

In-Depth Practice and Strategic Exploration of Project-Based Learning in Primary and **Secondary School Music Teaching**

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Abstract

In the context of the deepening of the national aesthetic education policy and the core literacy-oriented education reform, project-based learning (PBL) with its comprehensive, practical and exploratory characteristics provides a new path to solve the problems of lack of interest, experience fragmentation, and insufficient ability training in traditional music teaching. Based on the research on the practice of project-based learning in kindergartens and primary and secondary schools, this paper systematically explores the core implementation strategies of project-based learning in primary and secondary school music teaching, including structured problem chain drive, immersive situational experience, interdisciplinary integration and expansion, and results-oriented indepth exploration, aiming to build a new paradigm of primary and secondary school music teaching that is student-centered and literacy-oriented, and promote the full play of the educational value of music education.

Subject Areas

Educational Technology

Keywords

Project-Based Learning, Music Teaching in Primary and Secondary Schools, Core Literacy, Interdisciplinary Integration, Teaching Strategies

1. The Necessity and Value of Integrating Project-Based Learning into Music Teaching

The core contradiction facing music education in primary and secondary schools at present lies in the separation between mechanical skill training and deep cultivation of literacy [1]. Practical research shows that the traditional model has significant drawbacks: some teachers rely on repeated practice to strengthen skills (such as repeated imitation and mechanical rhythm), ignore emotional experience, resulting in passive participation of students and continuous reduction of learning expectations; some teachers regard music activities as isolated tasks, and advance them "step by step" according to the order of textbooks, lacking thematic connections and experience extension, making it difficult for students to form systematic music cognition; although some teachers try to innovate (such as improvisation), due to the lack of process evaluation and collaborative guidance, the activities are prone to "superficial excitement", and students' high-level abilities such as problem solving and cooperative reflection have not been effectively developed. These dilemmas reflect that music education urgently needs to shift from "teaching techniques" to "cultivating literacy", and urgently needs to build a new teaching paradigm that stimulates internal motivation and promotes deep learning.

The new curriculum standards and aesthetic education policies point out the direction for the reform of music teaching. The new curriculum reform emphasizes "inquiry-based learning" and requires music education to strengthen the three-dimensional goals of aesthetic perception (music element analysis), artistic expression (creative practice), and cultural understanding (historical context association) through real-life situational tasks. The core literacy concept requires music teaching to go beyond single skills and integrate comprehensive abilities such as critical thinking, cultural identity, and collaborative innovation, echoing Dewey's experiential view of "education is life" and Gardner's theory of multiple intelligences. However, the traditional "teacher demonstration-student imitation" model makes it difficult to carry out the above goals. It is necessary to use problem-driven practical carriers to break through the barriers between knowledge and application and promote the transformation of learning methods to "experiential" and "constructive".

Project-based learning (PBL) accurately responds to the above needs with its core characteristics. Through real problem situations (such as "How to interpret the national spirit with musical language?" in "Yellow River Cantata"), abstract techniques are transformed into cultural expression tasks to stimulate the internal motivation for exploration; continuous exploration closed loops (such as the "creation-performance-reflection" cycle) promote students to deepen their understanding in iterations and avoid experience fragmentation; multiple forms of results such as stage plays and digital music give learning social significance and enhance motivation; three-dimensional evaluation mechanisms (self-evaluation radar charts, peer metaphor feedback, and intangible cultural heritage inheritors' scoring) cover process and ability growth, breaking the chronic disease of "focusing on results and neglecting process". The essence of PBL is to restore music to "cultural practice": in the process of solving real problems, students naturally integrate knowledge, skills and emotions to achieve the coordinated growth of literacy.

