

Article

A Hierarchical Exploration of the Infiltration of Aesthetic Music Education in Secondary Schools Based on the Three-Dimensional ABC Structure Theory-Taking School B in Quzhou City as an Example

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Abstract: Recent surveys have indicated a declining identification with music learning among middle school students, resulting in reduced effectiveness in the infiltration of aesthetic education. In the context of strengthening aesthetic education integration in Chinese schools and addressing practical challenges in secondary music education, this study adopts Hovland's three-dimensional attitude structure theory-comprising affective experience, behavioral tendency, and cognitive level-and incorporates the attitude hierarchy effects of the standard learning hierarchy, low-involvement hierarchy, and experiential hierarchy as its theoretical framework. The objective is to explore the current hierarchical state of middle school students within the process of music aesthetic education infiltration and, based on the findings, to provide recommendations for enhancing its effectiveness. Drawing upon the three predefined attitude hierarchies, the study designed three mediating models to compare their mediating effects and analyze the interrelationships among factors within each model. A total of 149 middle school students from School B in Quzhou City were surveyed using questionnaires. Structural Equation Modeling (SEM) and Bootstrap methods were applied to examine the direct, indirect, and total effects across models and pathways. The results reveal that, within the standard learning hierarchy model (cognitive level → affective experience → behavioral tendency), affective experience fully mediates the relationship between cognitive level and behavioral tendency, showing the highest mediation effect among the three hierarchies. In the low-involvement hierarchy model (cognitive level → behavioral tendency → affective experience), behavioral tendency partially mediates the relationship between cognitive level and affective experience. However, the mediation effect in the experiential hierarchy model (affective experience → behavioral tendency → cognitive level) was not statistically significant. Based on these findings, it is recommended that middle school music aesthetic education focus on the scientific design of cognitive teaching content, the active cultivation of affective experiences, and the expansion of participatory practical activities. This comprehensive approach can better meet the needs of students situated within both the standard learning and low-involvement hierarchies, thereby improving the overall efficacy of aesthetic education infiltration in music learning.

Keywords: aesthetic education infiltration; music education; music learning attitudes; middle school music aesthetic education

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1. Introduction

1.1. *The Concept and Evolution of Aesthetic Education (Meiyu)*

Aesthetic education (meiyu) refers to the cultivation of an individual's ability to perceive, create, and evaluate beauty through encounters with artistic and aesthetic forms. Its purpose extends beyond the transmission of artistic techniques to the refinement of emotion, thought, and value through lived aesthetic experience [1]. As early as the late nineteenth century, the German aesthetician Friedrich von Schiller argued that aesthetic education reconciles sensuousness and reason. In the early twentieth century, Chinese intellectuals introduced this discourse and integrated it with indigenous traditions of moral-aesthetic cultivation, forming a modern Chinese theory of meiyu imbued with Enlightenment overtones.

As the concept expanded, meiyu moved beyond visual arts, literature, and dance to embrace music, whose multidimensional qualities make it an especially powerful medium. At the individual level, melody, harmony, and rhythm coordinate listening and memory, evoke emotion, deepen musical understanding, and enhance sensitivity to beauty while simultaneously nurturing intelligence and creativity [2]. At the collective level, music embodies cultural identity and transmits communal traditions. By connecting these dimensions, music becomes an educational force that enables listeners to appreciate, understand, and respect diverse cultures and ideas.

In 2023, China's Ministry of Education issued the Notice on the Full Implementation of School-Wide Aesthetic Infusion, which stipulated that schools should "immerse students in aesthetic experience so as to comprehensively enhance their cultural understanding, aesthetic perception, artistic expression, and creative practice; enrich their spiritual and cultural life; make their bodies and minds more joyful; their vitality more visible; and their personalities more wholesome." This document marked a new stage in the development of meiyu in China [3].

Within secondary education, aesthetic education is viewed as a crucial means of cultivating innovation and practical ability. Music, as one of its key components, achieves "infusion" not only through appreciation classes but also through participatory forms such as choir and ensemble performance, enabling students to receive moral and emotional nourishment through active engagement. However, how to employ music effectively for aesthetic infusion in middle schools remains an urgent and practical question. Surveys show that a weak sense of identification with musical meiyu is widespread among secondary students.

