

Study on the Design of Music Aesthetics Instruction for High School Students based on Synesthesia and Empathy

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Abstract: Synesthesia and empathy are two psychological elements that underpin the development of musical aesthetics. They progress in stages and operate synergistically, jointly facilitating the transformation from physical sound to aesthetic meaning. This paper examines the intrinsic characteristics, aesthetic levels, and synergistic logic of synesthesia and empathy. Drawing on psychological theories, it analyzes the psychological characteristics of high school students' musical aesthetics, which are characterized by a blend of sensibility and rationality, aesthetic openness coupled with reserved expression, and a rich life experience despite limited imagination. Based on students' learning contexts and the laws of aesthetic perception, this paper proposes a classroom implementation approach featuring multisensory experiences, layered emotional empathy, and a "experience first, interpretation later" approach. Using Unit 16, "Impressionist Music," from the Renyin Edition of *High School Music Appreciation* as a case study, a teaching activity design is developed, aiming to provide practical and feasible teaching strategies for high school music appreciation classes that balance sensory experiences with emotional insight.

Keywords: Synesthesia, Empathy, Music Appreciation, High School Music Education.

1. The Two Psychological Foundations of Musical Aesthetic Activities

Musical aesthetic experience is not merely a single auditory reception but a cognitive and emotional process achieved through the interplay of multiple psychological activities. In the process of music appreciation, synesthesia and empathy are the two psychological elements that underpin the generation of aesthetic experience and facilitate musical understanding, jointly building a bridge that transforms physical sound into aesthetic meaning.

1.1. Characteristics and Aesthetic Value of Synesthesia

Synesthesia is a cross-modal psychological phenomenon inherent in the human perceptual system. It refers to a perceptual response in which stimulation of one sense automatically triggers another sense to simultaneously produce a stable psychological experience. Within the framework of music psychology, synesthesia is not a product of individual subjective imagination but rather a universal and regular psychological response rooted in the structure of human physiological perception; it serves as the innate foundation for the understanding, perception, and interpretation of music. Compared to the visual arts, which possess intuitive, three-dimensional forms, music exists in a fluid, abstract, and non-figurative sonic form. It does not inherently convey imagery, emotions, or narratives. The reason listeners are able to discern artistic atmosphere and emotions from purely physical sound is fundamentally due to synesthesia, which facilitates this perceptual transformation.

There are fixed synesthetic correspondences between musical elements and human sensory experiences. Pitch evokes spatial sensations of light and dark, lightness and heaviness, and rising and falling; high pitches convey psychological sensations of brightness, lightness, and upward movement, while low pitches create inner imagery of

heaviness, depth, and downward movement; Rhythm and tempo correspond to physical sensations of relaxation or tension; rapid, dense notes evoke restlessness and tension, while a smooth, balanced rhythm creates a sense of ease and tranquility; dynamics and timbre directly alter the inner texture of a piece; forte passages and rich timbres convey a strong sense of impact, while piano passages and clear, transparent timbres convey a gentle, ethereal experience. These patterns of correspondence are not limited by age, demographic, or culture; they represent a universal logic of musical perception shared by all humanity.[1]

1.2. Levels of Empathy and Aesthetic Significance

Empathy is a crucial form of psychological activity in aesthetic experiences. Western aesthetician Lipps explained its essence as follows: through the outward projection of one's own emotions and subjective consciousness, the aesthetic subject endows the aesthetic object with personified emotional traits, thereby eliminating the aesthetic barrier between subject and object and ultimately achieving an aesthetic realm of emotional fusion between the two. Extended to the field of music education, the theory of empathy further distinguishes between musical aesthetic empathy and everyday psychological empathy, pointing out that musical empathy is a purely aesthetic act guided by an immersive aesthetic experience and using musical sound as its exclusive medium, possessing distinct artistic and non-utilitarian characteristics.

Empathy manifests in aesthetic layers ranging from shallow to deep. The first layer is unconscious emotional contagion, an instinctive emotional response directly triggered by musical sounds through synesthetic stimulation. Changes in pitch, volume, and tempo stimulate the human nervous system, naturally evoking basic emotions such as pleasure, tranquility, excitement, and sadness—fundamental sensations that all people can experience without conscious

thought. The second layer involves conscious situational projection and emotional assimilation. Building upon these basic emotional experiences, the aesthetic subject actively draws upon their life experiences, emotional memories, and imagination to imbue the musical sounds with context, narrative, and meaning, projecting their personal life experiences onto the music and achieving a deep fusion between their own emotions and the musical atmosphere. Compared to superficial emotional resonance, higher-level empathy is characterized by proactivity, constructiveness, and individuality; it is the key to the listener's true understanding of the music's inner emotions.[2]

