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Artificial Intelligence: A New Engine for the Cultivation of Aesthetic Ability of Non-art Students in Chinese Universities

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Abstract

Through qualitative research methods, this research explores the positive role of artificial intelligence (AI) in the cultivation of aesthetic ability of non-art students in Chinese universities. The research finds that AI opens up new aesthetic horizons for non-art majors, stimulates their aesthetic interest and creativity by providing diversified art resources and creative tools, innovating teaching models, expanding aesthetic experience space, and promoting interdisciplinary integration, which is helpful to improve their aesthetic perception, aesthetic understanding and aesthetic creation ability, which has important implications for the improvement of the aesthetic education system in colleges and universities.

In this study, the combination of interviews to obtain real feedback, case studies to reveal practical paths, and literature analysis to lay a theoretical foundation provides comprehensive insights for artificial intelligence to empower aesthetic education.

Keywords

Artificial Intelligence; Non-Art Majors; Aesthetic Ability Training.

1. Introduction

In today's era, AI technology is developing rapidly, penetrating all fields of society, and the field of education is also deeply affected by it. In college education, the cultivation of aesthetic ability of non-art majors is often neglected, but as an important part of all-round development, aesthetic ability plays an irreplaceable role in the improvement of students' innovative thinking and humanistic quality. Combined with previous literature research, effective methods are very limited, but with the emergence of AI, it has brought new opportunities and possibilities for the cultivation of aesthetic ability of non-art students in colleges and universities, and it is of great theoretical and practical significance to study its positive role in depth.

2. Research background and objectives

2.1. Research background

With the advancement of science and technology, AI has shown powerful capabilities in image recognition, audio processing, and artistic creation assistance (Sun & Sundarasekar, 2023). On college campuses, smart devices are ubiquitous, network resources are abundant, and students are in an environment surrounded by AI technology. However, in the past, aesthetic education for non-art majors mostly relied on traditional classroom lectures, field visits and exhibitions, which was difficult to meet the growing aesthetic needs and personalized development requirements of students (Hubard, 2020).

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2.2. Research objectives

The purpose of this research is to reveal how AI plays a role in the cultivation process of aesthetic ability of non-art students in colleges and universities, and to conduct an in-depth analysis from the aspects of aesthetic cognition expansion, aesthetic emotion stimulation, and aesthetic creativity improvement, so as to provide a basis for colleges and universities to make full use of AI to optimize aesthetic education (Lin et al., 2025).

3. Research Methods

3.1. Interviews

15 non-art students from different regions, different levels and different discipline backgrounds were selected as interview subjects, covering multiple majors such as science and engineering, liberal arts, etc., and conducted in-depth interviews (Jiao, 2020). Ask questions about their aesthetic resources, tools, changes in aesthetic concepts, points of interest, and creative experience before and after exposure to AI, and record the interview content in detail.

3.2. Case study

Collect typical cases of using AI to carry out aesthetics-related teaching practices in 3 typical universities, such as using AI painting software to assist in designing course teaching, and using intelligent music creation platforms to integrate music appreciation public elective courses. In-depth analysis of the teaching goal setting, teaching implementation process, and student feedback in the case, and the impact of AI on the cultivation of aesthetic ability (Jingxiu, 2024).

3.3. Literature research

Consult the academic literature and research reports related to AI and education and aesthetic ability cultivation at home and abroad to understand the cutting-edge research results and practical experience, so as to provide theoretical support and research ideas for this research.

4. The Positive Effect of AI On the Cultivation of Aesthetic Ability of Non-Art Majors

4.1. Enrich aesthetic resources and broaden aesthetic horizons

Through the massive art materials brought by artificial intelligence and virtual museum and exhibition experience, students can broaden their aesthetic horizons.

4.1.1. Massive art materials gathered

AI technology can integrate artwork resources on a global scale, breaking geographical and time constraints (Lundman & Nordström, 2023). Through intelligent algorithm recommendation, students can easily get in touch with different countries, different historical periods, different styles of painting, sculpture, music, dance and other art forms. For example, some art information apps use image recognition and big data analysis to accurately push artworks that meet users' preferences, giving students the opportunity to appreciate diverse artistic styles from Renaissance classical oil painting to modern abstract art, from traditional Chinese gongbi painting to folk paper-cutting, which greatly enriches their aesthetic material library (Qiu & Zhang, 2023).

