

# ***Digital Brush: Application Strategies of Artificial Intelligence in Art Appreciation and Creation in Junior High School***

**Huangjing Que**

*Hangzhou Normal University, Hangzhou, China  
1119076806@qq.com*

**Abstract.** Against the background of digital education transformation, junior high school art education faces challenges such as limited appreciation resources, insufficient personalized creation, and single-dimensional evaluation. Focusing on the core of "artificial intelligence empowering aesthetic education", this paper centers on the two key links of art appreciation and creation. Combining the cognitive characteristics of junior high school students and the goals of aesthetic education, it systematically explores the application strategies of AI tools from three dimensions: resource development, teaching model innovation, and evaluation system optimization. Furthermore, it proposes a practical path of "AI + Aesthetic Education", aiming to break through the bottlenecks of traditional teaching, cultivate students' aesthetic perception, innovative thinking, and digital art literacy, and provide references for the modernization of junior high school art education.

**Keywords:** Artificial Intelligence, Junior High School Art Education, Art Appreciation, Art Creation, Application Strategies

## **1. Introduction**

The Compulsory Education Art Curriculum Standards (2022 Edition) [1] clearly states that it is necessary to "explore the in-depth integration of information technology and art teaching, and expand the channels and methods of art learning". With the maturity of technologies such as generative AI, computer vision, and big data analysis, artificial intelligence has evolved from an "auxiliary tool" to a "collaborative partner", injecting new vitality into junior high school art education. The junior high school stage is a critical period for the awakening of students' aesthetic awareness and the development of creativity. However, in traditional art teaching, the appreciation link suffers from "narrow resources and superficial interpretation" — teachers rely on limited cases in textbooks, making it difficult to cover diverse artistic styles; the creation link is restricted by "high technical thresholds and insufficient personalized guidance", and some students lose interest because they "cannot draw".

The "digital brush" is not a narrow-sense AI painting tool, but a digital solution centered on artificial intelligence technology that runs through the entire process of art appreciation, creation, and evaluation [2]. Focusing on the core links of junior high school art education, this paper deeply analyzes the application strategies of AI from three aspects: the intelligent reconstruction of appreciation resources, the personalized empowerment of the creation process, and the diversified

upgrading of teaching evaluation. It aims to achieve the integration goal of "technology as the form and aesthetic education as the essence", enabling AI to truly serve the cultivation of students' aesthetic literacy and innovative abilities.

## **2. Application strategies of Artificial Intelligence in art appreciation in junior high school**

Art appreciation is the starting point of aesthetic education, whose core goal is to guide students to "understand beauty, comprehend beauty, and reflect on beauty". Traditional appreciation teaching mainly adopts the mode of "teacher explanation + image display", where students passively receive knowledge and find it difficult to establish a deep connection with works of art. AI technology can reconstruct the appreciation teaching model through three paths — "resource expansion, in-depth interpretation, and interactive experience", enabling students to shift from "passive viewing" to "active exploration" [3].

### **2.1. AI-driven intelligent integration of appreciation resources: breaking temporal and spatial limitations to build a diverse resource library**

Junior high school students are more sensitive to concrete and vivid artistic forms. However, the appreciation cases in traditional textbooks mostly focus on classic paintings and sculptures, with a limited quantity, making it difficult to cover modern art forms such as new media art and digital illustrations. AI technology can build a dynamically updated "intelligent aesthetic education resource library" through "resource crawling, classification labeling, and personalized recommendation", solving the problems of "few resources and low matching degree".

On the one hand, AI's image recognition and big data crawling functions can be used to integrate digital resources from art museums around the world. For example, teachers can use tools such as "Baidu Art Museum AI Assistant" and "Google Arts & Culture AI Tool" to introduce high-definition collections (e.g., Mona Lisa, A Thousand Li of Rivers and Mountains) from institutions like the Louvre Museum and The Palace Museum into the classroom, and automatically generate basic information labels such as the work's era, school, and creative background. More importantly, AI can screen resources according to teaching objectives — if the teaching theme is "emotional expression of colors", AI can automatically match cases such as Vincent van Gogh's Sunflowers (warm tones) and Edvard Munch's The Scream (cool tones), and exclude works unrelated to the theme, reducing the time cost for teachers to screen resources.

