Open Access Library Journal
2026, Volume 13, e15352
ISSN Online: 2333-9721
ISSN Print: 2333-9705

The Impact of Artificial Intelligence on Adolescents' Musical Aesthetics and Music Education

Qianpeng Chen

School of Music, Nanjing Normal University, Nanjing, China
Email: 1357741915@qq.com

How to cite this paper: Chen, Q.P. (2026) The Impact of Artificial Intelligence on Adolescents' Musical Aesthetics and Music Education. *Open Access Library Journal*, **13**: e15352.
https://doi.org/10.4236/oalib.1115352

Received: April 15, 2026
Accepted: May 15, 2026
Published: May 18, 2026

Abstract

The rapid development of artificial intelligence (AI) is profoundly transforming the production, dissemination, and reception of music. For adolescents, who are in a critical period of musical aesthetic development, AI recommendation algorithms and AI music generation tools are reshaping their daily musical experiences. For school music education, AI-assisted instruction systems bring both pedagogical innovations and theoretical challenges. From the perspective of music education theory, this paper analyzes the impact of AI on adolescents' musical aesthetics, explores the opportunities and challenges facing school music education in the AI era, and proposes response strategies based on a techno-humanistic stance. The study argues that the core task of music education in the AI era should shift from skill training toward the cultivation of aesthetic judgment and critical listening.

Subject Areas

Art, Music

Keywords

Artificial Intelligence, Adolescents, Musical Aesthetics, Music Education, Aesthetic Judgment

1. Introduction

In recent years, the application of artificial intelligence in music has grown exponentially. From AI music generation tools such as Suno and AIVA, which can produce music comparable to human compositions, to the recommendation algorithms of short-video and music streaming platforms that precisely capture and

shape users' musical preferences, and to intelligent accompaniment systems and solfeggio applications gradually entering homes and schools—AI is penetrating adolescents' musical lives with unprecedented depth and breadth. Here, "musical aesthetics" refers to the ways individuals perceive, interpret, and value musical works and experiences. "Aesthetic judgment" denotes the capacity to evaluate music based on criteria such as expression, originality, and cultural meaning [1]. "AI literacy" means understanding the basic principles, capabilities, and limitations of AI systems in music. A "techno-humanistic stance" views AI as a tool that serves human educational goals rather than as an end in itself.

This technological transformation raises two major questions for adolescents' musical aesthetics and school music education. On the one hand, AI technology dramatically lowers the barriers to music access and creation, providing young people with unprecedented opportunities for musical experience. On the other hand, algorithmic feeding may lead to fragmented and homogenized aesthetic experiences, while AI-generated works blur the criteria for judging "good music" [2]. Facing this situation, music education needs to re-examine its own goals and methods from a theoretical perspective. This paper offers a conceptual and theoretical analysis, drawing on selected representative examples from the literature (e.g., studies on algorithmic recommendation effects, AI music generation capabilities, and music education theory) to support a systematic examination. It systematically analyzes the impact of AI on adolescents' musical aesthetics and music education and proposes corresponding recommendations.

2. Major Forms of AI Intervention in Music

Currently, AI's intervention in adolescents' musical lives and music education mainly takes three forms:

First, AI music generation and composition tools. AI systems such as Suno, AIVA, and NetEase TIANYIN can automatically generate complete musical works based on user-input parameters such as style, mood, and theme. Empirical listening tests have shown that ordinary listeners often cannot reliably distinguish AI-generated music from human-composed pieces (e.g., studies comparing Suno outputs with human compositions in similar genres) [3]. The ease of use of these tools allows adolescents without professional composition training to "create" music. However, this also raises aesthetic judgment issues such as "who is the author" and "how to evaluate the value of the work."

Second, intelligent recommendation algorithms. The core recommendation mechanisms of platforms like TikTok, NetEase Cloud Music, and Spotify are based on collaborative filtering algorithms of user behavioral data, accurately pushing music content that aligns with users' existing preferences. Research indicates that such algorithms not only serve existing preferences but actively shape and solidify users' aesthetic tastes over time (e.g., studies on filter bubbles and preference reinforcement in music streaming). For adolescents whose musical aesthetics are still developing, this process carries particular risks.

