

Teaching Design and Practical Research of "Children's Painting" Course in Higher Vocational Education based on AIGC

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Abstract

Against the dual backdrop of educational digital transformation and artificial intelligence technological innovation, this study focuses on the deep integration of AIGC technology and the "Children's Painting" course in higher vocational education. It systematically analyzes the current real-world dilemmas of the course in aspects such as creative inspiration, technical application, and vocational connection, and innovatively constructs a three-dimensional teaching model of "technology integration-intelligent assistance-creative guidance". Relying on the advantages of interdisciplinary teaching teams in colleges and universities and the dual practice platforms of "infant education training rooms + intangible cultural heritage characteristic venues", it explores the full-process teaching path of "AI material generation-intelligent creation optimization-child aesthetic education practice". Through visual charts, it presents the curriculum module framework and AIGC tool application scenarios, aiming to provide a reform model with both theoretical depth and practical value for the digital upgrading of art education in higher vocational colleges, and help cultivate composite childcare talents with "technical literacy + artistic sentiment".

Keywords

AIGC; Children's Painting Course; Teaching Design; Higher Vocational Education.

1. Introduction

In the surging tide of educational digital transformation and the iterative development of artificial intelligence technologies, higher vocational education, as the main front for cultivating applied talents, is facing dual challenges of curriculum innovation and technological integration [1]. As a core course in the professional field of infant care services and management, the Children's Painting course shoulders the important mission of cultivating students' artistic literacy, aesthetic capabilities, and practical abilities in early childhood aesthetic education. However, current teaching practices commonly face issues such as uneven levels of students' core art literacy, low creative efficiency, and a disconnect between curriculum content and job requirements, urgently requiring technological empowerment to achieve innovative teaching models[2].

With the explosive development of AIGC technologies such as ChatGPT and Midjourney, their application potential in areas such as creative generation, material optimization, and teaching assistance has provided a brand-new path for the reform of Children's Painting courses. The national Education Informatization 2.0 Action Plan explicitly proposes to "promote the educational application of artificial intelligence," and higher vocational colleges need to closely follow the pulse of the times to explore deep integration paradigms between technology and education[3]. Against this backdrop, this study is rooted in the characteristics of higher vocational education, focusing on the theme of "Teaching Design and Practice of Children's Painting Courses Based on AIGC." Its aim is to address bottlenecks in traditional teaching such as single-dimensional creative guidance and inefficient resource utilization by introducing

artificial intelligence generation technologies, and to construct a new teaching system where "technology drives creativity and practice connects with careers." This will provide theoretical support and practical references for cultivating childcare professionals with digital literacy and innovative capabilities, thereby contributing to the high-quality development of early childhood education[4].

2. Background and Current Situation Analysis of Curriculum Reform

2.1. Industry Demand and Policy Drivers

Policy Context: The national Education Informatization 2.0 Action Plan explicitly proposes to "promote the educational application of artificial intelligence," requiring higher vocational art education to respond to the needs of digital transformation. **Industry Pain Points:** The infant care service sector has an urgent demand for compound talents with "artistic literacy + technical capabilities." Traditional children's painting teaching faces issues such as "insufficient creative inspiration and lagging technical tools" (see Table 1).

Table 1. Statistical Overview of Existing Problems in Traditional Children's Painting Courses

Problem tvpe	Specific performance	Investigation
Students do not attach enough importance (to it).	62% of students believe that the course has a connection with their career.	62%
Uneven core literacy among students	45% of students have weak line composition skills.	45%
Low creative efficiency	The average time spent on a single creation exceeds 4 hours.	-
Weak innovation in works	78% of the works lack thematic breakthroughs.	78%

2.2. Technical Empowerment and Teaching Innovation

AIGC technologies (such as ChatGPT and Midjourney) can address the bottlenecks of "time-consuming material collection and single-dimensional creative guidance" in traditional teaching through functions like "intelligent material generation, color matching suggestions, and creative process optimization," thereby improving students' creative efficiency and work quality[5].