A survey conducted among twelve teachers and 2,640 students across six middle schools in Chaohu, Anhui, found that only 54.91% of respondents believed the curriculum provided adequate background on the works studied, while approval for small-instrument instruction averaged just 31.41% [3]. Another study of 282 students reported that 68% deemed aesthetic-education classes "irrelevant," and 17% viewed them as "completely ineffective." [4]. A separate investigation found that 42% of respondents considered it "unlikely" they would study music independently [5]. In Huainan, 80% of 200 surveyed students said they "attached no importance" to music lessons; 65% found staff reading "very difficult," and 85% could not handle basic rhythmic notation [6]. These findings highlight a key premise: before music can exert its intended "infusion" effect in middle-school aesthetic education, student identification with the subject must first be significantly strengthened.

1.2. *The Adolescent Context and Educational Significance of Music Meiyu*

Middle-school students are undergoing the physiological and psychological transitions of puberty: their bodies change, emotions fluctuate, and they are driven to explore identity and self-definition. For them, beauty is no longer an abstract ideal but a mirror through which they seek self-recognition and validation. Music-based aesthetic

education directly addresses this need, guiding the formation of self-concept, values, taste, and social belonging.

The ultimate goal is not the accumulation of musical achievements but the cultivation of a life that is emotionally balanced, socially integrated, and psychologically resilient. Research shows that music education helps adolescents distinguish between the "beautiful" and the "ugly," thereby shaping the outline of a meaningful life [7]. Other studies highlight music's role in alleviating emotional pressure, cultivating moral sensibility, promoting cooperation through collective music-making, and fostering both cultural identity and openness to diversity [8-10].

Consequently, although music-based aesthetic infusion is indispensable in secondary schooling, its effectiveness depends on schools and teachers addressing the issue of student identification. Learners must recognize that the long-term rewards of music education are integral to their personal and social growth.

1.3. Theoretical Foundation: The ABC Model and Hierarchies of Attitude Formation

In the mid-twentieth century, the American social psychologist Carl Hovland proposed the A-B-C tri-dimensional model, a framework widely applied in education, management, and marketing to analyze attitudinal identification [11]. The theory treats an attitude not as a single continuum but as a stable and compound mental set composed of three interrelated components:

- Affect (A): the emotions and feelings evoked by the object;
- Behavioral tendency (B): the predisposition to act toward it in a particular way;
- Cognition (C): the beliefs, knowledge, and thoughts held about it [12].

The affective component refers to the positive or negative emotional experiences and value judgments that arise when an individual encounters a particular event or object. In music learning, students' liking for music classes, pleasure from musical activities, and emotional resonance with musical works all belong to this domain. Affect is the most intuitive element of the ABC model, influencing psychological states and shaping behavioral and cognitive responses.

The behavioral component represents the actions an individual may take—such as participation, imitation, or persistence. Reinforcing this dimension consolidates both affective and cognitive factors, creating a positive feedback loop in attitude formation. In music learning, active participation in classes, voluntary joining of choirs or bands, and independent musical creation all reflect behavioral tendencies [13].

The cognitive component encompasses beliefs and knowledge, serving as the rational foundation for motivation and intrinsic engagement. It guides students to think critically and form accurate understandings of music learning, beyond superficial notions such as "music is merely entertainment."

The interconnection of these components has led researchers to propose the concept of the Hierarchy of Effects, explaining the relative influence among cognition, affect, and behavior [14]. The three classic hierarchies are as follows:

Standard Learning Hierarchy (Cognition → Affect → Behavior):

Individuals gather knowledge, form feelings, and then act. This high-involvement sequence assumes deliberate decision-making. For instance, a student learns that instrumental practice enhances discipline (cognition), develops appreciation for it (affect), and subsequently joins the band (behavior).

Low-Involvement Hierarchy (Cognition → Behavior → Affect):

Individuals act based on minimal knowledge and form emotional attachment later through repetition. For example, a student attends choir simply due to the timetable (cognition → behavior), gradually enjoys it (affect), and only later reflects on its purpose.

Experiential Hierarchy (Affect → Behavior → Cognition):

Decisions arise from immediate emotion, with cognition constructed afterward to justify

the act. For example, a student is inspired by a pop performance (affect), learns an instrument (behavior), and later studies music theory (cognition) [15].