2. Psychological Developmental Characteristics of High School Students' Musical Aesthetics

High school is a transitional period during which aesthetic cognition, emotions, and thinking gradually mature. The psychological aspects of musical aesthetics at this stage differ from the purely sensory and intuitive experiences of elementary and middle school, yet have not yet developed into the fixed aesthetic cognitive system typical of adults. While they naturally possess aesthetic potential in the form of synesthetic perception and emotional empathy, this potential is constrained by multiple factors-including the psychological characteristics of adolescence, an exam-oriented educational environment, and the atmosphere of classroom evaluation-making it difficult for their inherent aesthetic potential to be fully realized.

2.1. The Symbiosis of Sensory Intuition and Rational Thinking

According to Piaget's theory of cognitive development, high school students have entered the formal operational stage. They possess the abilities for abstract reasoning, cognitive reflection, and inductive generalization, enabling them to engage in rational analysis and deep reflection on objective phenomena. This provides the cognitive foundation for music appreciation to progress from superficial experience to in-depth interpretation. However, in the context of music appreciation, students' modes of perception are still guided primarily by sensuous intuition, resulting in an aesthetic characteristic where sensuous experience and rational cognition coexist.

During the process of listening to music, students rely on innate perceptual instincts to generate synesthetic experiences. Through elements such as pitch, rhythm, and timbre, they create concrete aesthetic representations-such as visual images, bodily sensations, and spatial perceptions-thereby completing psychological reception at the sensorial level. At the same time, they use logical thinking to organize, integrate, and linguistically translate these fragmented sensory experiences, combining them with the musical piece's background and compositional techniques to form a multi-layered internal understanding.[3] This aesthetic structure equips high school students with the innate cognitive conditions necessary to engage in synesthetic activation and in-depth appreciation through layered empathy, distinguishing them from students in lower grade levels who are limited to passive perception and unable to express themselves deeply.

2.2. The Coexistence of Aesthetic Openness and Expressive Restriction

Erikson's theory of psychosocial development in adolescence points out that developmental conflicts during adolescence manifest as the dialectical unity of self-identity and role confusion. This psychological trait causes high school students' musical aesthetic emotions to exhibit the contradictory characteristics of both openness and closure.

In terms of aesthetic openness, high school students possess a rich and nuanced emotional world and a high degree of empathy; they have a strong ability to perceive the emotional tension, artistic atmosphere, and humanistic sentiments conveyed by music.[4] Compared to the fixed aesthetic preferences of adults, high school students exhibit greater aesthetic openness; they are able to accept musical works of different styles, moods, and artistic atmospheres, and are highly likely to resonate psychologically with the emotional core and life experiences conveyed in music. They possess excellent potential for empathetic aesthetic appreciation, making this a critical stage for cultivating deep musical empathy.

In terms of expressive closedness, adolescents have a strong sense of self-awareness, place great importance on their self-image and external evaluations, and are prone to classroom anxiety. Musical aesthetics inherently exhibit significant individual variation; students' synesthetic imagery, emotional associations, and contextual constructions are all personalized aesthetic outcomes. However, in a group classroom setting, students are often reluctant to reveal their true aesthetic feelings out of fear of rejection by the teacher or criticism from peers. This ultimately leads to a state of closure characterized by "rich inner experiences but no effective expression in class," hindering the progression of aesthetic appreciation from superficial emotional resonance to deeper contextual projection.[5]

2.3. Imbalance Between Life Experience and Aesthetic Imagination

Through long-term life experiences and academic learning, high school students possess relatively rich life experiences and emotional memories. Diverse life experiences-such as family bonds, personal growth, partings, and personal struggles-provide ample and vivid material to support musical aesthetic associations, situational projection, and emotional empathy. This rich reservoir of experience enables students to construct unique narrative scenarios for abstract music based on their personal experiences, thereby achieving personalized, profound empathetic experiences. This constitutes a key advantage in the learning context that allows for deep learning in high school music appreciation.[6]

However, the standardized thinking fostered by a long-term exam-oriented environment significantly constrains and suppresses students' aesthetic associations. The emphasis on single "correct" answers and standardized response logic has led students to develop rigid mental patterns, causing them to habitually seek "standard answers" while avoiding personalized expression. In open-ended music appreciation classes, students no longer prioritize drawing upon their own experiences and aesthetic intuition; instead, they focus on discerning the teacher's instructional intent and the standard interpretation of the textbook, fearing that their unique aesthetic associations might be deemed "wrong." This anxiety over "standard answers" restricts students' aesthetic agency,

preventing their rich reservoir of experiences from being transformed into effective aesthetic resources.

