The Impact of Emotional Intelligence on Aesthetic Ability in University Music Majors: The Mediating Role of Flow Experience

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Abstract

This study aimed to (1) examine the relationship between emotional intelligence and aesthetic ability among university music majors; (2) investigate the impact of emotional intelligence on flow experience; (3) analyze the relationship between flow experience and aesthetic ability; and (4) determine the mediating role of flow experience. A quantitative research design was employed with 1,112 music major students from twelve higher education institutions in Fujian Province, China, selected through stratified sampling. Data were collected using validated scales measuring emotional intelligence (Cronbach's α = 0.93), flow experience (Cronbach's α = 0.91), and aesthetic ability (Cronbach's α = 0.94). Data analysis included Pearson correlation analysis, linear regression analysis, and mediation analysis using Baron and Kenny's (1986) approach with SPSS 29.0. The research results were found as follows:

1. Emotional intelligence has a significant positive impact on aesthetic ability (β = 0.662, $p < 0.001$), explaining 43.8% of the variance in aesthetic ability among university music majors.

2. Flow experience serves as a partial mediator in the relationship between emotional intelligence and aesthetic ability, with emotional intelligence significantly influencing flow experience (β = 0.585, $p < 0.001$) and flow experience significantly affecting aesthetic ability (β = 0.589, $p < 0.001$).

3. The combined mediation model explains 50% of the variance in aesthetic ability, with a significant indirect effect (β = 0.345, 95% CI [0.298, 0.391]), indicating that students with higher

emotional intelligence are more likely to experience flow states during musical activities, which enhances their aesthetic capabilities.

Keywords: Emotional Intelligence; Aesthetic Ability; Flow Experience; University Music Majors; Mediation Analysis

Introduction

In recent years, aesthetic ability cultivation has become essential in modern education. The "Opinions on Comprehensively Strengthening and Improving Aesthetic Education in Schools in the New Era" emphasizes strengthening students' aesthetic literacy at the higher education stage (General Office of the CPC Central Committee & General Office of the State Council, 2020). The "Comprehensive Implementation of the School Aesthetic Education Immersion Initiative" requires universities to establish aesthetic education curriculum systems and integrate art education into professional teaching (Ministry of Education of the People's Republic of China, 2023).

Despite improvements in aesthetic education courses and facilities, Chinese universities still face limitations such as lack of interdisciplinary integration and exam-oriented approaches that hinder aesthetic ability cultivation (Du, 2022). For university music majors, aesthetic ability is crucial for musical understanding and artistic expression. However, modern music education overemphasizes technical training while neglecting musical literacy and aesthetic development, resulting in students who master technical skills but struggle to understand music's deeper meaning (NetEase, 2024). Cultivating aesthetic ability in music education enhances students' appreciation, understanding, creativity, and innovative thinking (Jin, 2024).

Emotional intelligence, a construct central to this study, helps music majors perceive emotional expressions in artistic works more deeply, enhancing aesthetic experience and team cohesion through emotional regulation (Green et al., 2021). Flow theory suggests that flow experience—another key variable in this research—leads to optimal learning outcomes (Egbert, 2004). When music students enter flow states during performance, composition, or appreciation, they enhance technical expressiveness and deepen aesthetic understanding. Flow experience can serve as a mediating mechanism through which emotional intelligence influences aesthetic ability.

However, aesthetic ability cultivation among university music majors still primarily relies on technical training, with insufficient attention to emotional intelligence's role in aesthetic experience. This study employs mediation analysis to explore emotional intelligence's impact on university music majors' aesthetic ability, introducing flow experience as a mediating variable to reveal how emotional intelligence enhances aesthetic ability through flow experience, thereby providing theoretical foundation and practical guidance for music education reform.

Research Objectives

The primary objectives of this study are:

1. To examine the direct relationship between emotional intelligence and aesthetic ability among university music majors.

2. To investigate the impact of emotional intelligence on flow experience in university music majors.

3. To analyze the relationship between flow experience and aesthetic ability in university music majors.

4. To determine the mediating role of flow experience in the relationship between emotional intelligence and aesthetic ability.

Research Hypotheses

Based on the theoretical foundation and literature review, this study proposes the following hypotheses:

H1: Emotional intelligence has a significant impact on the aesthetic ability of university music majors.

H2: Emotional intelligence has a significant impact on the flow experience of university music majors.

H3: Flow experience has a significant impact on the aesthetic ability of university music majors.

H4: Flow experience mediates the relationship between emotional intelligence and aesthetic ability in university music majors

Literature Review

1. Emotional Intelligence and Aesthetic Ability

Emotional intelligence, defined by Salovey and Mayer (1990) as the ability to recognize, understand, manage, and express emotions, was further developed by Goleman (1995) into five dimensions: self–awareness, emotion regulation, intrinsic motivation, empathy, and social skills. These elements are inherently connected to aesthetic activities, encompassing interpersonal emotions, life emotions, aesthetic emotions, and emotional competence (Lu et al., 2016).

