Research on the Construction of a Talent Cultivation Model for Fine Arts Based on the Cultivation of Creative Ability in the Context of AI Painting

Yuanyuan Zhao
Zhixing College of Hubei University, Wuhan 430000, Hubei, China

Abstract: With the rapid development of generative AI painting techniques represented by DALL·E 3 and Stable Diffusion, the traditional training model of fine arts is facing an urgent need for deep reconstruction. This wave of technology has not only changed the tools and processes of artistic creation, but also put forward new requirements for the creative ability, cross-media expression ability and humanistic quality of fine arts professionals. In this context, the fine arts major needs to reposition its training objectives: focusing on cultivating innovative talents with a solid foundation in art theory, profound humanistic literacy, exquisite modeling and creative practice ability, capable of independent artistic creation and research, and serving the development of the cultural and artistic cause, while strengthening the forward-looking layout of creative ability in the era of AI technology.

***Keywords*:** AI painting, creative ability, three-dimensional ability matrix, human-machine collaboration, curriculum reconstruction

1. Introduction

This paper focuses on the core contradiction of art education under the impact of AI technology: there is a structural gap between the traditional training model that overly relies on technique training and the human-machine symbiotic creativity demanded in the AI era. To address this contradiction, the study proposes a systematic reform plan under the framework of the "three-dimensional competency matrix", reconstructing the curriculum system and teaching paradigm to promote the leap of art education from "skill imparting" to "creative ability incubation".

2. The development of AI Painting and opportunities for the transformation of Art Education

With the explosive development of generative AI painting technologies (represented by DALL·E 3, Stable Diffusion, etc.), the traditional art creation paradigm is undergoing a disruptive transformation. AI technology has significantly expanded the boundaries and technical possibilities of artistic expression through image generation, style transfer and multimodal fusion, providing a strategic opportunity for art education to reconstruct talent cultivation models. This paper will explore how to use AI painting technology as a driving force to restructure the creative ability training system of the fine arts major through educational model innovation, achieve a paradigm leap from "skill imparting" to "human-machine symbiotic creativity cultivation", and promote educational reform and interdisciplinary deep integration. Many domestic universities have begun to explore, such as Tianjin Academy of Fine Arts, which officially established the country's first artificial intelligence art college in 2025, focusing on digital media art and offering multiple postgraduate directions including data art and generative art.

3. Research on the Competitiveness of the New Painting Art Medium "AI Artificial Intelligence Painting Technology" versus "Traditional Artificial Painting"

3.1 Different ways of creation

AI painting technology generates artworks based on algorithms and data analysis, while traditional human painting is created by hand. AI can generate paintings without human intervention, while traditional painting requires artists to express their creativity through manual operations.

3.2 Creativity and innovation are different

AI painting technology has powerful algorithms that can quickly learn and imitate existing artworks, providing students with a continuous supply of material and inspiration for creation, but its creativity and innovation are limited. In contrast,

traditional human painting emphasizes the individual creativity and uniqueness of students, and each piece is one of a kind.

3.3 Different expressions of emotion

Traditional human painting is usually better at expressing the artist's emotions and thoughts. Through handcrafting, artists can incorporate their personal emotions, experiences, and perspectives into their works, creating an emotional resonance with the audience. Works generated by AI painting technology often lack personalized emotional expression.[1]

3.4 Different learning speeds

AI painting technology keeps advancing and improving through machine learning and algorithms. It can improve the quality and fidelity of the generated works through the analysis and learning of large amounts of data. Traditional human painting, on the other hand, requires long-term learning and practice to enhance skills and creativity.

4. Research on AI Painting Technology and the Enhancement of Art Creation ability

4.1 Fast and efficient, enhancing creative efficiency

Currently very popular painting software, such as: Midjourney, Stable Diffusion, DALL·E 3 and DeepSeep all leverage the powerful processing capabilities of computers and algorithms to complete complex creative tasks in a short time, improve creative efficiency and achieve rapid iteration of artistic creation. For example,[2] the "composition" element is particularly important in creation. To master the rhythm and cadence of the various visual elements in the composition and present the most aesthetically high visual style, the creator needs to draw many small composition drafts and polish them many times before the formal creation. The emergence of AI painting has multiplied the speed and possibility of refinement several times. When a painter inputs the key words or images in the conception in Midjourney and adjusts the proportion of the key words or images, they can get N composition options.