Third, AI-assisted music instruction tools. Intelligent accompaniment systems (such as the AI version of VIP Peilian), adaptive learning apps for solfeggio, and intelligent music theory assessment tools are transforming the traditional one-on-one music teaching model. These tools provide instant feedback and personalized practice plans, but their educational value depends on how they are integrated into the overall teaching system.

3. The Impact of AI on Adolescents' Musical Aesthetics

A. The Reshaping of Aesthetic Experience: From Active Exploration to Algorithmic Feeding

Traditional musical aesthetic experience depends on adolescents' active exploration—gradually establishing their musical tastes through peer recommendations, radio listening, physical record purchases, and active searches. This process itself holds educational value: young people need to make choices among limited information and form judgments through comparison.

AI recommendation algorithms change this mechanism. Adolescents no longer need to actively "search" for music but passively receive algorithmically pushed "recommended for you" content [4]. On the surface, algorithms improve the efficiency of music access. But the deeper question is: when choices are made in advance, how can adolescents' aesthetic initiative be cultivated? When every click is recorded by the algorithm and reinforces existing preferences, what happens to opportunities for serendipitous discovery and aesthetic breakthroughs?

B. The Risk of Homogenization in Aesthetic Preferences

The core logic of recommendation algorithms is to maximize user engagement, leading algorithms to favor "safe" content—works that conform to users' known preferences and predictable styles. Over time, adolescents become enclosed in "filter bubbles," with increasingly narrow exposure to musical styles. Some studies have found that long-term users of recommendation algorithms show significantly less diversity in their playlists compared to users who obtain music through human recommendations or active searches. This homogenization trend is particularly concerning for adolescents in their critical period of aesthetic development. Healthy musical aesthetic development requires maintaining tension between the familiar and the unfamiliar, the comfortable and the challenging. The algorithmic mechanism precisely weakens this tension.

C. The Challenge to Aesthetic Judgment: Evaluating AI-Generated Works

Research has demonstrated that the quality of AI-generated music has reached a level where ordinary listeners frequently fail to distinguish AI-composed works from human-composed ones (e.g., Turing-style listening tests with Suno, AIVA, and human references).This technological reality poses a fundamental challenge to adolescents' musical aesthetic judgment: if one cannot distinguish between human and machine creation, what are the criteria for judging "good music"? Technical sophistication, emotional expression, originality, cultural context—which dimensions should form the basis of musical aesthetic judgment?

This question does not require adolescents to master techniques for "identifying AI." Rather, it prompts music education to reflect: in an era when AI can imitate or even surpass certain technical indicators, what should music aesthetic education teach?

4. Challenges and Opportunities for School Music Education

A. Changes in Teaching Subjects and Roles

The basic structure of traditional music education is a teacher-student binary relationship. The intervention of AI transforms this relationship into a teacher-student-AI triadic structure [5]. AI can assume some functions of skill training and knowledge transmission (such as rhythm training, pitch discrimination, and music theory exercises), while teachers shift from "knowledge transmitters" to "learning guides" and "aesthetic dialogue partners." This transformation places new demands on teachers' professional competence and role perception.

B. Expansion of Teaching Content

Music education in the AI era cannot avoid technological issues. The author argues that AI literacy—understanding AI's basic operations in music, critically engaging with AI-generated content, recognizing ethical implications, and using AI tools appropriately in learning—should become a new dimension of music education. These elements are not a replacement for traditional music education but an expansion and deepening of it.

C. The Tension Between Personalized Learning and Large-Scale Instruction

A prominent advantage of AI-assisted instruction tools is their ability to provide personalized learning paths. In a classroom where students differ in musical foundations, learning paces, and interests, AI systems can adjust practice content and difficulty based on individual performance. However, music education is not merely individual skill acquisition; it also includes social experiences such as ensemble performance and choral singing, as well as dialogue and interaction among teachers and students regarding musical understanding. Balancing technological empowerment with human interaction is a key question for music education in the AI era.

5. Responses and Constructive Proposals from the Perspective of Music Education Theory

Facing the changes brought by AI technology, music education must return to fundamental questions: What is the core goal of music education?

American music educator Bennett Reimer emphasized the aesthetic essence of music education, arguing that its value lies in cultivating students' sensitivity and responsiveness to the intrinsic aesthetic qualities of music. David Elliott proposed a "praxial" philosophy, suggesting that music education should focus on music as diverse human practices, including composition, performance, listening, and improvisation. In the AI era, the perspectives of both theorists provide important reference points for us.