In school-based aesthetic education, recent studies consistently argue that the effectiveness of music meiyu depends on addressing cognition, affect, and behavior simultaneously. Research stresses the importance of cognitive scaffolding-historical context, stylistic cues, and compositional technique-so that students can decode musical meaning before emotional engagement [16-18]. Studies highlight affective experience as the driving force of music meiyu, advocating non-coercive, immersive learning environments [19-21]. Meanwhile, other works emphasize the behavioral component, suggesting that activities such as clapping, dancing, and small-instrument performance consolidate learning through physical participation [22-24].

Taken together, the mission of music meiyu is to use music as a medium to produce (1) cognitive reframing, (2) emotional enrichment, and (3) sustainable participatory behavior. Hovland's ABC model provides a systematic framework to interpret these interactions and test hierarchical pathways of attitude formation.

Accordingly, this study adopts the ABC tri-dimensional framework to examine how cognition, affect, and behavior interact in the context of music-based aesthetic infusion among lower-secondary students. By mapping the three classical attitude-formation routes-Standard Learning ($C \rightarrow A \rightarrow B$), Low-Involvement ($C \rightarrow B \rightarrow A$), and Experiential ($A \rightarrow B \rightarrow C$)-onto survey, interview, and behavioral-trace data, the research aims to identify which hierarchy currently dominates middle-school music meiyu in China. The resulting analysis will inform pathway-specific strategies to enhance the effectiveness of aesthetic education infusion, extend empirical applications of the ABC model, and offer educators a practical tool for diagnosing and improving student attitudes toward music learning.

2. Methods

2.1. Research Models and Procedure

Anchored in the ABC-attitude framework, this study constructed three parallel mediation models corresponding to the classical "hierarchies of effect" (Figure 1).

Model 1 - Standard-Learning Hierarchy ($C \rightarrow A \rightarrow B$)

This model depicts attitude formation as a deliberate problem-solving process: students first process information about music meiyu (Cognition), the resulting beliefs generate liking or disliking (Affect), and this emotional valence ultimately drives participation (Behavior).

Model 2 - Low-Involvement Hierarchy ($C \rightarrow B \rightarrow A$)

This model describes the route followed when involvement is weak. Limited knowledge (Cognition) is sufficient to trigger compliant or routine action (Behavior), and the repeated action then produces an evaluative response (Affect).

Model 3 - Experiential Hierarchy ($A \rightarrow B \rightarrow C$)

This model represents hedonic, impulse-driven learning. An immediate emotional response to music (Affect) prompts spontaneous engagement (Behavior), and only afterward do students develop coherent beliefs about the value of music meiyu (Cognition).

The three models were tested simultaneously to identify which sequence predominates in shaping the music-aesthetic attitudes of Chinese lower-secondary students and to determine the most effective intervention points for improving music aesthetic education. Figure 1 shows the structure of the three proposed research models.

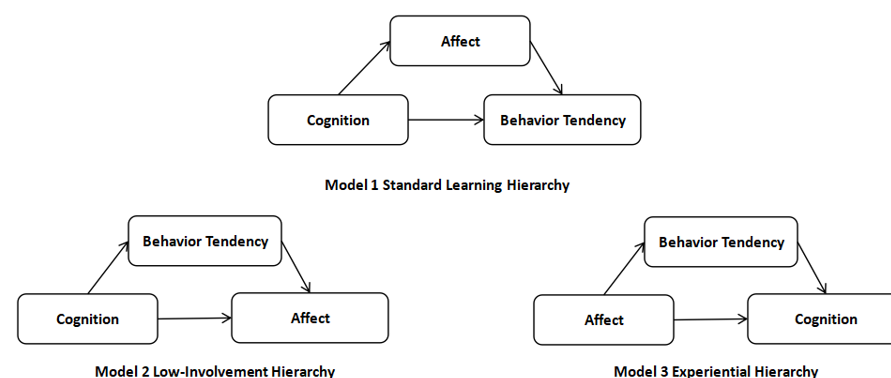


Figure 1. Research Models.

To ensure the reliability and validity of the analysis, the research followed five major analytical steps:

(1) Descriptive Statistics

Frequencies and proportions were calculated for variables such as gender, grade level, parental support, and attitudes toward music lessons. This helped to profile the sample and assess its representativeness.