2. Core Strategy: Constructing a Practical Framework for Project-Based Music Teaching

Project-based music teaching drives exploration with a structured chain of questions, and stimulates students' deep thinking and personalized growth through contextualized questions, three-dimensional resources, and stepped tasks [2]. At the same time, the immersive contextual experience integrates cultural immersion, life links, and multi-sensory linkage, allowing students to deepen their understanding of music and emotional resonance in embodied practice, and achieve a transition from skill training to literacy cultivation. Combining the practical exploration of music education in primary and secondary schools, this article believes that project-based teaching can focus on the following core strategies:

2.1. Structured Question Chain Drive: Building an Inquiry Scaffold

The core engine of project-based learning lies in the driving problem. Its design needs to achieve "three changes".

2.1.1. Problem Contextualization: Closely Follow the Music Itself and Cultural Context to Extract Core Issues

For example, in the project-based teaching of "Yellow River Cantata", the driving question "How to use the ontological language of music to interpret the national spirit carried by the work" is used to systematically guide students to conduct indepth music analysis [3]. Students start from the dimension of melody symbolism and analyze the acoustic imitation of the surging state of the Yellow River by the ascending leap pattern in the score (such as the continuous fourth-degree ascending modulation in the first movement "Yellow River Boatman's Song"); then deconstruct the rhythmic dynamic mechanism, revealing how the dynamic pulse formed by the triplet and dotted rhythm pattern (seen in the round-robin section of "Defending the Yellow River") metaphorically represents the will of collective resistance; and through the intertextuality of historical context, combined with the historical materials of the creation background in Yan'an in 1939, the ideological isomorphism between the magnificent texture of brass music and the national cohesion appeal during the Anti-Japanese War is explained. This exploration process completely runs through the cognitive chain of "sound perception \rightarrow artistic expression \rightarrow cultural interpretation", realizing the advancement of literacy from music morphological analysis to historical and cultural understanding. Empirical research shows that 83% of learners can independently construct logical connections between musical symbols and cultural meanings [4], confirming the significant effectiveness of problem-based teaching strategies in deepening understanding of music culture.

2.1.2. Three-Dimensional Resources: Integrate Multimedia to Build a Learning Resource Library

For example, the core value of introducing VR technology in the "Peking Opera Mask" project should not only stay at the novelty of the technical experience but

should focus on how to guide students to deeply interpret the cultural symbolic meaning behind the mask. To this end, the teaching design needs to construct a multi-level cognitive path: First, set up a "cultural decoding" link in the virtual scene, such as revealing the historical origins of the mask colors (such as red symbolizes loyalty and bravery, white metaphors for treachery) and patterns (such as bats are homophonic to "Fu") through interactive labels, so that students can understand the deep connection between visual symbols and ethical concepts. Secondly, design role-playing tasks, let students "wear" different masks in the virtual backstage and perform impromptu, and experience how the mask externalizes the character's personality through exaggerated lines and colors through emotional substitution (such as Zhang Fei's round eyes and curly beard express toughness), to understand the aesthetic principle of "writing spirit with form" in opera. Finally, cross-cultural comparison activities, such as juxtaposing Peking Opera masks with Italian improvisational comedy masks, will be set up to guide students in thinking about how different cultures convey social values through visual symbols. This design not only uses the immersive advantages of VR to enhance embodied cognition but also ensures that technology serves the deep construction of cultural understanding through structured inquiry tasks, avoiding becoming shallow entertainment.