3. Teaching Approaches Guided by Synesthesia and Empathy

Based on the psychological development characteristics of high school students' musical aesthetics, and in light of the principles governing the role of synesthesia and empathy in musical appreciation, high school music appreciation instruction should align with the cognitive and emotional development of adolescents and build appropriate classroom teaching approaches by drawing on students' existing aesthetic potential. Instruction should center on stimulating sensory experiences, deepening emotional empathy, and respecting autonomous aesthetic judgment. It should break away from traditional teaching models that overemphasize knowledge-based lectures, fully unleash students' aesthetic talents, guide music appreciation from superficial auditory perception toward profound aesthetic experiences, and advance music appreciation from passive listening to active understanding.

3.1. Opening Channels for Diverse Sensory Experiences

Synesthesia serves as the foundational perceptual vehicle for musical aesthetics and is an innate aesthetic ability among high school students. Given the aesthetic cognitive characteristics of high school students, in which sensory intuition takes precedence, the teaching process should establish multi-sensory, interconnected experiential pathways to awaken students' spontaneous cross-sensory aesthetic perception and accumulate psychological material for deep emotional experiences.

During classroom listening sessions, teachers can move beyond a purely auditory listening model by designing immersive activities that integrate auditory, visual, kinesthetic, and spatial sensory experiences. By integrating musical elements such as pitch, rhythm, dynamics, and timbre, teachers can guide students to transform melodic fluctuations into visual imagery-such as variations in color brightness, layers in a scene, and changes in spatial elevation-and to translate variations in tempo and intensity into bodily sensations of relaxation, tension, expansion, and movement. Through open-ended experiential guidance, teachers can fully mobilize students' ability to integrate their senses, allowing abstract musical forms to take shape as personalized mental images. At the same time, instruction must fully respect individual differences in synesthesia, fostering an inclusive and free classroom atmosphere that embraces all authentic and unique expressions of synesthesia. This allows students to confidently unleash their innate aesthetic perceptions and fully realize their aesthetic potential.[7]

3.2. Establishing a Tiered Pathway for Emotional Empathy

Empathy that progresses from shallow to deep aesthetic levels aligns with high school students' gradual development of aesthetic cognition and suits their psychologically rich, emotionally vibrant, and empathetically sensitive nature. Instruction should follow the principle of "emotional perception first, contextual construction second," gradually deepening students' emotional experiences and leveraging their rich life experiences and emotional memories to forge a

close connection between music and their individual life experiences.

Starting with superficial emotional sensations and relying on intuitive auditory experiences of music, teachers should guide students to capture the emotional tone of a piece. They should respect students' straightforward and unadorned emotional expressions, using simple emotional judgments as a foundation for aesthetic appreciation. This lowers the threshold for students' aesthetic expression and alleviates anxiety about speaking up in class. Once students have established a foundation of emotional cognition, we further advance their empathetic experience. Through contextualized questioning and immersive guidance, we inspire students to draw upon their own growth experiences, life observations, and emotional memories to construct corresponding scenarios and narratives for the piece, thereby imbuing the music with personalized emotional significance. This approach balances the universality of foundational aesthetic experiences with the individualized needs of higher-order aesthetic construction, enabling students to progress from simply perceiving the emotions in music, to understanding the emotional core and humanistic significance of music, thereby achieving genuine emotional empathy and aesthetic comprehension.

3.3. Optimizing the Sequence of Aesthetic Instruction in the Classroom

High school students possess the ability to think independently and construct their own aesthetic perceptions, but their aesthetic expression is often constrained by rigid thinking patterns. To fully leverage students' aesthetic autonomy and align with their open-minded aesthetic characteristics, instruction should follow a "experience first, interpretation later" sequence to preserve students' authentic aesthetic experiences.

In the initial stage of work appreciation, focus primarily on "unadorned listening experiences," freeing students from the constraints of external assumptions and "correct answers." By relying solely on the music itself for listening, association, and emotional empathy, the authenticity and uniqueness of the aesthetic experience are preserved to the greatest extent possible. Only after students have fully engaged in personalized aesthetic expression and formed their own aesthetic understanding should teachers, at an appropriate time, supplement the lesson with information on the work's creative background, the composer's intent, and its historical context, guiding students to compare the similarities and differences between their independent experiences and the work's original meaning. This instructional sequence not only respects high school students' aesthetic autonomy and avoids the suppression of aesthetic imagination caused by a "standard answer" mindset, but also incorporates rational analysis through supplementary professional knowledge. By integrating emotional experience with rational thought, it ensures that students' personalized aesthetic expressions are heartfelt and their professional interpretations are well-founded, thereby fostering a comprehensive and multidimensional process of music appreciation.