(2) Structural Validity of the Questionnaire

A confirmatory factor analysis (CFA) of the three hypothesized dimensions—Cognition, Affect, and Behavior—was conducted. Goodness-of-fit indices (χ^2/df , GFI, NFI, CFI, RMSEA) were examined to confirm that the measurement model adequately fit the observed data before proceeding to the structural model.

(3) Reliability and Validity Checks

Composite reliability (CR) was calculated to test the internal consistency of each dimension, while average variance extracted (AVE) was used to assess convergent validity. Discriminant validity was verified using the Fornell-Larcker criterion by comparing the square root of AVE with inter-factor correlations, ensuring that multicollinearity was absent.

(4) Mediation Tests for the Three Hierarchies

For each proposed path ($C \rightarrow A \rightarrow B$; $C \rightarrow B \rightarrow A$; $A \rightarrow B \rightarrow C$), bias-corrected bootstrap confidence intervals (5,000 resamples) were generated to test whether the indirect effects were statistically significant.

(5) Model Comparison

Effect magnitudes (Estimates), standard errors (SE), and 95% confidence intervals (LLCI-ULCI) across the three models were compared to determine which attitudinal hierarchy best explained music-aesthetic learning among the participants.

Participants

From 23 July to 4 August 2025, a total of 149 students from Quzhou City Middle School B participated in the survey. The questionnaire was distributed and collected online through the school's WeChat group with assistance from a colleague.

The demographic characteristics of the participants are summarized in Table 1, which outlines gender, grade level, parental support for music learning, and perceptions of music lesson quality.

Table 1. Descriptive Statistics of Demographic Variables.

Component		Frequency (persons)	Percentage(%)
Your gender	Male	54	36.2
	Female	95	63.8
Your current grade	1st year of middle school	77	51.7

	2st year of middle school	41	27.5
	3st year of middle school	31	20.8
Do your parents usually support and encourage you to learn music?	Yes	78	52.3
	Neutral	57	38.3
	No	14	9.4
How do you feel about the music lessons at your school?	Learning content rather dull & teaching methods monotonous	11	7.4
	Neutra		
	no particular feeling	65	43.6
	Learning content rich & teaching methods varied	73	49
Total		149	100

3. Research Instrument

This study employed a questionnaire on junior-high students' attitudes toward music learning [11]. The instrument was developed by drawing on previous learning-attitude scales, then refined through student interviews and consultation with secondary-school music teachers [25]. The final questionnaire contains 14 five-point Likert items: six measuring Cognitive level, four measuring Affective experience, and four assessing Behavioral tendency. All items are positively keyed: 1 = "very uncharacteristic of me," 2 = "uncharacteristic," 3 = "neutral," 4 = "characteristic," and 5 = "very characteristic."

Cognitive items include:

"Learning music is very helpful for my daily life."

"Studying music enables me to understand musical culture better."

"Being good at music can help me make more friends."

Affective items include:

"Listening to and appreciating music relaxes me."

"I feel excited about learning music."

"I am optimistic about the effort I put into mastering basic musical knowledge."

Behavioral items include:

"I take the initiative to learn music."

"I listen attentively during music class."

The measurement model of the scale was examined using confirmatory factor analysis (CFA). The fit indices are presented in Table 2, and the standardized factor structure is illustrated in Figure 2. The CFA results indicate that the measurement model fits the data satisfactorily: $\chi^2/df = 2.290$ (< 5), GFI = 0.852 (> 0.80), NFI = 0.918 (> 0.90), CFI = 0.952 (> 0.90), RMSEA = 0.093 (< 0.10). All standardized factor loadings exceeded 0.60, demonstrating strong relationships between items and their respective factors. Composite reliability (CR) for each latent factor exceeded 0.60, confirming good internal consistency. Average variance extracted (AVE) for all factors surpassed 0.50, indicating adequate convergent validity (see Table 3 and Figure 2).

Table 2. Fit Indices of the Scale's CFA Measurement Model.