On the other hand, AI can push personalized resources based on students' cognitive levels and interest preferences. For example, for students who like anime, AI can recommend scene designs in Makoto Shinkai's animations (e.g., the starry sky colors in Your Name) and link them to the light and shadow techniques of Impressionist paintings; for students who pay attention to traditional culture, AI can push "AI-restored Dunhuang murals" and compare them with modern digital ink wash works. This "interest-oriented" resource recommendation allows students to feel that "art is around them", thereby proactively exploring the cultural connotations behind art [4].

### **2.2. AI-assisted in-depth interpretation of works: from "viewing the surface" to "comprehending the essence"**

Junior high school students' interpretation of works of art often stays at the superficial level of "nice colors" and "lifelike images", and they struggle to understand the works' emotional expression, historical background, and creative techniques. Through "multi-dimensional analysis, interactive

Q&A, and situational restoration", AI can guide students to think in depth and cultivate their aesthetic perception.

First, AI can decompose the creative techniques of works from dimensions such as color, composition, and brushwork. For example, when appreciating *The Starry Night*, AI can use image analysis to mark the spiral lines and the contrast between warm and cool colors in the picture, and dynamically demonstrate "how to use rotating brushstrokes to express the fluidity of the starry sky"; when appreciating *Along the River During the Qingming Festival*, AI can zoom in on the details of the picture, identify elements such as "teahouses, docks, and pedestrians", and analyze how "scattered perspective" presents the lively scene of urban life. This "visual decomposition" makes abstract techniques intuitive, helping students understand "why the artist painted in this way".

Second, AI can guide students to think actively through "interactive Q&A". For example, when appreciating *The Gleaners*, AI can ask questions such as: "The three peasant women in the picture are dressed simply, with a vast field in the background. What do you feel from this composition?" "If the tone of the picture is changed to bright red, how will the emotional expression change?" Students can answer via voice or text, and AI will provide feedback based on their answers.

### **2.3. AI-supported interdisciplinary appreciation activities: breaking disciplinary barriers to expand aesthetic vision**

Aesthetic education is not isolated; art has close connections with disciplines such as history, Chinese, and science. Through "disciplinary knowledge connection and project-based learning", AI can design interdisciplinary appreciation activities, allowing students to understand the value of art from multiple perspectives.

For example, in an interdisciplinary activity of "AI + History + Art", teachers can set the theme "Understanding Shang and Zhou Cultures through Bronze Artifacts". AI first pushes images of Shang and Zhou bronze artifacts (e.g., Simuwu Ding, Four-Sheep Square Zun), identifies patterns such as taotie patterns and cloud-leaf patterns on the artifacts, and links them to historical knowledge (the uses of bronze artifacts, the sacrificial culture of the Shang and Zhou dynasties); then, AI guides students to compare "bronze elements in modern designs" (e.g., jewelry with bronze patterns from a certain brand) and analyze the modern transformation of traditional culture; finally, students work in groups to design "campus cultural and creative products integrating bronze patterns" using AI tools (e.g., Canva) and explain their design ideas.

Another example is an activity of "AI + Science + Art" with the theme "Light, Shadow, and Art". AI first displays Claude Monet's *Water Lilies* series and analyzes the changes in light and shadow at different times of the day (early morning, afternoon, dusk); then, it pushes scientific knowledge (refraction of light, formation of colors) and uses animations to demonstrate "why the lake surface appears orange at dusk"; finally, students create "campus scenery under different light and shadow conditions" using AI painting tools (e.g., Midjourney) and mark the scientific principles behind the changes in light and shadow. Such interdisciplinary activities help students realize that "art is not an empty imagination, but closely related to life and science", thereby expanding their aesthetic vision and cultivating their comprehensive thinking abilities.

## **3. Application strategies of Artificial Intelligence in art creation in junior high school**

Art creation is the core link for students to express themselves and release their creativity. Junior high school students have varying foundations in painting; some students dare not start painting due to "insufficient skills", while others struggle to complete works due to "limited ideas". Through

"skill assistance, inspiration stimulation, and personalized guidance", AI can lower the threshold for creation, encourage students to make bold attempts, and allow every student to experience "the joy of creation".

### **3.1. AI skill assistance: lowering the threshold of creation to turn "cannot draw" into "can draw well"**

Junior high school students are still developing their modeling and color matching abilities, and some students feel frustrated because they "cannot draw realistically" or "use messy colors". AI tools can help students solve technical problems and focus on creative expression through "line correction, color recommendation, and modeling assistance".