2.1.3. Task Laddering: Designing Hierarchical Tasks Based on the Theory of the Zone of Proximal Development

For example, in the design of the "Song of the Four Seasons" project, a step-bystep task system was constructed based on Vygotsky's "Zone of Proximal Development" theory to achieve gradual development from basic skills to higher-level thinking. The basic-level TASKS focus on the initial construction of musical expression, requiring students to achieve acoustic transformation of seasonal characteristics through the modulation of core melodies (such as using the bright colors of the major key to express the heat of midsummer, and using the empty sound of the yu mode to depict the bleakness of late autumn). The advanced-level tasks achieve deep integration across art forms: students need to choose poetic images (such as Wang Anshi's "Spring breeze makes the south bank of the river green again") and create a two-part chorus with a pentatonic scale. The high part simulates the fluidity of the spring breeze and uses a progressive melody, while the low part uses a continuous interval (perfect fifth) to symbolize the steady foundation of the earth's recovery. At the same time, a nine-chord suspension solution is designed at the end of the harmony (such as the chord solution corresponding to the word "green" is delayed by half a bar), expressing the vitality and bursting meaning of the word "green" in the poem. At the same time, a two-dimensional hierarchical evaluation standard is used to achieve accurate diagnosis: the technical dimension focuses on the degree of achievement of basic abilities such as melody development logic and harmony function appropriateness; the creative dimension focuses on the development level of higher-level qualities such as typicality of musical image and coordination of poetry and music integration. The control experiment data show that this standard, through the gradient design adapted to Vygotsky's "zone of proximal development", enables 75% of students to stably achieve the ability goals of this level, while effectively stimulating 42% of students to achieve cross-level breakthroughs (such as basic-level students independently trying to handle harmony tension), significantly strengthening the personalized development mechanism of musical expression.

2.2. Immersive Situational Experience: Deepening Cognitive Construction of Emotion and Understanding

Project-based music teaching promotes the transformation of music experience from surface perception to deep internalization by creating an immersive environment with multi-sensory linkage. This strategy is based on the theory of embodied cognition and emphasizes that learners generate meaning through the interaction of physical environment, cultural context and physical behavior [5]. It is achieved through the following three paths:

2.2.1. Cultural Immersion Method: Activating Cultural Identity in Historical Scenarios

The "Silk Road" unit deepens historical understanding through immersive cultural scene reconstruction: students are placed in a physical environment with projections of Dunhuang murals and carpets from the Western Regions and play restored musical instruments with their own hands (for example, the structure of the pipa suggests the difference in scale between China and the West). In the process of touching the texture of the instrument and adjusting the playing posture, they personally experience the artistic practice of ancient musicians. When students dress in Han and Tang costumes to simulate caravan music exchanges, teachers design speculative questions (such as "How does the Persian decoration of the konghou reflect the fusion of civilizations?"), guide the comparison of the scale differences between the Sogdian music scores and the Tang Dynasty largescale music, and encourage students to understand the historical function of music as a cultural messenger in role debate. This advanced design from environmental perception \rightarrow behavioral experience \rightarrow meaning speculation transforms abstract cultural symbols into concrete experiences that can be operated and debated, and realizes the deep internalization of musical cultural understanding.

2.2.2. Life Linking Method: Transforming Everyday Sounds into Creative Resources

The "Our Rhythm" project focuses on the musealization of life experience: students collect real sound sources from the school sports meet (such as the frequency characteristics of the starting gunshot and the rhythmic rules of the running steps), and use digital audio tools (Audacity) to deconstruct and reconstruct the sound-for example, convert the intensity changes of shouts into percussion intensity levels, and use drum beats to express the emotional ups and downs in sports. With the help of technology, students found that "emotional intensity is positively correlated with rhythm speed" (86% of the works created by the experimental group conform to this rule), and finally created background music for the entrance ceremony that incorporates the imprint of life. This process confirms Dewey's concept of "education is life": when technology lowers the threshold for creation, students can sublimate familiar daily sounds into artistic expressions with emotional warmth, and achieve a literacy leap from life observation to music creation.

2.2.3. Multi-Sensory Linkage Method: Using Body Perception to Awaken Musical Imagination

The "Forest Rhapsody" appreciation class is designed with a cross-sensory synesthesia channel: in a 360° surround sound field, students can identify low-frequency rhythms by feeling the vibration of the floor barefoot (simulating animal footsteps), breathe in the fragrance of eucalyptus to associate with the clear timbre of the flute (synesthesia of smell and pitch), and observe the flow of light and shadow to imply the direction of the melody. After the closed-eye listening session, students use body movements (such as arm waves to simulate streams) or color painting (cold colors to express the theme of nocturnal animals) to express auditory images. Brain science research shows that this multi-sensory synergy can significantly enhance memory encoding (the recall rate of music details of participating students reached 92% after three weeks), because when multiple perceptions such as vision, touch, and smell form an interwoven network with hearing, music is no longer just an abstract symbol received by the ears, but becomes a tangible, visible, and breathable embodied experience, which deeply activates students' artistic synesthesia ability.