Index	X2	df	X2/df	GFI	NFI	CFI	RMSEA
Coefficient	169.459	74	2.290	0.852	0.918	0.952	0.093
Ideal Value			< 3	> 0.9	> 0.9	> 0.9	< 0.10

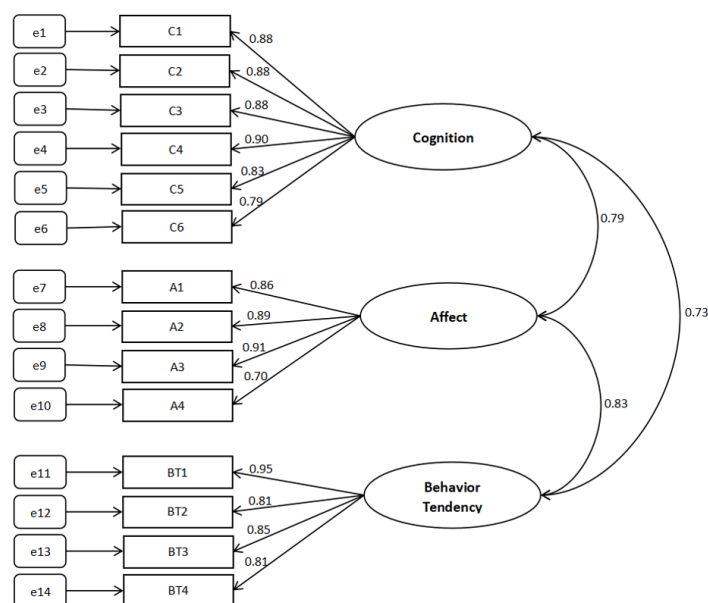


Figure 2. CFA Model.

Table 3. Scale Reliability and Validity Results.

Factor	Item	Estimate	CR	AVE
Cognitive Level	Cognitive Level1	0.88	0.945	0.742
	Cognitive Level2	0.878		
	Cognitive Level3	0.885		
	Cognitive Level4	0.902		
	Cognitive Level5	0.828		
	Cognitive Level6	0.789		
Emotional Experience	Emotional Experience1	0.863	0.909	0.716
	Emotional Experience2	0.891		
	Emotional Experience3	0.911		
	Emotional Experience4	0.703		
Behavioral Tendency	Behavioral Tendency1	0.946	0.916	0.733
	Behavioral Tendency2	0.808		
	Behavioral Tendency3	0.848		
	Behavioral Tendency4	0.815		

Discriminant validity was further verified in Table 4, where the square root of each factor's AVE (shown on the diagonal in parentheses) was larger than the correlations between that factor and any other factor, confirming that the three dimensions are empirically distinct.

Table 4. Discriminant Validity.

Factor	Cognitive Level	Emotional Experience	Behavioral Tendency
Cognitive Level	0.861		
Emotional Experience	0.795***	0.846	
Behavioral Tendency	0.729***	0.832***	0.856

***P<0.001.

4. Results

4.1. Mediation Analysis of the Standard Learning Hierarchy (Cognition → Affect → Behavior)

In the Standard Learning Hierarchy model, affective experience is hypothesized to mediate the effect of cognitive level on behavioral tendency. The measurement model demonstrated satisfactory fit, as presented in Table 5 and illustrated in Figure 3.

$$\chi^2/df = 2.290 (< 5)$$

$$GFI = 0.852 (> 0.80)$$

$$NFI = 0.918 (> 0.90)$$

$$CFI = 0.952 (> 0.90)$$

$$RMSEA = 0.093 (< 0.10)$$

Table 5. Fit Indices for the Cognition-Affect-Behavior Path.

Index	X2	DF	X2/DF	GFI	NFI	CFI	RMSEA
Coefficient	169.459	74	2.290	0.852	0.918	0.952	0.093
Ideal Value			<3	>0.9	>0.9	>0.9	<0.10

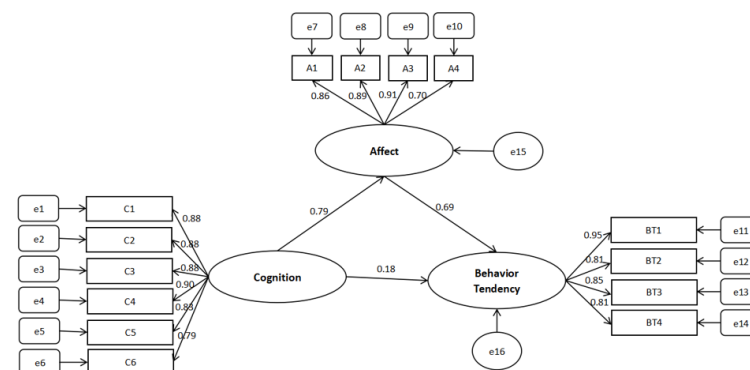
**Figure 3.** Mediation Model of Cognition → Affective Experience → Behavioral Tendency.