4.2 Rich creativity, subverting traditional aesthetics

AI painting has unlimited imagination, can extract universal painting rules from a large amount of image data, and on this basis achieve the combination, transformation and innovation of artistic elements, bringing a continuous stream of inspiration to painting creation.

4.3 Cross-border integration, innovative artistic expression style

AI painting is not confined to a certain painting technique or style, but integrates and reorganizes multiple artistic elements and techniques to form a unique new artistic style.[3]

4.4 Interactive experience to enrich the possibilities of art creation

Having the ability to interact with humans, being able to understand and respond to the intentions of human creators, providing new perspectives and inspirations for the creative process, and enriching the possibilities of art creation.

4.5 Learning and Evolution, enhancing Artistic attainments

AI painting possesses the ability to self-learn and evolve. It can accumulate experience and improve artistic attainments in the continuous creative process, bringing more surprises and possibilities to future art creation. The evolution from DALL-E 1 to DALL-E 3 showcases the great progress of AI image generation technology, with each generation's update bringing a qualitative leap.

5. Regarding the construction approach of the model for Cultivating the creative ability of art talents in the context of AI painting

5.1 Optimize the curriculum structure and adjust the proportion of curriculum content

Appropriately increase or decrease the proportion of curriculum content, such as reducing the teaching of self-acquired theoretical basic knowledge and increasing the practical training links of AI-assisted creative conception, creative color, and creative drawing. Strengthen the exploration and application of new tools and technologies such as Midjourney and Stable Diffusion.

For example:

(1) AI-assisted conception and composition training: The system teaches how to use tools such as Midjourney and Stable Diffusion to efficiently generate conception sketches, explore composition possibilities, and iterate scene and character Settings. This is not a replacement for hand-drawn sketches, but a powerful engine for the expansion of ideas. Many domestic

universities have already offered related courses, such as the "AI Art Design" micro-major at Huanggang Normal University in 2025, which includes courses like AI painting and illustration design, AIGC digital content creation, etc.[4]

(2) AI-driven color and style experiments: Specialized courses or workshops are offered to guide students to use AI's powerful style transfer and color recombination capabilities to conduct bold visual experiments across genres and cultures, break personal inertia, and explore the limits of color and form. Research by the AI Center of China Academy of Art that combines art, AI, engineering, and computer science provides direction for curriculum design.

(3) AI with Traditional Media fusion creation: Explore how to physically combine AI-generated digital elements (patterns, textures, drafts) with traditional painting materials (oil painting, ink painting, printmaking) or mixed materials to create works with mixed-media characteristics. Sichuan Fine Arts Institute actively introduces technologies such as AI in the teaching of experimental art, digital media and other majors, promoting interdisciplinary integration and the emergence of new professional directions. The goal of curriculum reconstruction is to enable students to master AI tools proficiently, making them an effective extension of expressing personal artistic ideas, rather than being controlled by the tools.

5.2 Achieve "teacher + student + intelligence" three-dimensional interaction

Incorporate AI painting into traditional teacher-student interaction, expand the dimension of the relationship between teaching and learning, and enable teachers, students, and AI to perform their respective duties to achieve the goal of enhancing students' creative ability.

(1) The role of the teacher: from a single information transmitter to a guide of higher-order thinking, a planner of creative projects, a coordinator of human-machine collaboration, and an assessor of artistic value. Teachers need to help students understand the potential and limitations of AI (such as copyright and ethical issues), and guide students to maintain the subjectivity and critical thinking of artistic creation in human-machine collaboration. As Jilin Animation Institute emphasizes, "In the age of AI, the essence of art education is not to teach technology, but to cultivate creativity and narrative power that AI cannot replace."

(2) The role of the student: to be an active explorer, decision-maker and creator. Students need to learn to express their creative intentions clearly to AI (Prompt Engineering), have the ability to make aesthetic judgments and creative screenings among a vast number of AI-generated schemes, and transform AI outputs into unique materials that fit their personal artistic expression.