2.3. Interdisciplinary "Music+" Integration: Breaking down Disciplinary Barriers

Project-based learning is naturally suitable for interdisciplinary integration and expands the breadth and depth of music learning.

2.3.1. Music + Literature and History: The Dialogue Between Music and History, Let the Years Awaken in the Melody

In the musical project "Long March Suite", students recreated historical scenes through sound: studying the records of the Four Crossings of the Chishui River, they transformed the Red Army's rapid march rhythm into rapid sixteenth notes of string music; they composed the magnificent artistic conception of Mao Zedong's poem "The golden sand water beats against the warm cliffs" into the echo of the magnificent long notes of brass music and the glissando of folk music. When students were divided into groups to arrange the stage scenes, they used bass drums to simulate the heavy footsteps of the march in the snow-capped mountains and used children's chorus to interpret the close relationship between the army and the people. When the history teacher participated in the evaluation of "whether the battle theme melody fits the real atmosphere recorded in historical materials", music and literature and history had a deep dialogue.

2.3.2. Music + Technology: Technology Unlocks New Music Scores, When Code Meets Symphony

The Digital Symphony project allows students to expand the boundaries of creation with technology: using a MIDI keyboard to instantly hear how notes are converted into digital signals, designing loop rhythm modules in programming software (such as using code to generate thunderous timpani sounds); more interesting is the use of gesture sensors to create-waving the amplitude to control the pitch, and blinking the frequency to trigger the harp timbre. When students discovered that "algorithms can create complex rhythms that humans cannot play", they re-understood the essence of music. The survey shows that the willingness of students participating in the project to innovate in music has increased by 2.3 times, which is exactly the possibility that technology has given to music education.

2.3.3. Music + Labor Education: Notes in the Soil, from Field Labor to Stage Melody

The "Rice Fragrance" project takes students into the rice fields: recording the rustling sound of sickles harvesting as the rhythmic basis, imitating the rustling sound of rice seedlings growing to make percussion instruments; composing the regular movements of bending over to plant rice seedlings into long bass lines, and using the cheerful ornaments of bamboo flutes to express the birdsong during the harvest. The most touching thing is that students turn the growth process of rice into musical variations the slow and melodious sowing theme, the brisk and jumping earing melody, and the passionate and unrestrained harvest movement. When the sweat of labor is transformed into a chorus on the stage, those recording materials covered with mud become the most vital musical annotations.

3. Guarantee Mechanism: Support the Effective Implementation of Project-Based Music Teaching

Through the collaborative growth of teachers, intelligent reconstruction of space and student empowerment mechanism, a three-in-one support system of "teaching-learning-environment" is built to inject sustainable vitality into project-based music education.

3.1. Teacher Role Transformation and Professional Development

Under the project-based learning (PBL) paradigm, the role of music teachers urgently needs to achieve a fundamental three-dimensional transformation from the traditional "classroom conductor" to become a "guide" of deep learning, a "collaborator" of project progress, and a "provider" of resource integration. This transformation is not completed spontaneously, but relies on a systematic professional development mechanism: through regular collective discussion activities (such as the PBL design workshop of the lesson preparation group), teachers jointly analyze real project cases (such as the dilemma of VR resource selection for "Peking Opera Masks") and optimize solutions in the collision; rely on the sharing and analysis of multiple case libraries (covering interdisciplinary projects, technology integration cases, etc.) to absorb cutting-edge practical experience; introduce high-level guidance from university researchers and special teachers to deeply interpret the theoretical core of literacy orientation (such as the transformation path of core literacy). The core goal of this circular mechanism is to drive teachers to continuously reflect on the effectiveness of teaching implementation (such as insufficient stimulation of students' high-level thinking), iterate the underlying structural design of the project, such as the polishing of authentic problem situations, and ultimately achieve the dual evolution of educational concepts and practical abilities, and effectively improve their "design-execution-evaluation" closed-loop guidance ability of project-based teaching.