Table 6 shows the mediation-effect analysis for the Cognition → Affect → Behavior path. Bootstrapping was conducted with 5,000 resamples. The total effect of cognitive level on behavioral tendency was 0.729 (95% CI [0.555, 0.854], significant), the direct effect was 0.184 (95% CI [-0.146, 0.496], not significant), and the indirect (mediated) effect was 0.545 (95% CI [0.339, 0.869], significant). These results indicate that affective experience fully mediates the relationship between cognitive level and behavioral tendency.

Table 6. Mediation-Effect Analysis for the Path Cognition → Affective Experience → Behavioral Tendency.

Model	Effect	Estimates	SE	LLCI	ULCI
	Total effect	0.729	0.075	0.555	0.854

Cognitive Level → Emotional Experience → Behavioral Tendency (Standard Learning Hierarchy)	Direct effect	0.184	0.162	-0.146	0.496
	Mediated effect	0.545	0.127	0.339	0.869

4.2. Mediation Analysis of the Low-Involvement Hierarchy (Cognition → Behavior → Affect)

For the Low-Involvement Hierarchy, behavioral tendency is hypothesized to mediate the influence of cognitive level on affective experience. The measurement model showed satisfactory fit (see Table 7 and Figure 4): $\chi^2/df = 2.290 (< 5)$, GFI > 0.80, NFI & CFI > 0.90, RMSEA = 0.093 (< 0.10).

Table 8 presents the mediation-effect analysis for this path. Bootstrapping with 5,000 resamples yielded a total effect of 0.725 (95% CI [0.641, 0.904], significant), a direct effect of 0.403 (95% CI [0.144, 0.679], significant), and an indirect effect of 0.392 (95% CI [0.228, 0.612], significant). These findings indicate that behavioral tendency partially mediates the relationship between cognitive level and affective experience.

Table 7. Fit Indices for the Cognition-Behavior-Affect Path.

Index	X2	DF	X2/DF	GFI	NFI	CFI	RMSEA
Coefficient	169.459	74	2.290	0.852	0.918	0.952	0.093
Ideal Value			<3	>0.9	>0.9	>0.9	<0.10

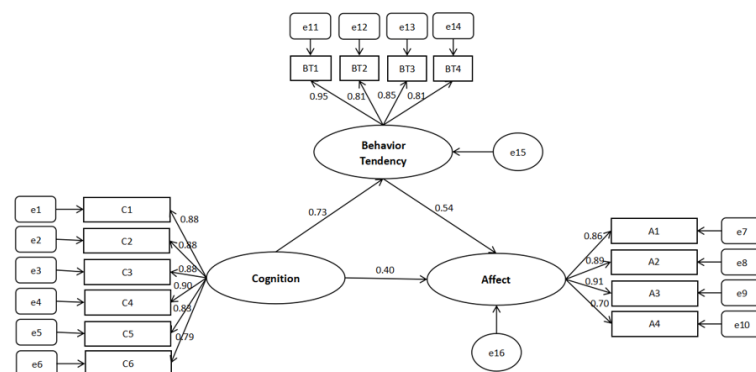


Figure 4. Mediation Model of Cognition → Behavioral Tendency → Affective Experience.

Table 8. Mediation-Effect Analysis for the Path Cognition → Behavioral Tendency → Affective Experience.

Model	Effect	Estimates	SE	LLCI	ULCI
Cognitive Level → Emotional Experience → Behavioral Tendency (Low-Involvement Hierarchy)	Total effect	0.725	0.067	0.641	0.904
	Direct effect	0.403	0.134	0.144	0.679
	Mediated effect	0.392	0.095	0.228	0.612

4.3. Testing the Experiential Hierarchy Model (Affective Experience → Behavioral Tendency → Cognition)

In the Experiential Hierarchy model, behavioral tendency is hypothesized to mediate the effect of affective experience on cognitive level. The measurement model fit was satisfactory, as shown in Table 9 and Figure 5: $\chi^2/df = 2.290 (< 5)$, GFI > 0.80, NFI & CFI > 0.90, RMSEA = 0.093 (< 0.10).