3. Construction of Curriculum Design Model Based on AIGC

3.1. Curriculum Objectives and Module Framework

Based on the above three-dimensional curriculum objectives, this study constructs a hierarchical curriculum module framework guided by technological integration. With core skills of children's painting as the carrier, each module deeply integrates AIGC technology application scenarios, forming a progressive teaching system of "basic technique training-technology integration practice-comprehensive creation improvement." The specific module framework is shown in Figure 1, which visually presents the integration logic between each module and AIGC technology, clearly demonstrating the three-dimensional and innovative nature of the curriculum design[6].

Three Dimensions of Curriculum Objectives:

Artistic Literacy: Master the techniques of lines, colors, and composition in children's painting, and enhance aesthetic capabilities.

Technical Competency: Proficiently use AIGC tools to complete material generation and work optimization.

Professional Literacy: Cultivate a "technology + humanities" dual-dimensional educational philosophy to adapt to the needs of childcare positions.

Curriculum Module Framework Diagram (see Figure 1):

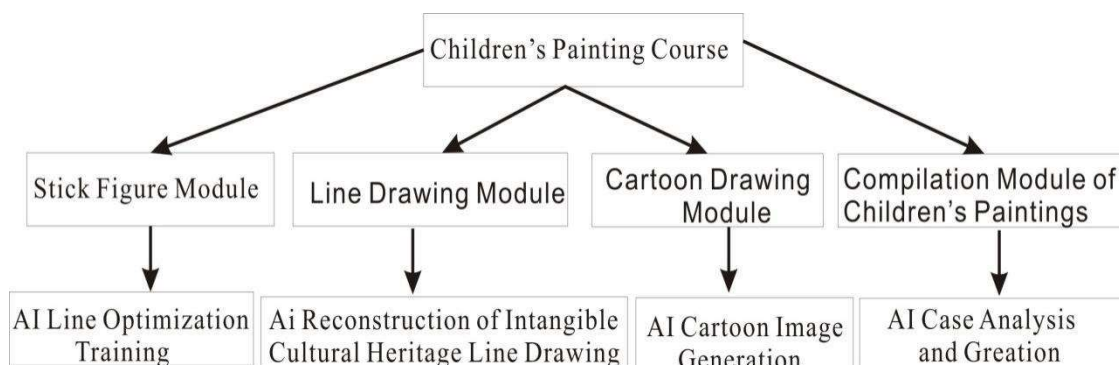


Figure 1. Curriculum Module Framework of Children's Painting Course Based on AIGC

3.2. Innovation of Teaching Methods

On the basis of clarifying the curriculum objectives and module framework, the innovation of teaching methods has become a crucial part of implementing the integration of AIGC technology. Aiming at the limitations of traditional teaching methods, this study constructs a matrix of diversified teaching methods. By deeply integrating case-based teaching, practical teaching, discussion-based teaching, etc. with AIGC technology, a three-dimensional learning path of "cognition-practice-reflection" is formed. The specific integration strategies and typical application scenarios are shown in Table 2. Through the design of specific teaching scenarios, the organic connection between technical tools and art education is achieved, and students' participation and innovative abilities are enhanced.

Matrix of Diversified Teaching Methods (see Table 2):

Table 2. Integration Strategies of Teaching Methods and AIGC

Teaching methods	Application Scenarios of AIGC Technology	Typical Cases
Case-Based Teaching	Analysis of children's paintings generated by AI (such as those created by Midjourney).	Analyze the case of <i>Children's Emotional Expression from an AI Perspective</i>
Practical Teaching	Use AI tools to complete the "thematic creation-intelligent optimization" process.	Optimize line drawing works with Stable Diffusion.
Discussion-Based Teaching	Discuss whether AI creation will replace children's painting education.	Organize a debate on the theme of "Technology and Humanity".