Yu (2022) found aesthetic ability positively correlates with positive emotions and negatively with negative emotions. In music, emotional perception directly influences recognition of musical emotional tone (Juslin & Laukka, 2004). Contemporary research has developed a dual–system model of "cognition–emotion" (Leder et al., 2004), where emotional intelligence influences aesthetic response through "emotional resonance," enabling accurate capture of artistic works' emotional representations (Juslin, 2013).

2. Emotional Intelligence and Flow Experience

Flow experience is a psychological state of deep immersion characterized by concentration, enjoyment, and efficiency (Csikszentmihalyi, 1990). Saklofske et al. (2007) noted that emotional intelligence reduces anxiety, increases self–confidence, and enhances adaptability, facilitating focus on present activities. Brackett et al. (2011) found emotional intelligence enables individuals to remain calm in stressful environments, enhancing cognitive focus.

Wrigley and Emmerson (2013) confirmed the flow model's validity in live music performances, finding orchestral members showed greater improvement in emotional empathy accuracy after experiencing flow compared to solo performers. Moral–Bofill et al. (2020) found flow state relates to performance anxiety, emotional intelligence, musical style, and performance context.

3. Flow Experience and Aesthetic Ability

Aesthetic ability refers to one's capacity to perceive, appreciate, evaluate, and create beauty, reflecting aesthetic cultivation and literacy (Yang, 2022). Flow experience requires high focus on present tasks, enabling deeper experience and understanding of artistic works (Csikszentmihalyi, 1990). Biasutti (2011) found that stronger flow experience correlates with higher quality and efficiency in music and literary creation.

Miao and Lu (2022) noted that subjective involvement in "experiencing beauty" exceeds "appreciating beauty," with higher sensory openness in immersive experiences than traditional art. Pelowski et al. (2017) found that flow states during art appreciation deepen understanding of works' emotional aspects and enhance aesthetic enjoyment.

4. Emotional Intelligence, Flow Experience, and Aesthetic Ability

Shi et al. (2021) found that experiences can generate direct physical arousal and aesthetic pleasure, integrating with intrinsic emotions and triggering complex emotional perceptions. Zhang and Liu (2024) proposed "cultural communal sense," noting that consumers engage in immersive experiences pursuing sensory "free pleasure" and emotional "resonance and empathy," constructing cultural experiences through judgment, imagination, and identification.

Research Conceptual Framework

After an in-depth review and analysis of the literature, this study hypothesizes that emotional intelligence has a significant positive predictive effect on the aesthetic ability of university music majors. Emotional intelligence not only directly and positively influences the aesthetic ability of university music majors but may also have an indirect positive impact through the mediating effect of flow experience. Based on this theoretical foundation, this study constructs a research framework diagram.

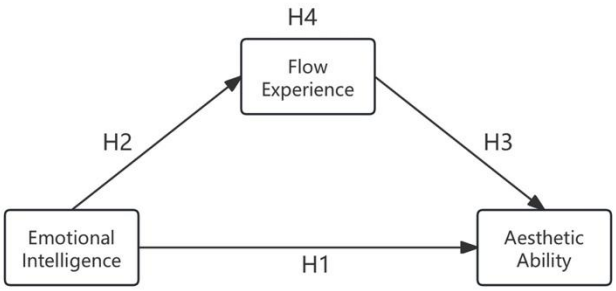

Figure 1 Research Framework Diagram

The conceptual framework illustrates the relationships among the three key variables: emotional intelligence as the independent variable, aesthetic ability as the dependent variable, and flow experience as the mediating variable. The framework suggests that emotional intelligence directly influences aesthetic ability while also indirectly affecting it through flow experience.

Research Methodology

1. Research Design

This study employed a quantitative cross-sectional survey methodology to examine relationships between emotional intelligence, flow experience, and aesthetic ability among university music majors.

2. Research Participants

Following Wu's (2010) recommendation for regional studies, 1,200 music majors were surveyed from twelve institutions in Fujian Province, China (six vocational colleges and six undergraduate institutions) using random sampling. After excluding 88 invalid questionnaires, 1,112 valid responses were collected (response rate: 92.67%).

3. Research Instruments

Three validated scales were adapted:

1) Emotional Intelligence Scale: Adapted from Wang's (2016) questionnaire with 15 dimensions and 57 items. Reliability coefficients ranged from 0.646 to 0.924.

2) Aesthetic Ability Scale: Adapted from Yang's (2022) scale with four dimensions (music, painting, literature, film appreciation) and 20 items. Reliability coefficients ranged from 0.776 to 0.895.