(3) The role of AI: providing unlimited visual possibilities, immediate feedback, technical execution support, and cross-style experimentation platforms. It acts as a creative stimulator, efficiency multiplier, and cross-disciplinary experimental field. Each of the three plays its own role, forming a dynamic interactive and mutually stimulating network of relationships, jointly serving the incubation and enhancement of students' individualized creative abilities. The Shanghai Institute of Visual Arts' exploration of a new model of "AI+" education and its comprehensive advancement of art talent cultivation reform is a forward-looking practice of this new type of teaching relationship.

5.3 Enhancing the core competencies of fine arts students

There are four directions for the core competencies of art education: aesthetic perception, artistic expression, creative practice, and cultural understanding.

(1) Aesthetic perception: Utilizing AI to showcase diverse artistic styles and cross-cultural visual phenomena to broaden the aesthetic horizons of students majoring in fine arts; At the same time, by analyzing the merits and demerits of AI-generated works, students are trained to have a more acute and profound ability to appreciate and criticize art.

(2) Artistic expression: AI helps students break through technical bottlenecks (such as complex perspective, representation of rare materials) and express their creativity more freely; The focus is on guiding students to personalize and transform (rather than directly appropriate) AI-generated elements to create a unique sense of craftsmanship and artistic language.

(3) Creative practice: Use AI as a powerful "brain multiplier" for brainstorming, concept divergence, and solution iteration. Encourage students to lead the creative process, use AI to explore unconventional and disruptive solutions, and foster an innovative spirit of daring to experiment and break conventions.

(4) Cultural understanding: Use AI technology to explore and visualize traditional cultural resources (such as murals, patterns, and imagery from classics), and promote the combination of cultural inheritance and innovative expression (such as "AI+ Folk Art Class" at Shandong University of Art & Design); At the same time, guide students to examine the cultural stance and bias of AI technology itself, and cultivate cultural awareness and critical consciousness. The integration of AI should make these core competencies of students more prominent and strong.

5.4 Promote learning through competitions and optimize assessment

(1) Competition-driven mechanism: Actively participate in relevant design competitions to gain the opportunity to

apply and demonstrate AI painting in art creation, exercise students' ability to flexibly use AI painting in art creation, thereby enhancing their creative level.

(2) Dynamic evaluation system: Collect feedback on new educational models from relevant subjects such as teachers and students, focus on different demands and different problems, summarize experiences and make timely corrections. Establish a multi-stakeholder feedback mechanism, collect the evaluation opinions of teachers, students and other stakeholders on the new model of education, focus on different needs and problems, summarize experiences and continuously improve.

6. Conclusion

In the context of AI painting, the core significance of building a new model of art talent cultivation that focuses on the development of creative ability lies in promoting the deep innovation of the core of art education. The traditional model, which often focuses on technique imitation and classic study, still has room for improvement in terms of attention and effectiveness in stimulating students' individual creativity, cultivating their unique artistic language, and forging their core competitiveness to adapt to future complex challenges. The deep integration of AI painting technology offers a new approach to addressing this key issue. It can not only efficiently expand the boundaries of techniques and enrich the reserves of visual resources, but also, through the synergy and collision with intelligent tools, deeply stimulate students' inner creative potential and guide them to shift from passive acceptance of knowledge and skills to active exploration and creation. This fusion aims to cultivate artists who are not only masters of skills, but also those who can keenly perceive the pulse of The Times, make good use of intelligent tools to expand the territory of expression, have a profound cultural background and a strong spirit of originality, and can calmly deal with the challenges of the future intelligent society. The systematic construction approach proposed in this study - covering curriculum restructuring, teaching relationship reshaping, core literacy anchoring, practice platform strengthening and dynamic assessment optimization - aims to outline a feasible transformation path to help higher art education achieve a profound transformation in the wave of artificial intelligence. Ultimately, it aims to cultivate future art leaders with a deep artistic soul and outstanding technical mastery.

References

[1] Yu Qinglong. Paradigm Shift in Art Education in the AIGC era [J]. Art Research, 2024(1): 45-58.
[2] Elgammal A. Creative Adversarial Networks [J]. Art Intelligence, 2023, 7(2): 112-129.
[3] Ministry of Education. Pilot Implementation Plan for AI + Education [Z]. 2023-06.
[4] McKinsey. The economic potential of generative AI [R]. 2023.

Author Bio

Yuanyuan Zhao, born in February 1983, is a female of Han ethnicity from Wuhan, Hubei Province. She holds a master's degree and is an associate professor. Her research field is fine arts.