Table 10 reports the mediation-effect analysis using 5,000 bootstrap resamples. The total effect was 0.759 (95% CI [0.641, 0.904], significant), the direct effect was 0.612 (95% CI [0.228, 0.979], significant), and the indirect effect was 0.183 (95% CI [-0.155, 0.519], not significant). Therefore, while the overall and direct effects are significant, behavioral tendency does not significantly mediate the relationship between affective experience and cognitive level in the Experiential Hierarchy.

Table 9. Fit Indices for the Affect-Behavior-Cognition Path.

Index	X2	DF	X2/DF	GFI	NFI	CFI	RMSEA
Coefficient	169.459	74	2.290	0.852	0.918	0.952	0.093
Ideal Value			<3	>0.9	>0.9	>0.9	<0.10

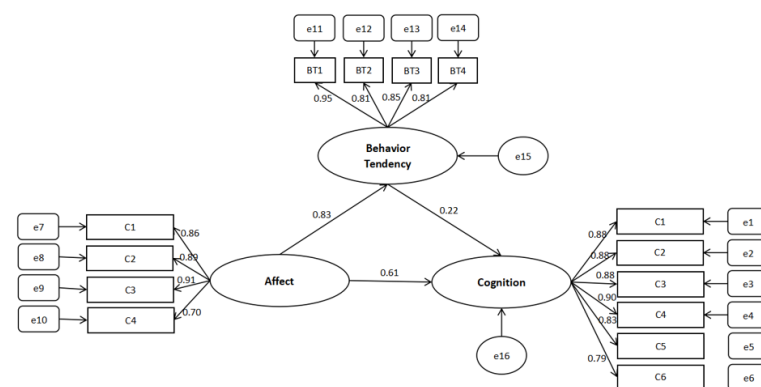


Figure 5. Mediation Model of Affective Experience → Behavioral Tendency → Cognitive Level.

Table 10. Mediation-Effect Analysis for the Path Affective Experience → Behavioral Tendency → Cognitive Level.

Model	Effect	Estimates	SE	LLCI	ULCI
Cognitive Level → Emotional Experience → Behavioral Tendency (Experience Hierarchy)	Total effect	0.759	0.067	0.641	0.904
	Direct effect	0.612	0.189	0.228	0.979
	Mediated effect	0.183	0.167	-0.155	0.519

4.4. Comparison among the Standard Learning, Low-Involvement, and Experiential Hierarchies

Table 11 compares the mediation-effect sizes across the three models. The Standard Learning Hierarchy (Cognition → Affective Experience → Behavioral Tendency) emerged as the best-fitting pathway, with an indirect effect of 0.545, indicating full mediation by affect.

The Low-Involvement Hierarchy (Cognition → Behavioral Tendency → Affective Experience) produced a significant indirect effect of 0.392, suggesting partial mediation. By contrast, the Experiential Hierarchy (Affective Experience → Behavioral Tendency → Cognition) yielded an indirect effect of 0.183, whose 95% CI included zero, indicating that no significant mediation was established.

Table 11. Comparison of Different Mediation-Effect Models.

Mediating Model	Mediating Effect Value	SE	LLCI	ULCI	Mediating Effect Status
Cognitive Level → Emotional Experience → Behavioral Tendency (Standard Learning Hierarchy)	0.545	0.127	0.339	0.869	Full Mediation
Cognitive Level → Emotional Experience → Behavioral Tendency (Experience Hierarchy)	0.392	0.095	0.228	0.612	Partial Mediation
Cognitive Level → Emotional Experience → Behavioral Tendency (Experience Hierarchy)	0.183	0.167	-0.155	0.519	Not Established

4. Conclusion

4.1. Standard Learning Hierarchy (Cognition → Affective Experience → Behavioural Tendency)

Anchored in the ABC tripartite model of attitude-cognition, affect, and behavior-this study examined the hierarchical mechanisms through which music-aesthetic education operates in lower-secondary schools. An empirical survey of 149 students at Quzhou City B Middle School was conducted, and three competing mediation pathways-Standard Learning, Low-Involvement, and Experiential Hierarchies-were compared in terms of effect size, significance, and explanatory power.

For the Standard Learning Hierarchy, results indicate that cognitive understanding of music influences behavioral tendency exclusively through the full mediation of affective experience. In other words, students' acquisition and appreciation of musical knowledge translate into concrete musical behavior only after their emotions have been sufficiently engaged. Affective experience thus functions as a critical bridge between knowledge and action, with the intensity of emotional arousal directly determining the strength and persistence of subsequent music-learning behavior. These findings suggest that enhancing pupils' emotional encounters with music is essential for promoting active behavioral engagement and cultivating sustained aesthetic attitudes.

