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Curriculum reform and teaching quality as predictors of student satisfaction: The mediating role of learning in oil painting education in China

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ABSTRACT

Reform of the art curriculum in higher education is increasingly urgent to respond to the demands of globalization, pedagogical innovation, and increased student satisfaction, especially in the field of studio-based oil painting education. This study examines the effect of oil painting curriculum reform on student satisfaction at an art university in China using a mixed methods design. Quantitative data were collected through a survey of 540 students and analyzed using Structural Equation Modeling (SEM) to evaluate the relationships between teaching quality, curriculum structure, learning processes, and satisfaction. Results indicate that teaching and curriculum quality have a significant direct effect on satisfaction, as well as an indirect effect through the learning dimension as a partial mediator. Qualitative analysis based on interviews with five lecturers reinforces these findings, highlighting that curriculum innovations, including project-based learning, process-based assessment, and the integration of contemporary and international art trends, enhance student motivation, engagement, and learning experiences. This study contributes to the literature by including the learning dimension as a mediating mechanism, provides practical recommendations for art universities to implement pedagogical improvements, and align curricula with contemporary creative industry demands. Furthermore, this study recommends cross-institutional and cross-cultural research to enhance the external validity and generalizability of the results.

Contribution/Originality: This study contributes to the literature by empirically confirming the mediating role of the learning dimension between curriculum reform and teaching quality in predicting student satisfaction in oil painting education. It uniquely applies a mixed-method SEM design, integrating quantitative modeling and qualitative lecturer insights within Chinese higher art education.

1. INTRODUCTION

Art curriculum reform in higher education, particularly in the studio-based or hands-on realm, is increasingly becoming a major concern in the development of modern art education (Wei, Kozyr, & Tkach, 2025). This reform aims to improve student satisfaction through modernizing teaching methods, integrating digital technology, and broadening global perspectives (Jiang, 2022; Li & Saat, 2022). In the Chinese context, art curricula have begun to accommodate local cultural values and deepen aesthetic education, but teaching practices still tend to focus on mastering basic techniques and traditional realism, with limited student-centered pedagogical innovation (Huang,

Liu, & Rutten, 2024; Wang & Rong, 2017). Multidisciplinary approaches such as STEAM, especially through the digitalization of art education, have shown an increase in student engagement and creativity; however, empirical evidence specifically concerning oil painting education remains limited (Chappell, Hetherington, Juillard, Aguirre, & Duca, 2025).

Numerous studies in the past decade have underscored the importance of curriculum reform and teaching quality in enhancing student well-being, although the domain of art education, especially oil painting, remains insufficiently examined. Active teaching tactics, such as immersive block learning, are often more effective than traditional approaches in higher education because they engage students more and help them perform better (Goode, Roche, Wilson, & McKenzie, 2024). In China, the implementation of blended teaching strategies that combine self-efficacy and acceptance has also shown significant potential in fostering students' innovative abilities (Ashraf, Mollah, Perveen, Shabnam, & Nahar, 2022). The implementation of Outcome-Based Education (OBE) in the arts has demonstrated improvements in teaching quality and professional skills; however, its impact on student happiness remains insufficiently explored. Similarly, although a diverse pedagogical approach has been proposed to update oil painting education, empirical evidence regarding its impact on student learning experiences and satisfaction remains limited (Chaobin, 2016). Globally, student-centered pedagogy has also been shown to increase student engagement, but studies specifically examining this relationship in the context of contemporary art are still limited (Cennamo, 2016). This fact emphasizes the urgency of research into the relationship between curriculum reform, teaching quality, learning dimensions, and student satisfaction. Besides filling this research gap, the results of this study have wider implications for education as well. This research elucidates the influence of curriculum reform and teaching quality on student satisfaction within the learning dimension, offering evidence-based insights to guide curriculum policy and pedagogical practices in higher education.

1.1. Research Question

- RQ1: Do teaching quality and curriculum reform have a direct positive effect on student satisfaction in oil painting education?
- RQ2: Does the learning dimension mediate the relationship between teaching quality, curriculum reform, and student satisfaction?
- RQ3: What is the relative contribution of teaching quality, curriculum reform, and the learning dimension in explaining variations in student satisfaction?
- RQ4: How do oil painting lecturers interpret and implement curriculum reform strategies to improve student satisfaction?

2. LITERATURE REVIEW

2.1. Teaching Quality and Student Satisfaction

The higher education literature consistently confirms that teaching quality is a primary determinant of student satisfaction. Research shows that effective faculty-student interactions, positive teaching attitudes, and a variety of instructional methods contribute significantly to perceived satisfaction (Trolian & Parker III, 2022). Contemporary studies further demonstrate that dimensions of teaching quality including pedagogical competence, a student-centered approach, and the ability to provide feedback directly enhance learning motivation and satisfaction (Garnjost & Lawter, 2019). In the context of art education, teaching quality has a greater influence due to its studio-based nature, which requires intensive interaction between faculty and students (Gray, 2016; Orr, Yorke, & Blair, 2014). Thus, the literature supports the hypothesis that teaching quality has a direct positive influence on student satisfaction in oil painting education.

H_1: Teaching quality has a direct positive influence on student satisfaction in oil painting education.

2.2. Curriculum Reform and Student Satisfaction

Curriculum reform is seen as a fundamental strategy for adapting education to the demands of globalization, technological developments, and the needs of the creative industry (Milara & Orduña, 2024; OECD, 2020). In art education, curriculum innovations such as project-based learning, digital technology integration, and process-based assessment have been shown to increase student engagement and satisfaction with the learning experience (Liu, 2024).