In the modeling link, AI painting tools (e.g., Procreate AI Plugin, Huayuzhou) can provide a "line draft generation" function. For example, if a student wants to draw a "cartoon cat", they only need to sketch the approximate outline with simple lines (e.g., a round head, triangular ears), and AI will automatically correct the smoothness of the lines and add details (e.g., eyes, whiskers, fur); if a student wants to draw a "campus teaching building", AI can generate a basic line draft based on the student's text description (e.g., "red roof, white walls, round windows"), and the student can then add personalized elements (e.g., graffiti on the walls, potted plants at the door) on this basis. This "AI-assisted modeling" frees students from the trouble of "difficult modeling" and allows them to focus more on "how to make the work more creative".

In the color link, AI can provide "color matching recommendation" and "real-time color adjustment" functions. For example, when a student is painting a "spring park" and is unsure about the color selection, AI can recommend a harmonious color scheme of "light green (grass), pink (peach blossoms), light blue (sky)" based on the theme and mark the RGB value of each color; if the student thinks "the color of the peach blossoms is too light", they only need to smear on the screen with their finger, and AI can adjust the saturation and brightness of the color in real time until the student is satisfied. In addition, AI can simulate the effects of different painting materials — when students paint with ordinary brushes, AI can convert the works into "watercolor style", "oil painting style", or "ink wash style", allowing students to experience the charm of different art forms and stimulate their interest in creation.

### **3.2. AI inspiration stimulation: breaking the limitation of ideas to turn "no ideas" into "have creativity"**

Some students encounter the problem of "idea exhaustion" during creation — they do not know what to draw or how to transform their ideas into works. Through "creative association, theme expansion, and case reference", AI can provide inspiration support for students and encourage them to innovate boldly.

AI's "creative association" function can generate diverse creative directions based on students' fragmented ideas. For example, if a student says "I want to draw a 'future city'", AI will generate multiple creative directions through "keyword expansion", such as "flying cars shuttling between skyscrapers", "rooftops of the city full of vegetables (an 'urban farm')", and "people walking on virtual streets wearing VR glasses", and match each direction with a simple schematic diagram; if a student wants to draw "the integration of traditional culture and modern life", AI can associate creative points such as "a girl in Hanfu taking photos with a mobile phone" and "terracotta warrior-shaped robots working in museums", helping students open their minds.

AI can also stimulate students' innovative thinking through "cross-style reference". For example, if a student wants to draw "Sun Wukong", AI can display images of Sun Wukong in different artistic styles (e.g., "Disney animation style", "Japanese manga style", "Chinese ink wash style", "cyberpunk style") and analyze the characteristics of each style (e.g., "cyberpunk style uses neon colors and mechanical elements to highlight a 'sense of the future'").

#### **4. Application guarantees and reflections of Artificial Intelligence in junior high school art teaching**

While AI brings many conveniences to junior high school art education, in practice, it is necessary to pay attention to the balance between "technical boundaries" and "the essence of aesthetic education", and avoid problems such as "over-reliance on AI" and "neglect of humanistic literacy cultivation". At the same time, it is necessary to build an application guarantee system from three aspects — "teacher capabilities, equipment support, and ethical norms" — to ensure that AI technology truly serves the goals of aesthetic education.

##### **4.1. Application guarantees: building a support system of "technology + teachers + systems"**

First, improve teachers' "AI literacy in aesthetic education". Teachers are the key to the integration of AI and aesthetic education, and need to possess "AI tool application capabilities", "AI teaching design capabilities", and "aesthetic education guidance capabilities". Schools can help teachers master AI technology through "specialized training", "teaching and research activities", and "school-enterprise cooperation", and teach them "how to use AI to design aesthetic education activities that meet students' characteristics". For example, teachers need to be clear that AI is an "auxiliary tool", not a "substitute" — in the appreciation link, AI can provide resources and interpretations, but teachers need to guide students to conduct "critical thinking". Second, improve "hardware and software" support. AI-based aesthetic education teaching requires stable equipment and high-quality software support. Schools need to be equipped with "multimedia classrooms" and "digital painting equipment" and ensure smooth network connectivity; at the same time, they need to select AI tools "suitable for junior high school students" — prioritizing software that is "easy to operate, content-safe, and in line with aesthetic education goals" (e.g., Huayuzhou, Canva, Baidu Art Museum), and avoiding tools that are "too complex" or "contain inappropriate content". In addition, schools can cooperate with AI enterprises to customize "school-based AI aesthetic education platforms" that integrate functions such as resource recommendation, creation assistance, and evaluation feedback to improve teaching efficiency.