4.2. Low-Involvement Hierarchy (Cognition → Behavioural Tendency → Affective Experience)

In the Low-Involvement Hierarchy, behavioral tendency emerged as a partial mediator between cognitive appraisal and emotional response. This indicates that students' initial understanding of music can influence their emotions both directly and indirectly via concrete participation in musical activities. Practically, schools and educators can facilitate emotional engagement through hands-on, participatory music experiences. Repeated, low-pressure involvement allows students to develop interest and emotional attachment over time, reinforcing both identification with music and a sense of belonging to music-aesthetic education.

The hallmark of this pathway is that initial affective engagement is not required; it can be cultivated progressively through structured, participatory activities. This suggests that behavior-oriented strategies-such as lowering participation thresholds, providing experiential activities, and giving immediate feedback-can gradually transform passive engagement into active emotional investment, thereby strengthening cognitive interest in music.

4.3. Experiential Hierarchy (Affective Experience → Behavioural Tendency → Cognitive Level)

For the Experiential Hierarchy, where affective experience is hypothesized to influence cognition through behavioral tendency, the analysis showed that the direct effect of affect on cognition is significant, whereas the indirect mediation via behavior is not. This indicates that although an initial emotional spark may encourage some students

to seek musical knowledge independently, the mediating role of behavior is weak, providing only limited empirical support for this pathway. Consequently, while theoretically plausible, the Experiential Hierarchy cannot be regarded as the dominant mechanism in music-aesthetic education among the participating students.

4.4. Comparative Insights and Practical Implications

Comparison of the three pathways indicates that both the Standard Learning and Low-Involvement Hierarchies are the principal patterns of music-aesthetic education in middle schools. The total effect size of the Standard Learning Hierarchy is 0.729, with a mediating effect of 0.545, suggesting that the sequential path "Cognition → Affect → Behavior" has the greatest optimization potential. The Low-Involvement Hierarchy follows closely, with a total effect size of 0.725 and a mediating effect of 0.392. Although the Experiential Hierarchy exhibited the highest total effect (0.759), its mediating effect was not established, failing to support its hypothesized mechanism.

Demographic survey results further support the efficacy of the Standard Learning Hierarchy: 52.3% of students reported receiving parental support for music learning, and 49.0% perceived school music courses as diverse and enriching. Conversely, 43.6% of students were neutral toward school music courses, and 57% of parents expressed neutral support, reflecting practical challenges for the Low-Involvement Hierarchy. Overall, two typical patterns were identified among students: those following the Standard Learning Hierarchy begin with rational cognition and promote behavioral participation through affective experience, while those in the Low-Involvement Hierarchy start with relatively passive participation but achieve emotional engagement through accumulated experience.

From a pedagogical perspective, schools should emphasize both systematic music knowledge and positive emotional guidance. For students in the Standard Learning Hierarchy, contextualized teaching can stimulate emotional resonance and translate cognition into behavior. For students in the Low-Involvement Hierarchy, progressive, behavior-oriented strategies-including lowering participation thresholds, increasing engagement opportunities, and providing immediate feedback-can gradually transform passive participation into active emotional and cognitive investment.

4.5. Limitations and Future Directions

Several limitations of the study warrant consideration. First, the sample was drawn from a single school and region, limiting generalizability. Future studies should expand to multiple schools across diverse regions to enhance representativeness. Second, demographic differences were not analyzed in relation to hierarchical attitudes. Subsequent research could examine how demographic factors intersect with the Standard Learning and Low-Involvement Hierarchies to refine educational strategies. Finally, the cross-sectional design may be susceptible to social desirability bias, as participants could overestimate their attitudes. Future studies should consider multi-source data-such as teacher evaluations, parental feedback, classroom observations, objective participation records-or adopt longitudinal or experimental designs to improve reliability.

In summary, this study applied the ABC three-dimensional structure theory to the process of music-aesthetic education in middle schools, providing empirical evidence for how cognition, affect, and behavior interact. The findings clarify the hierarchical mechanisms of attitude formation in music learning and offer practical guidance for optimizing instructional strategies across different student profiles.

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