

Aesthetic Cultivation Pathways in University Public Art Education Enabled by AIGC Technology

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Abstract: The widespread adoption of artificial intelligence-generated content (AIGC) technology in education is reshaping conventional teaching paradigms. Public art education in universities urgently needs a transformation in aesthetic cultivation. Taking AIGC's dual impacts on aesthetic education as the starting point, this paper analyzes prevailing dilemmas in university public art education, including resource scarcity, monotonous pedagogical methods, and lagging evaluation systems. It proposes three core mechanisms: resource generation, human-machine co-creation, and immersive experience, as well as four practical paths: curriculum reconfiguration, teaching innovation, evaluation reform, and ethical regulation, to provide theoretical references for art education practitioners in universities.

Keywords: AIGC technology; University public art education; Aesthetic cultivation; Human-machine co-creation; Educational practice pathways

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1. Introduction

The rapid development of digital technology has continuously expanded the boundaries of artistic creation and appreciation. AIGC technology, with its powerful content generation capabilities, has injected new vitality into aesthetic education. However, public art courses in universities have long been constrained by resource shortages and outdated methods, making it difficult to achieve the expected results in cultivating students' aesthetic literacy. In the context of the era of technology-enabled education, exploring the deep integration path of AIGC and aesthetic cultivation has significant practical significance^[1]. It can break through the resource bottleneck of traditional teaching and stimulate students' intrinsic motivation for active aesthetic perception, promoting the in-depth development of public art education.

2. The impact and challenges of AIGC technology in intervening in public art education, aesthetic cultivation

2.1. The dual effects of AIGC technology on aesthetic cultivation

The introduction of AIGC technology has brought unprecedented opportunities for aesthetic education. Students can quickly obtain visual representations of different artistic styles when using generative tools. Art forms that originally

required long-term accumulation can now be generated upon inputting instructions. The lowering of the creation threshold enables more non-professional background learners to participate in artistic practice ^[2]. From Impressionist brushstrokes to Cyberpunk tones, the style library provided by algorithms broadens the boundaries of aesthetic cognition. However, the convenience of technology also gives rise to new problems ^[3]. Students tend to lose the ability to think about the internal logic of works when frequently relying on intelligent generation. Algorithmic outputs, trained on vast datasets, often display striking visual similarities. Prolonged exposure risks homogenizing aesthetic judgment and obscuring the individual's perception of art's essence through standardized patterns ^[4].

2.2. Main shortcomings of aesthetic cultivation in current public art education

Public art courses in universities have long suffered from the phenomenon of deviating from teaching goals. Teachers overly emphasize software operation and skill demonstration, and the process of students completing assignments is more like following pre-determined steps rather than cultivating aesthetic perception ^[5]. The limitations of classroom resources make it difficult for students to access original works of art. The lack of immersive experiences, such as museum visits and master lectures, seriously hinders the improvement of aesthetic ability. The evaluation system also reveals deep contradictions. Submitting a single work or completing standardized tests can earn credits. Teachers rarely track the trajectory of students' aesthetic awareness changes throughout the semester, and the formation of literacy should be a continuous accumulation process. The current assessment methods simplify the presentation of results at a certain time point, ignoring the dynamic characteristics of aesthetic ability growth.

3. Core mechanisms of aesthetic cultivation in public art education enabled by AIGC technology

3.1. Resource generation mechanism

The scarcity of teaching resources has long constrained the depth of aesthetic cultivation. AIGC technology's ability to respond instantly in multi-modal content production provides a viable solution to this dilemma. Teachers need to input clear instructions to the generation tool during the lesson preparation stage based on specific aesthetic themes. For example, when teaching Baroque art, they require the system to generate multiple sets of image samples featuring strong contrast of light and shade and dynamic composition characteristics. Students can then quickly access authentic visual references. To address individual differences among students, teachers also need to establish a layered resource library, decomposing artistic concepts into generative tasks with hierarchical difficulty levels. Students with weak foundations can start with simple elements such as color recognition and line analysis, while those with some accumulation can directly engage in complex composition or expression generation exercises. The algorithm can adjust to match each person's current cognitive level, avoiding the learning efficiency differentiation caused by uniform materials in traditional classrooms.