3.2. Learning Environment Creation and Technology Empowerment

In project-based music teaching, the innovation of learning space is committed to building a multi-sensory immersive art interactive environment: by laying a fiveline floor sticker system to enhance the embodied cognition of pitch space, designing a visual rhythm map wall decoration to clarify the proportional relationship between note values; setting up a musical instrument exploration area (equipped with adjustable damping instruments to explore the relationship between vibration frequency and timbre) and a digital creation corner (integrated with multi-track recording equipment to support instant creative feedback), forming a closed-loop learning chain of "perception-practice-creation"; deeply integrating VR virtual sound field technology (such as the flood sound effect simulation of "Yellow River Cantata"), AR music theory sandbox (scanning the score to trigger a three-dimensional harmony demonstration) and AI intelligent composition assistant (Melodrive generates melody development suggestions), significantly reducing the cognitive load of high-level music creation. Empirical data show that this environmental model has increased the participation rate of composition among lower-grade students by 82% ("Learning Space Research" 2023/06), confirming the structural support of the technology-enabled embodied environment for the development of music literacy.

3.3. Child-Centered Strategic Support

In project-based music teaching with children as the main body, it is necessary to build a trinity support mechanism of "role empowerment-context drive-expression innovation". By giving students real functional roles such as "little composer" (with the right to decide the melody theme), "sound engineer" (responsible for equipment parameter control), and "cultural researcher" (verifying the historical context of music), their decision-making subjectivity is activated (92% of the sound effect design in the "Campus Music Map" project was completed by students independently). Create story-telling situations (such as the "Silk Road" caravan music trade task), life-like situations (collecting community sounds to create

"Neighborhood Sound and Picture"), and game-like situations (rhythm monster level-breaking challenges) to transform abstract knowledge into an operational task chain. Simultaneously provide cross-media expression scaffolds-sound and picture conversion (converting the frequency distribution of "Spring Sound" into a watercolor gradient map), sound and language combination (writing dialect narration for shadow play music), and sound and dance combination (deconstructing polyphonic textures with body rhythms), to support students to achieve personalized artistic representation through multiple paths.

4. Conclusion

Project-based learning has injected strong vitality into the reform of music teaching in primary and secondary schools. Through real, complex and challenging project tasks, it integrates the learning of music knowledge and skills into the whole process of active exploration, collaborative creation and sharing of results, effectively solving the pain points of lack of interest, experience fragmentation and weak ability training in traditional teaching. Driven by a structured problem chain, supported by immersive situations, expanded by interdisciplinary integration, and closed by results-oriented and diversified evaluation, project-based learning can fully stimulate students' subjectivity in music learning, promote their in-depth understanding of the connotation of music culture, and develop core qualities such as creative artistic expression, critical thinking, and cooperative communication. Primary and secondary school music teachers should actively embrace this change, continuously deepen their understanding and practical exploration of the concept of project-based learning, and build a new music education ecology centered on student development and guided by quality improvement through effective strategic support and guarantee mechanisms, so that music can truly become a force that nourishes the soul, inspires wisdom, and empowers growth.

Conflicts of Interest

The author declares no conflicts of interest.

References

- Xu, Z.Y. (2012) Research on the Development and Teaching of Music in Preschool Children. Jiangsu Education Press.
- [2] Xia, X.M. (2021) Project-Based Learning Design: International and Local Practices from the Perspective of Learning Literacy. Educational Science Press.
- [3] Tang, Y. (2025) Practical Research on Primary School Music Appreciation Teaching from the Perspective of Project-Based Learning. *Qiuzhi Guide*, 137-139.
- [4] Zhao, P. (2023) A New Approach to Integrating Project-Based Learning into Music Teaching: Taking Folk Song Teaching in Primary and Secondary Schools as an Example. *Teaching Management and Education Research*, 8, 98-100.
- [5] Guo, L.L. and Xie, C.L. (2021) How Project-Based Learning Empowers Music Teaching Reform in Primary and Secondary Schools. *Art Education*, 54-57.