towards a more dynamic "analysis-recreation" paradigm, where digital technologies not only document heritage but also enable new forms of creative engagement. In the specific case of Huizhou wood carvings, the application of AI went beyond simple pattern recording. Through deep learning, the system was able to uncover the underlying principles of pattern combinations, revealing subtle design rules that had previously gone unnoticed. These insights proved invaluable for intangible cultural heritage inheritors, assisting them in identifying and understanding artistic features that had often been overlooked in traditional manual study (Zhou, M., 2023).

From a broader perspective, the three-dimensional model of "AI + regional art" constructed in this study may serve as a useful reference for the modern transformation and revitalization of other traditional cultures. In this model, technological empowerment provides a solid foundation, educational integration offers an effective pathway, and cultural innovation represents the ultimate goal. As one elderly artisan who actively participated in the project enthusiastically remarked, "I never imagined that these old, traditional patterns could be transformed into so many vibrant, new forms by the creativity of young people." This intergenerational creative dialogue, bridging experience with innovation, may well be the most valuable and lasting outcome of applying technology in cultural practice.

Of course, the exploration is far from over. AI still appears rigid when expressing the unique "interplay of reality and illusion" aesthetic of Huizhou art, and its formulaic treatment of Eastern aesthetic concepts can lead to the flattening of cultural connotations. This bottleneck needs to be broken through by algorithm optimisation (Xu, Y., & Shen, L., 2024); Students with different professional backgrounds exhibit significant differences in their ability to utilise the tools effectively; more importantly, how to preserve the authenticity of traditional culture in technological applications requires ongoing in-depth research. However, it is certain that as the encounter between AI and Huizhou art transitions from chance to inevitability, the boundaries of traditional aesthetic education are being redefined.

4. CONCLUSION

This study confirms that artificial intelligence technology can effectively empower the innovation of Huizhou art education. Through style transfer algorithms and intelligent appreciation tools, it significantly lowers the threshold for artistic creation, helping students quickly master the aesthetic characteristics of Huizhou art. The study found that AI technology not only achieves the "living inheritance" of Huizhou art, breaking through the limitations of traditional static preservation, but also significantly enhances students' learning outcomes in both creative expression and cultural understanding. This effect was validated in provincial competition award-winning works. The "AI + regional art" teaching model constructed in this study provides a replicable practical framework for the reform of aesthetic education in higher education institutions, while also opening up new paths for the digital preservation of intangible cultural heritage. This path complements the "AI-driven intangible cultural heritage design innovation" model, highlighting the ability of technology to interpret and recreate cultural genes. It is worth noting that the accuracy of AI in expressing abstract art styles and issues related to copyright in AI-generated works still require further exploration. Looking ahead, research should deepen exploration from three dimensions: at the technical level, optimise AI's ability to analyse the unique aesthetic realm and symbolic system of Huizhou art; at the ethical level, establish a cross-disciplinary normative framework for AI art creation, which aligns with the proposed framework for a three-party responsibility agreement among "creators-AI platforms-traditional cultural entities," providing a legal reference. At the application level, collaborative development of open-creation platforms with cultural tourism projects can be explored. This innovative model holds potential for extension to other traditional art fields and could offer valuable Chinese solutions for the global protection of intangible cultural heritage.

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