3) Flow Experience Scale: Adapted from Bakker's (2008) scale with three dimensions (concentration, learning enjoyment, intrinsic motivation) and 13 items. Reliability coefficient was 0.88 (Wu, 2023; Bakker, 2008).

4. Data Collection

Paper-based questionnaires were distributed during regular class hours with institutional permission. Participants were informed of the study's purpose and assured anonymity. Completion time was 20–25 minutes.

5. Data Analysis

Statistical analyses used SPSS 29.0, including descriptive statistics, correlation analysis, linear regression, and mediation analysis. Following Baron and Kenny (1986), three-step mediation analysis examined flow experience's mediating role, with Sobel test verification.

Research Results

This section presents the findings organized to systematically address the four research objectives. Statistical analyses were conducted using SPSS 29.0, with significance level set at $\alpha = 0.05$.

1. Regression Analysis of Emotional Intelligence on Aesthetic Ability

Table 1 Linear Regression Analysis of Emotional Intelligence on Aesthetic Ability

Dependent Variable: Aesthetic Ability					
Independent Variable	B	SE	β	t	VIF
Emotional Intelligence	.280	.010	.662***	27.419***	1.000
R^2			.438		
Adj R^2			.438		
F			865.487		

Note 1: $^{*}p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$ Source: Compiled from this study

Results show F = 865.487, p < 0.001, indicating statistical significance. $R^2 = 0.438$ suggests emotional intelligence explains 43.8% of aesthetic ability variance. The standardized regression coefficient $\beta = 0.662$, p < 0.001 confirms emotional intelligence significantly impacts aesthetic ability. VIF = 1.000 indicates no multicollinearity. Hypothesis H1 is supported.

2. Regression Analysis of Emotional Intelligence on Flow Experience

Table 2 Linear Regression Analysis of Emotional Intelligence on Flow Experience

Dependent Variable: Flow Experience					
Independent Variable	B	SE	β	t	VIF
Emotional Intelligence	.191	.088	.585***	24.021***	1.000
R^2			.342		

Dependent Variable: Flow Experience	
Adj R^2	.341
F	577.020

Note 1: $^{*}p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$ Source: Compiled from this study

Results show F = 577.020, p < 0.001, indicating statistical significance. R^2 = 0.342 suggests emotional intelligence explains 34.2% of flow experience variance. The standardized regression coefficient β = 0.585, p < 0.001 confirms emotional intelligence significantly impacts flow experience. Hypothesis H2 is supported.

3. Regression Analysis of Flow Experience on Aesthetic Ability

Table 3 Linear Regression Analysis of Flow Experience on Aesthetic Ability

Dependent Variable: Aesthetic Ability					
Independent Variable	B	SE	β	t	VIF
Flow Experience	.764	.031	.589***	24.305***	1.000
R^2			.347		
Adj R^2			.347		
F			590.745		

Note 1: $^{*}p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$ Source: Compiled from this study

Results show F = 590.745, p < 0.001, indicating statistical significance. R^2 = 0.347 suggests flow experience explains 34.7% of aesthetic ability variance. The standardized regression coefficient β = 0.589, p < 0.001 confirms flow experience significantly impacts aesthetic ability. Hypothesis H3 is supported.

4. Verification of the Mediating Role of Flow Experience

4.1 Mediating Effect of Flow Experience on the Relationship Between Emotional Intelligence and Aesthetic Ability

Using Baron and Kenny's (1986) mediation testing method, three conditions must be met: 1) independent variable significantly predicts dependent variable; 2) independent variable significantly

predicts mediator; 3) when both variables are included, mediator shows significant effect while independent variable's effect weakens.

Table 4 Mediation Effect Analysis of Flow Experience Between Emotional Intelligence and Aesthetic Ability

Item	Model 1 Aesthetic Ability		Model 2 Flow Experience		Model 3 Aesthetic Ability	
	Beta	T	Beta	T	Beta	T
Independent Variable Emotional Intelligence	.662***	27.419***	.585***	24.021***	.482***	18.423***
Mediating Variable Flow Experience	–		–		.307***	11.746***
R2	.438		.074		.500	
Adj R^2	.438		.070		.499	
F	865.487		577.020		555.133	

Note 1: *p＜0.05**p＜0.01***p＜0.001; Source: Compiled from this study

All three mediation conditions are met. In Model 3, F = 555.133, p < 0.001, with emotional intelligence β = 0.482, p < 0.001, and flow experience β = 0.307, p < 0.001. R^2 = 0.500 indicates the combined model explains 50% of aesthetic ability variance, increasing explanatory power by 15.8%. The emotional intelligence coefficient decreased from β = 0.662 to β = 0.482 but remained significant, confirming flow experience partially mediates the relationship between emotional intelligence and aesthetic ability.