4.1.2. Virtual Museum & Exhibition Experience

With the help of AI extension technologies such as virtual reality (VR) and augmented reality (AR), universities and cultural institutions cooperate to create virtual museum tours and online art exhibitions. Students can immerse themselves in the details of cultural relics, artwork displays, and gain an in-depth understanding of the background and artistic techniques of the works through interactive operations (Sookkaew et al., 2025). For example, the VR tour launched by the Palace Museum allows students to feel like they are in the Forbidden City,

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viewing the palace architectural carvings, calligraphy and painting treasures up close, and feeling the charm of ancient royal art.

4.2. Innovate the teaching mode and stimulate aesthetic interest

Through the innovation of teaching modes such as personalized learning path customization and interactive creation teaching, students' aesthetic interest is further stimulated.

4.2.1. Personalized learning path customization

The AI education platform can tailor aesthetic learning paths for non-art majors based on the results of students' early aesthetic test evaluation, such as color preference, artistic style preference, creative potential and other dimensions (Cui et al., 2021). For example, for students who are sensitive to color but have weak geometric modeling ability, the system recommends starting from the introductory color psychology course, combined with AI-generated color matching case exercises, and gradually guiding them to a simple pattern design course.

4.2.2. Interactive creative teaching

In the classroom, teachers introduce AI painting and music composition software to assist teaching. In AI painting, for example, students input simple ideas or keywords, and the software instantly generates a variety of sketches, around which teachers and students discuss aesthetic principles such as composition, color, and element combinations, and then students manually modify and improve them (Zhang & Seong, 2024). This interactive creative process concretizes abstract aesthetic theories, allowing students to intuitively feel the joy of creation, no longer feeling that aesthetic knowledge is boring and difficult to understand, and even zero-based students can quickly get started with creation, enhancing self-confidence and learning motivation.

4.3. Enhance aesthetic sensibility

Use intelligent analysis to help work appreciation, data visualization to present aesthetic trends, etc., to improve students' aesthetic perception acumen.

4.3.1. Intelligent analysis helps to appreciate works

As students enjoy a painting or listen to a piece of music, AI tools provide real-time analysis (Grájeda et al., 2024). For example, the art appreciation app uses image recognition and style classification algorithms to inform students of the art genre to which the work belongs, the characteristics of the painter's life style, and the proportion of color composition of the picture (Menai, 2023). Music analysis software can analyze elements such as rhythm, melody direction, and harmonic use. These accurate analyses are like explanations by professional tour guides, helping students to deeply understand the connotation of the work, so that they can focus more on the details in the process of appreciation, and gradually cultivate a keen perception of aesthetic elements such as color, line, and rhythm, and no longer superficial perception.

4.3.2. Data visualization presents aesthetic trends

AI collects massive data of artworks and information on the public's aesthetic preferences, and uses data visualization methods to generate aesthetic style evolution charts, popular color trend charts, etc. Students can learn about the changes in aesthetic standards in different periods and gain insight into the current trend of aesthetics in society (Freedman, 2025). When designing project practice, we can skillfully integrate popular elements based on data insights, and at the same time lose personality innovation, so as to realize the leap from blindly following the trend to rationally grasping the aesthetic trend, and strengthen the forward-looking and accurate aesthetic perception.

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4.4. Promote aesthetic emotional resonance and expression

Use emotional AI work interaction, aesthetic sharing and communication in social media to further promote students' aesthetic emotional resonance and expression.

4.4.1. Emotional AI works interaction

Some AI-created literary works, film and television clips, etc., are integrated with affective computing technology, which can adjust the plot direction or expression style according to user emotional feedback (Rojas & Martínez-Cano, 2024). Non-art majors are more likely to have emotional resonance when interacting with such works, as if they are communicating emotionally with the "creator" (AI) of the work. For example, some healing AI animated short films automatically optimize the picture tone and music rhythm according to the audience's emotional fluctuations when watching, such as soothing and excited, to create a warm and intimate atmosphere, touch the deep emotions of students, provide them with a new emotional experience paradigm, and inspire them to pay attention to emotional transmission in aesthetic creation (Pal et al., 2025).