The author advocates a techno-humanistic stance: AI is a tool, not an educational end. The core of music education is not to teach students to use AI tools, but to cultivate their aesthetic judgment, critical listening ability, and musical-cultural understanding in the context of AI's widespread intervention in musical life. Specifically, the following teaching principles can be constructed:

First, shift from skill training to the cultivation of aesthetic judgment. When AI can assist with basic skill training, classroom teaching should focus more on comparative listening, style differentiation, work analysis, and aesthetic discussion.

Second, use AI as an object of critical listening. Teachers can design activities in which students compare AI-generated and human-performed versions of the same work, discussing differences and their causes.

Third, maintain non-algorithmic spaces for music exposure. Classroom teaching should consciously expose students to diverse musical styles and cultural traditions beyond algorithmic recommendations.

6. Recommendations

Based on the above analysis, this paper offers the following recommendations:

For music teachers: Proactively improve your own AI literacy, understand the capabilities and limitations of AI tools, deliberately design "human-machine comparison" listening and discussion sessions, and help students develop a critical attitude toward AI music rather than blind worship or rejection.

For curriculum designers: Integrate AI-related aesthetic and ethical topics into existing music curricula. For example, include discussion units such as "Can AI create music?" and "How should we evaluate AI music?" in appreciation classes, transforming technological issues into resources for aesthetic education.

For educational administrators: When introducing AI teaching tools, maintain the priority of humanistic values. Technology procurement should serve teaching goals, avoiding a "technology for technology's sake" tendency.

For future research: Empirical studies are urgently needed to longitudinally track the relationship between AI use and adolescents' musical aesthetic development, providing data support for educational decision-making.

7. Scope and Limitations

This paper focuses on adolescents roughly between the ages of 12 and 18, corresponding to middle and high school levels, within the context of Chinese school music education, though some findings may apply to other educational systems. Several limitations should be acknowledged. First, the impact of AI algorithms and generation tools may vary significantly across different music platforms (e.g., short-video vs. streaming-only apps), music genres (e.g., popular vs. classical), and individual differences such as prior musical training, socioeconomic background, and family or school environments. Second, the empirical evidence cited regarding filter bubbles and playlist diversity is drawn from general media studies; more music-specific longitudinal research is needed. Third, the rapid evolution of

AI tools means that specific capabilities (e.g., Suno's output quality) may change quickly, requiring ongoing updates to any educational analysis.

8. Conclusion

Artificial intelligence is profoundly changing adolescents' musical aesthetic experiences and the landscape of school music education. The analysis in this paper shows that AI brings not merely technological changes but fundamental questions about musical aesthetic judgment and the goals of music education. Facing this challenge of our time, music education should not respond passively but actively construct a proactive stance: from a techno-humanistic position, while acknowledging the value of AI tools, reaffirming the central importance of aesthetic judgment and critical listening. Only in this way can music education continue its fundamental mission in the AI era—to cultivate complete human beings who can understand, feel, and judge the value of music.

Conflicts of Interest

The author declares no conflicts of interest.

References

[1] Wu, X. F. (2025) Exploration on the Paths and Strategies of Music Education Curriculum Reform in the Age of Artificial Intelligence. *Research in Higher Education of Engineering*, No. S1, 234-237. (In Chinese)

[2] Zhang, H.L. (2023) Hotspots and Characteristics of International Music Education Research (2006–2022): A Study Based on Highly Cited Papers from the International Society for Music Education and Its Journal *International Journal of Music Education*. *China Music*, No. 4, 201-208. (In Chinese)

[3] Wang, X. (2022) Reflections on the Transformation of Music Education Driven by Artificial Intelligence. *Journal of Nanjing Arts University* (*Music and Performance Edition*), No. 6, 193-197. (In Chinese)

[4] Wen, H. (2021) Reflections on the Interaction Between Artificial Intelligence Technology and Music Education. *Sichuan Drama*, No. 9, 170-172. (In Chinese)

[5] Li, W. (2019) The Application and Research of Musical Artificial Intelligence in the Field of Music Education. *Journal of Xinghai Conservatory of Music*, No.3, 145-150. (In Chinese)