4. Designing Teaching Activities That Integrate Synesthesia and Empathy

Based on an analysis of the psychological characteristics of high school students' musical aesthetics and teaching implementation pathways, this paper takes Unit 16, "The

Colorful Impressionists,” from the Renyin Edition of *High School Music Appreciation* as an example. It selects Debussy’s *La Mer—From Dawn to Noon*, *Reflections in the Water*, and the first movement, “Clouds,” from the orchestral suite *Nocturnes* as instructional content, to develop a specific music appreciation activity design that progressively facilitates the aesthetic process of synesthetic perception, empathetic understanding, and comprehensive aesthetic expression.

4.1. Synesthetic Experience Activity for Auditory Color

Without introducing the background of the pieces or providing any predetermined aesthetic guidance, play an excerpt from **On the Sea—From Dawn to Noon** and guide students to capture the dynamic changes in timbre, tempo, and dynamics. Have them record the intuitive visual impressions conveyed by the sounds using color blocks, simple lines, and other means. After students have completed their initial recordings and engaged in brief discussions, play an excerpt from **Reflections in Water**. Guide students to distinguish the differences in overall atmosphere and fluid texture between the two pieces depicting water scenes. Through comparative listening, deepen their perception of the layers of musical color. The aim is to create a perceptual space for students free from external information, establish a connection between sound and visual sensations, preserve pure, fundamental sensory impressions, and lay the groundwork for subsequent emotional experiences.

4.2. Activity to Deepen Empathy Through Musical Narrative

Play *On the Sea—From Dawn to Noon* in its entirety. Students should listen again while referring to their recorded lines and color blocks, letting their imagination unfold with the music to sketch the scenes evoked by the sounds, or recall life experiences with a similar atmosphere. By combining the piece’s overall texture with their perception of the underlying emotional shifts, they should record their most genuine inner feelings at that moment in a few brief words. After students have fully exchanged ideas and expressed their personalized listening experiences, the teacher supplements the discussion with relevant background information about the piece and the composer’s creative intent. At the same time, the teacher explains that the composer’s creative intent is presented solely as one perspective for appreciation; there are no fixed “correct answers” in musical aesthetics, and every student’s genuine feelings and independent interpretations hold their own aesthetic significance. This phase effectively prevents preconceived imagery from constraining students’ aesthetic imagination, allowing pure auditory sensations to naturally merge with personal emotions and life experiences, thereby facilitating the transition from superficial sensory perceptions to genuine emotional insight.

4.3. Comprehensive Aesthetic Activities Through Role-Playing

Students integrate the color blocks, lines, inner emotions, imagined scenes, and life experiences recorded during the

first half of the class, organizing their scattered, fragmented impressions into a coherent and complete listening experience to discuss and share. Finally, the first movement, “Clouds,” from the orchestral suite *Nocturne* is played to facilitate an extended listening activity. This piece, which depicts scenes of the sky, contrasts with the previous two pieces that portrayed water scenes. Through this comparison, students experience the shared characteristics of Impressionist music in rendering natural light and shadow and creating rich layers of color. This segment integrates the accumulated sensory and emotional experiences, clarifies a coherent listening framework, deepens students’ understanding of the overall style of Impressionist music, and guides them through the entire process—from capturing the texture of sound and experiencing the underlying emotions to fully expressing their personal aesthetic insights.

5. Conclusion

This study developed a teaching pathway by combining the aesthetic principles of synesthesia and empathy with the psychological characteristics of high school students, and completed the corresponding classroom activity design. It attempted to use immersive experiences and tiered guidance to reduce the constraints that standardized interpretations place on aesthetic appreciation, allowing music appreciation to return to the essence of perception and emotional experience. Due to resource constraints, this instructional design has not yet been implemented in actual classrooms for practical testing. Whether the activity flow, duration of each segment, and student acceptance are fully suited to real teaching scenarios remains to be further verified and adjusted. We look forward to implementing this plan in the future, identifying and addressing shortcomings through practice, and refining the design. We also hope that the insights and design concepts presented here will serve as a reference for similar music appreciation courses.

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