4.4.2. Aesthetic sharing and communication in social media

With the help of AI algorithms, social media platforms accurately push the aesthetic creations published by users to the interest community. Non-art majors share their AI-assisted photography works and short videos, and receive likes, comments, and suggestions from their peers, forming a good interactive atmosphere (Mok et al., 2025). In this kind of social aesthetic communication, students continue to learn from the aesthetic experience of others, and at the same time, in order to maintain the reputation of their own works, they will pay more attention to the depth and breadth of emotional expression of their works, and strive to make their works resonate more, so as to realize the sublimation of aesthetic emotions from self-experience to social sharing, and further improve their aesthetic expression ability (Hagman, 2025).

4.5. Cultivating aesthetic creativity

Through the use of AI to inspire creative inspiration and integrate innovative practices across fields, students are cultivated and stimulated with aesthetic creativity.

4.5.1. AI inspires creativity

AI-generated bizarre images, novel musical melodies, and unique literary plots often give people an unexpected creative impact. Non-art majors are exposed to these AI creations in their daily learning, and their thinking is inspired by them, breaking the limitations of conventional cognition. For example, architectural design students get inspiration from AI-generated fantasy renderings of future cities, and integrate streamlined sci-fi elements into traditional architectural designs (Garcia, 2024). Inspired by the combination of different rhetoric and imagery in AI poetry, literature lovers have created their own unique writing style, realizing the transformation of thinking from imitation to innovation, and providing fertile soil for aesthetic creativity to flourish.

4.5.2. Cross-domain integration of innovative practices

AI promotes multidisciplinary integration and gives rise to many interdisciplinary aesthetic creation projects in universities. For example, computer science majors cooperate with art students to use AI algorithms to achieve dynamic painting display; Electronic engineering and music majors have joined forces to create interactive music installations with the help of smart hardware (Mi et al., 2024). In such an interdisciplinary team, non-art majors combine this professional knowledge with artistic aesthetics empowered by AI, cut into creation from different perspectives, break through the mindset of a single discipline, and give birth to innovative works with both a sense of science and technology and artistic beauty, effectively improving the comprehensive quality of aesthetic creation.

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5. Conclusions And Prospects

5.1. Research conclusions

Through a variety of qualitative research methods such as interviews and case studies, it is confirmed that AI has a significant positive effect on the cultivation of aesthetic ability of non-art majors in Chinese universities. It has achieved remarkable results in the expansion of aesthetic resources, the innovation of teaching models, the strengthening of aesthetic perception, the promotion of emotional resonance and the cultivation of creativity, injecting new vitality into aesthetic education in colleges and universities, breaking the bottleneck of traditional aesthetic education, and helping non-art majors to comprehensively improve their aesthetic literacy.

While this study has certain achievements in the bureau, there are also some limitations, such as the small qualitative scope of the study and limited regional data, and it also puts forward a clear direction for future research.

5.2. Research Prospects

In the future, Chinese universities should further deepen the integration of AI and aesthetic education, strengthen relevant training for teachers, and improve teachers' ability to use AI tools in teaching. At the same time, we should pay attention to the potential challenges brought about by AI, such as the weakening of students' ability to think independently due to their over-reliance on technology, and guide them to use it rationally. In addition, we will continue to explore more AI-empowered aesthetic curriculum systems and practice models suitable for non-art majors, so that aesthetic education can shine more brightly in the era of AI, and lay a solid aesthetic foundation for cultivating high-quality talents with all-round development.

At the same time, this study needs to be vigilant against three potential risks: first, over-reliance may lead students to passively accept the aesthetic paradigm recommended by algorithms, weakening their independent perception and critical aesthetic ability; second, the programmatic output of AI tools may squeeze the space for personalized expression, and may inhibit emotional intuition and artistic originality in the long term; Third, unequal access to technology may exacerbate the differentiation of aesthetic education resources, and algorithmic bias may imply specific cultural values, so ethical review and humanistic guidance need to be strengthened.

Statements and Declarations

No funding was received for conducting this study. The present study has no relevant financial or non-financial interests to disclose.

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Author Contributions

This work was carried out in collaboration among all authors. This project was conducted jointly by the authors. The authors reviewed and agreed to the final manuscript. All authors read and approved the final manuscript.

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