Discussion of Research Results

The findings provide significant insights into relationships between emotional intelligence, flow experience, and aesthetic ability among university music majors, with strong empirical support for all four proposed hypotheses.

The strong positive relationship between emotional intelligence and aesthetic ability (β = 0.662, $p < 0.001$) aligns with Leder et al.'s (2004) dual–system model of "cognition–emotion" in aesthetic processing. Students with higher emotional intelligence demonstrated superior abilities to perceive and appreciate emotional dimensions of musical works, directly enhancing aesthetic capabilities.

The significant impact of emotional intelligence on flow experience (β = 0.585, $p < 0.001$) validates theoretical connections proposed by Csikszentmihalyi (1990). Emotionally intelligent students are better equipped to achieve the challenge–skill balance necessary for flow states and maintain the concentration and emotional regulation required for sustained musical engagement.

The positive influence of flow experience on aesthetic ability (β = 0.589, $p < 0.001$) confirms immersive states' importance in artistic development, consistent with research by Biasutti (2011) and Pelowski et al. (2017). Flow states during musical activities enhance sensitivity to aesthetic elements and capacity for artistic interpretation.

The partial mediation effect of flow experience reveals how emotional intelligence indirectly influences aesthetic ability. The increase in explained variance from 43.8% to 50% when including flow experience indicates that flow states serve as crucial pathways connecting emotional competencies to aesthetic outcomes. This suggests emotional intelligence creates psychological conditions necessary for flow experiences, which facilitate deeper aesthetic engagement.

These findings indicate that aesthetic ability cultivation involves integrating emotional, psychological, and cognitive processes rather than merely technical training. The mediating role of flow experience highlights the importance of creating educational environments that promote deep engagement and optimal psychological states.

New Knowledge

This research contributes novel theoretical insights by establishing a mediation model that integrates emotional intelligence theory with flow theory in the context of music education. The study

provides empirical evidence that flow experience serves as a partial mediating mechanism through which emotional intelligence influences aesthetic ability, with the mediation model explaining 50% of the variance in aesthetic ability and revealing that 52.1% of emotional intelligence's total effect operates through flow experience. This finding advances understanding beyond existing research that examined these constructs in isolation, demonstrating that aesthetic development among music majors involves complex interactions among emotional competencies, psychological states, and cognitive abilities through dual pathways: direct cognitive–emotional processing and indirect experiential immersion. The model reveals that cultivating aesthetic ability requires simultaneous attention to both trait–like competencies (emotional intelligence) and state–like experiences (flow), offering a comprehensive framework for understanding aesthetic education. This integrated perspective provides theoretical foundation for developing holistic pedagogical approaches that combine emotional intelligence training with flow–conducive learning environments, thereby addressing current limitations in music education that overemphasize technical skills while neglecting emotional and experiential dimensions of aesthetic development. The research establishes a validated measurement framework and offers practical guidance for curriculum reform, demonstrating that effective aesthetic education must integrate emotional, psychological, and technical dimensions to cultivate comprehensive artistic capabilities among university music majors.

Conclusion

This study demonstrates that emotional intelligence significantly influences aesthetic ability among university music majors, with flow experience serving as a partial mediator. The findings reveal that students with higher emotional intelligence are more likely to experience flow states during musical activities, thereby enhancing their aesthetic capabilities. These results emphasize integrating emotional intelligence training and flow–conducive environments into music education. The research provides empirical evidence that aesthetic development requires holistic approaches combining emotional competencies, psychological states, and technical skills, offering theoretical and practical guidance for reforming music education.

Recommendations

Based on the research findings, the following recommendations are proposed:

1. Curriculum Development

Universities should integrate emotional intelligence training into music education curricula through emotional expression exercises, musical emotion analysis, and group performances. Programs should systematically combine technical skill development with emotional competency building through progressive learning sequences. Interdisciplinary courses incorporating psychology, aesthetics, and pedagogy should be established to enhance students' comprehensive aesthetic abilities.

2. Teaching Practice

Music educators need to adopt holistic pedagogical approaches that simultaneously facilitate flow experiences and emotional intelligence development. Learning environments should balance skill challenges to promote flow states while minimizing distractions. Assessment methods must expand beyond technical proficiency to include emotional intelligence and aesthetic ability measures, providing comprehensive evaluation of students' artistic development.

3. Industry Integration:

Universities should establish partnerships with professional musicians and community organizations to provide real–world applications of emotional intelligence and aesthetic ability. Students should actively participate in social music practices, including festivals, performances, and collaborative projects, ensuring their aesthetic capabilities align with professional and societal demands.

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