4. Implementation Conditions and Feasibility Analysis

4.1. Structure of the Teaching Staff

Among the key elements for curriculum implementation, the professionalism and interdisciplinary collaboration capabilities of the teaching staff serve as the core support for ensuring the deep integration of AIGC technology into children's painting courses. The interdisciplinary teaching team established in this study integrates professional expertise from multiple fields such as art education, design technology, and preschool education, forming a full-chain teaching staff structure of "theoretical design-technical development-practical implementation." The professional backgrounds, role divisions, and practical experience of team members are detailed in Table 3. Their diversified knowledge systems and rich industry practices provide a solid human resource guarantee for key links in the curriculum, such as "integration of traditional techniques and AIGC tools" and "docking with aesthetic education needs of infants and young children," ensuring the two-way advancement of teaching reform in terms of theoretical depth and practical effectiveness. Composition of the Interdisciplinary Teaching Team (see Table 3):

Table 3. Professional Backgrounds of Research Team Members

Professional Fields	Number of People	Number of People	Core Responsibilities
Fine Arts Education	3	Curriculum Theory Design, Traditional Technique Teaching	Guide students to win 12 provincial-level fine arts competition awards
Design Technology	2	AIGC Tool Development, Digital Resource Construction	Participate in the <i>Digital Inheritance of Wenzhou Intangible Cultural Heritage</i> project
Preschool Education	1	Analysis of Aesthetic Education Needs for Infants and Young Children, Practical Docking	8 years of frontline teaching experience in kindergartens

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The systematic configuration of training resources serves as the hardware foundation and practical carrier for the implementation of curriculum reform. Relying on the existing teaching conditions of the college, this study constructs a dual-track training system of "technology empowerment on campus + practical transformation off campus". On campus, the infant education training room and intangible cultural heritage characteristic venues are taken as the core. The former is equipped with digital devices such as intelligent drawing boards and AIGC creative terminals, providing students with an immersive training environment for "AI material generation - digital painting creation"; The latter relies on resources such as the Ou Kiln Museum and Stone Carving Museum to build an integrated teaching scene of "AI + traditional art", helping students stimulate creative inspiration in the collision between traditional aesthetics and modern technology. Off campus, through two cooperative kindergarten practice bases, a closed-loop link of "AI teaching practice children's feedback" is constructed, enabling

students to directly apply the AIGC technology learned in class to real teaching scenarios, while collecting children's feedback data to optimize teaching strategies, forming a complete training ecosystem of "theoretical learning - practical verification - effect feedback".

Campus facilities:

Infant education training room (AIGC creative terminal);

Intangible cultural heritage characteristic venues (Ou Kiln Museum, Stone Carving Museum, supporting integrated teaching of "AI + traditional art").

Off campus bases: Two cooperative kindergartens provide closed-loop scenarios of "AI teaching practice - children's feedback".

5. Conclusion

This study deeply integrates AIGC technology with children's painting courses, establishing a teaching model of "technology-empowered creativity and practice-driven literacy." Supported by interdisciplinary teaching staff and digital training conditions, it is expected to address the challenges of efficiency and innovation in traditional teaching. In the future, further exploration of extended directions such as "AI ethics education" and "personalized learning paths" is required, aiming to provide replicable practical paradigms for the digital transformation of art education in higher vocational colleges.

6. Closing Remarks

This study takes the empowerment of AIGC technology in the "Children's Painting" course of higher vocational education as a starting point, constructing a three-dimensional teaching system of "technology integration - intelligent assistance - creative guidance." Through interdisciplinary faculty collaboration, development of digital resources, and dual-scenario practices in "training rooms + kindergartens," it explores a new path for art education that adapts to the digital transformation of education. Relying on the college's existing ICH venues, training equipment, and cooperative bases, the project has formed a closed-loop mechanism of "theoretical design - practical verification - evaluation and optimization." This not only breaks through the bottlenecks of traditional teaching in stimulating creativity and improving efficiency but also injects "technology + humanities" dual-dimensional literacy into the cultivation of early childhood education professionals. In the future, the research results can be further extended to related majors such as preschool education, providing replicable innovative paradigms for curriculum reform in aesthetic education of higher vocational colleges. This will contribute to the construction of a modern education system integrating "artificial intelligence + vocational education" and promote the in-depth development of early childhood education towards intelligence and professionalism.

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