##### **4.2. Application reflections: adhering to the essence of aesthetic education and avoiding "technology supremacy"**

Although AI technology can assist in appreciation and creation, the core of aesthetic education is to "cultivate people's aesthetic taste, humanistic literacy, and innovative spirit". This requires teachers' emotional guidance, interactive communication between teachers and students, and students' observation and reflection on life — all of which cannot be replaced by AI [5]. In practice, the following misunderstandings should be avoided:

First, avoid "over-reliance on AI and neglect of handmade creation". Some teachers may overemphasize digital painting due to the convenience of AI tools, reducing the number of classes for handmade creation such as watercolor painting, sketching, and clay modeling. However,

handmade creation allows students to directly feel the texture of materials and cultivate patience and concentration through repeated revisions — something that digital creation cannot replace. Therefore, it is necessary to balance the proportion of "AI-assisted creation" and "handmade creation". For example, in the theme creation of "campus scenery", students can first sketch on the spot with a sketchbook, and then use AI tools to convert the sketch into digital works of different styles. This not only retains the warmth of handmade creation but also leverages the creative advantages of AI.

Second, avoid "AI interpretation replacing teacher-student communication". Although AI can provide technical analysis and background knowledge of works, the emotional resonance and ideological collision between teachers and students are more educationally valuable. For example, when appreciating Father, teachers can share their own emotional experiences of "the image of a father", guide students to recall details about their own fathers, and allow students to shift from "understanding the work" to "connecting with life"; students can also share different interpretation perspectives through group discussions. Such interactions make appreciation teaching warmer and avoid the "mechanization" of AI interpretation.

## 5. Conclusion

In today's era where the digital wave sweeps across the field of education, AI has become a dynamic "digital brush" in junior high school art classrooms. It can quickly generate rich color templates, help students easily construct complex composition frameworks, and analyze the brushwork and color logic of world-famous paintings through image recognition technology, making abstract art knowledge intuitive and perceptible. This efficient technical tool undoubtedly opens a new window for art teaching, especially lowering the creation threshold for beginners and stimulating their interest in art [6].

However, AI can never become the "only brush" in junior high school art education. The core of art education is to cultivate students' perception and creativity, which requires students to touch paint with their own hands, feel the friction of the brush on paper, experience the subtle changes in color matching through repeated smearing and revision, and exercise their unique aesthetic thinking through independent conception. If students over-rely on AI, they may fall into the convenience of "one-click generation", lose the ability to independently observe life and express their inner feelings, and ultimately lead to works lacking emotional warmth and personal marks.

Therefore, junior high school art education must adhere to the principle of "aesthetic education as the soul and technology as the tool". In teaching, AI should be used as an auxiliary tool rather than a dominant force. AI can be used to help students expand their creative ideas, but the final creative expression still needs to return to handmade drawing. This allows students to master modern digital skills while inheriting the humanistic heritage of traditional art in the combination of technology and handcraft. Only by balancing the application of technology and the cultivation of humanism can AI truly empower junior high school art education, guide students to learn to discover beauty, express beauty, and create beauty in appreciation and creation, and grow into individuals with both aesthetic literacy and innovative abilities.

## References

- [1] Ministry of Education of the People's Republic of China. (2022). Compulsory education art curriculum standards (2022 edition). Beijing Normal University Press.
- [2] Chen, X. M. (2020). Practical exploration of constructivist learning theory in art education. Educational Research, 41(07), 89-98.

- [3] Mayer, R. E. (2023). Cognitive theory of multimedia learning (3rd ed.) (Y. Niu & X. Qiu, Trans.). The Commercial Press.
- [4] Shen, X. Q. (2024). Making good use of artificial intelligence technology to build a modern junior high school art classroom. *Parents*, (32), 143-145.
- [5] Chen, M. H. (2022). Personalized implementation strategies for junior high school art creation teaching under core literacy. *China Art Education*, (04), 36-40.
- [6] Zhong, Q. Q. (2021). Transformation of art education oriented by core literacy. East China Normal University Press.