3.2. Human-machine collaborative creation mechanism

The enhancement of aesthetic ability is essentially the simultaneous growth of perception and judgment. The human-machine collaborative creation provides a practical field for this process ^[6]. In the classroom, teachers need to design specific interactive sections. First, students should independently conceive and create a plan based on the given theme. Then, they use AIGC tools to convert the initial ideas into visual images. Machine-generated outputs often reveal ambiguities in students' aesthetic cognition. At this point, the teacher intervenes to guide the students to compare the differences between their expectations and the algorithm's output, analyze which elements conform to aesthetic rules and which parts deviate. Through repeated modification of prompts and adjustment of generation parameters, students gradually clarify aesthetic principles such as color matching and composition balance ^[2]. This dynamic adjustment is not passive acceptance of machine results but requires students to actively identify problems, such as discovering that the generated character

expressions lack emotional tension, and adding details of psychological states in the description. The final work carries the individual's unique aesthetic judgment, with technology merely serving as a mirror for thinking assistance.

3.3. Immersive experience mechanism

Traditional two-dimensional classroom teaching has always been unable to immerse students in the artistic context truly. The combination of virtual reality technology and AIGC is reshaping the depth of aesthetic experience. Teachers need to select representative classic works and use the generation tool to reconstruct the spatial environment at the time of creation. After students wear the equipment, they can enter Monet's pond by the lily pads, observe the subtle changes of light and shadow captured by the painter, and even simulate the specific actions of mixing colors and laying down strokes. When teaching Chinese landscape painting, the system also needs to generate three-dimensional scenes from different perspectives, such as level perspective, high perspective, and deep perspective. Students can move their line of sight in the virtual space to understand the composition logic of the perspective in traditional painting. The comprehensive participation of the body senses keeps the aesthetic experience beyond the visual level. To deepen understanding, teachers need to set up a reconstruction module of the creative process, such as asking students to try completing a work in the virtual environment according to specific aesthetic rules. The system provides real-time feedback on whether each step of the operation conforms to the rules of proportion, rhythm, etc. Through repeated trial and error, students internalize aesthetic principles, and the embodied experience transforms abstract concepts into actionable cognition.

4. Practical paths for aesthetic cultivation in public art education of universities under the enabling of AIGC technology

4.1. Curriculum content reconstruction path

The cultivation of aesthetic ability requires following the cognitive laws and progressing from lower to higher levels^[7]. Therefore, curriculum design must break away from the original mode of knowledge accumulation. At the beginning of the semester, teachers need to define the teaching goals for the four stages clearly. In the perception stage, they should use AIGC to generate a large number of artworks of different styles, and students should be trained to be sensitive to basic elements such as colors, lines, and composition through intensive visual stimulation. For example, after observing twenty sets of Impressionist works continuously, they should be required to describe the commonalities of brushstroke characteristics. The experiential stage requires students to create by themselves using the generation tools, and the teacher selects a certain classic theme from Chinese or foreign art, such as "tragic beauty", and asks the students to input different keywords to try to express this aesthetic category. During the generation process, students need to experience how to convey emotions through visual elements. The creation stage focuses on personalized expression. Students need to integrate and innovate multiple classic styles, for example, combining the flat composition of ukiyo-e with the absurd logic of surrealism to generate new works. In this stage, the teacher should guide students to think about the cultural differences behind different aesthetic systems. The reflection stage requires students to review the entire learning trajectory and write a report to analyze the reasons for the formation of their aesthetic preferences and the role of AIGC tools in it, elevating the emotional experience to a rational cognition.

4.2. Innovation path of teaching methods

Process-based teaching emphasizes embedding the cultivation of aesthetic judgment ability in every operation step rather than merely focusing on the final output^[3]. In the classroom, the teacher first assigns a generation task, requiring students to generate three to five sets of works based on the same aesthetic concept using different prompts. Then, the teacher organizes the whole class for a horizontal comparison, analyzing the differences in color tone, composition, and the creation of the artistic atmosphere of each group of works. During the comparison, students need to clearly point out which group better meets the aesthetic standards and explain the basis for the judgment. At this time, the teacher should ask why a

certain color combination was chosen rather than other options, forcing students to transform their vague feelings into clear aesthetic logic. The evaluation phase also introduces classic works as references. Students will examine their generated content together with the master's original works, identifying the shortcomings in the technical generation results in detail, processing, emotional depth, and realizing that the algorithm merely replicates the surface style but lacks the inner spirit^[8]. The re-creation stage requires students to iterate on their works based on the previous reflection, modifying the prompts and adjusting the parameters until the generated result is closer to their aesthetic expectations. The entire iterative process allows students to gradually break free from reliance on machines and form independent discrimination abilities.

4.3. Reform path of aesthetic evaluation

Single-dimensional skill assessment fails to fully reflect students' comprehensive aesthetic literacy. Therefore, the evaluation system must cover multiple dimensions such as perception, judgment, creation, and expression. Teachers need to design specific evaluation indicators. The perception ability examines whether students can accurately identify the aesthetic elements in the works, such as providing a set of generated images and requiring them to label the main colors and composition types. The judgment ability requires students to select the one that best meets the specific aesthetic standards among multiple options and explain the reasons. The evaluation of creative ability does not focus on the technical completion of the works but on whether students propose novel aesthetic combinations during the generation process. The expression ability examines whether students can convey their aesthetic feelings to others using appropriate language^[4]. To track the growth trajectory, teachers need to establish a portfolio system for works, requiring students to submit at least one creation using AIGC tools every week, along with detailed design explanations, the reasons for choosing a certain style, the difficulties encountered, and solutions. At the end of the semester, all works will be arranged in chronological order, clearly showing the evolution of aesthetic cognition. At the same time, students are required to write an aesthetic reflection journal, recording their thoughts after each class discussion, changes in understanding of a certain artistic concept, and teachers regularly check the content of the journal to identify the key nodes of students' thinking development and shift the evaluation focus from results to the process.

4.4. Ethical norms and teacher subjectivity guarantee

The widespread adoption of technological tools inevitably carries the risk of value orientation deviation; therefore, teachers' role in overseeing aesthetic education must be reinforced at the institutional level. Schools should clearly stipulate that content generated by AIGC must be reviewed by teachers before being introduced into the classroom. When reviewing, teachers should not only check technical quality but also be vigilant about the biases that algorithms may carry. For example, some generative tools may replicate social stereotypes when dealing with topics related to gender and race. Once students accept such content, it will distort aesthetic values^[9]. Teachers also need to explain the limitations of AIGC tools to students before each use, emphasizing that machine-generated results are based on probabilistic outputs from big data and do not represent the essence of art. Students should maintain critical thinking and use the generated content as a reference rather than a standard answer^[10]. To cultivate this thinking ability, the curriculum should include specific analysis sessions where teachers present typical cases of algorithm-generated problems, such as the aesthetic convergence caused by excessive reliance on popular elements and the superficial appropriation of traditional cultural symbols. Students learn to identify the traps of technology-generated products during discussions. At the same time, students are required to reflect on how many of their ideas come from independent thinking and how many are just copied from machine suggestions. They are also required to submit self-assessment reports regularly, explaining how to maintain aesthetic subjectivity while using tools and ensuring that technology always serves rather than dominates the growth of aesthetic abilities^[5].

5. Conclusion

AIGC has opened up new prospects for aesthetic cultivation in university public art education. However, the technology

itself cannot replace the essential goals of education. Teachers need to embrace technological changes while maintaining a clear understanding, treating algorithm-generated content as a catalyst for stimulating aesthetic thinking rather than an end goal. They should enable students to gradually establish an independent aesthetic judgment system through human-machine collaboration. Future art education should continuously deepen reforms in aspects such as resource generation, process guidance, and diverse evaluation, fully leveraging the technical advantages of AIGC while always adhering to the core mission of aesthetic education to cultivate a humanistic spirit. This can ultimately realize the organic integration of technological empowerment and students' aesthetic development.

Disclosure statement

The author declares no conflict of interest.

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