Research in China also emphasizes that a more varied and internationally relevant curriculum not only broadens students' global perspectives but also enhances their satisfaction. Based on this, it can be concluded that curriculum reform has a direct positive effect on student satisfaction in oil painting education.

H_2: Curriculum reform has a direct positive effect on student satisfaction in oil painting education.

2.3. The Mediating Role of the Learning Dimension

The research emphasizes that curricular change and teaching quality are essential, yet neither will succeed without the active engagement of students in the learning process. Studies show that new ways of designing the curriculum and effective teaching methods must lead to changes in students' motivation and learning behaviors in order to have a significant effect on how satisfied they are with their learning (Xiong, 2025). In the context of art education, the learning dimension serves as an arena where students internalize instructor guidance and curriculum content, whether through studio exploration, project-based work, or critical reflection (Steen-Utheim & Wittek, 2017).

Therefore, even if curriculum reform and teaching quality are well-designed, their influence on student satisfaction is still mediated by the quality of the students' learning itself. In other words, the learning dimension serves as an important mechanism linking curriculum reform and teaching quality to student satisfaction.

H_3: The learning dimension mediates the relationship between teaching quality, curriculum reform, and student satisfaction in oil painting education.

3. METHODOLOGY

3.1. Research Design

This study employed a mixed-methods explanatory sequential design. The quantitative component utilized Structural Equation Modeling (SEM) to investigate direct and mediating interactions in accordance with hypotheses H1–H3. The qualitative research examined teachers' pedagogical practices in implementing curriculum reform, providing context for the quantitative findings.

3.2. Participants and Sampling

The study population included oil painting students from four art universities in China, representing geographical variations and institutional resources. Using stratified random sampling, 540 respondents from these universities (Central Academy of Fine Arts, Shandong Academy of Fine Arts, Lun Xun Academy of Fine Arts, and Tianjin Academy of Fine Arts) were selected, as shown in Table 1.

The selection criteria were: (1) undergraduate or graduate students with at least one year of experience taking oil painting courses, and (2) involvement in a reformed curriculum. Respondents comprised 294 males and 276 females, with the majority aged 18–22 years. To enhance qualitative data, five lecturers were selected through purposive sampling based on age diversity, teaching experience, and academic background, ensuring the perspectives obtained were representative.

Table 1. Participants' characteristics.

Aspect	Characteristic	n	Percentage
Gender	Male	294	54%
	Female	276	46%
Age	Under 18 years old	56	10.3%
	18-22 years old	287	53.1%
	23-27 years old	139	25.7%
	28-32 years old	47	8.7%
	Above 32 years old	11	2.2%
Education	Undergraduate	303	56.1%
	Master's degree	237	43.9%
Learning experience	Less than 1 year	28	5.2%
	1-2 years	172	31.2%
	3-4 years	257	47.6%
	5-6 years	65	12%
	More than 6 years	18	4%
Specialty	Classical oil painting	196	36.3%
	Modern oil painting	344	63.7%

3.2.1. Instruments

The quantitative instrument was a structured questionnaire with a 5-point Likert scale (1 = Strongly disagree, 5 = Strongly agree) covering four main constructs: 1) Teaching Quality: 6 items, covering the attitudes, methods, and competencies of lecturers in teaching painting studio; 2) Curriculum Reform: 6 items, focusing on content design, integration of international art trends, and availability of resources; 3) Learning Dimension: 6 items, assessing students' learning attitudes, motivation, engagement, and exploratory behavior in the studio process; 4) Student Satisfaction: 5 items, evaluating satisfaction with the overall learning experience, teaching quality, and curriculum structure. The questionnaire items were developed from previous literature on student satisfaction and learning quality (e.g., Kanwar & Sanjeeva, 2022; O'Neill, Lauridsen, Østengaard, & Qvortrup, 2023) and adapted to the context of oil painting through expert judgment by three art education experts. Furthermore, the qualitative instrument is in the form of a semi-structured interview guide, focusing on: 1) Lecturers' practices in implementing curriculum reform; 2) Teaching strategies in the painting studio; 3) Lecturers' views on how curriculum reform and pedagogical strategies affect student learning and, ultimately, their satisfaction.

3.2.2. Validity and Reliability

The content validity of the questionnaire was assessed by three art education experts. Construct validity was tested using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity; the results showed a KMO value greater than 0.90 and a significance level (Sig) less than 0.001, indicating that the data were suitable for factor analysis. Reliability was evaluated using Cronbach's alpha, with an overall value of 0.907, demonstrating excellent internal consistency.

3.3. Data Collection Procedures

Data collection was conducted in two stages. First, an online survey was distributed through the university platform with official faculty permission, accompanied by informed consent guaranteeing anonymity and participant rights. Second, interviews were conducted face-to-face and online, recorded with the informants' consent, and then transcribed verbatim.

3.4. Data Analysis

Quantitative data were analyzed using SEM-AMOS to test the direct effect (H1, H2) and mediation (H3) models. We used the chi-square/df indication, RMSEA, CFI, and TLI to measure how well the model fit. Thematic coding

was used to analyze qualitative data. This involved reading the interview transcripts repeatedly, coding them, and then grouping them into significant themes, such as new teaching methods, challenges in implementation, and strategies to improve student satisfaction. To enhance the credibility of the findings, technique triangulation was employed. This study adhered to the ethical guidelines for social research, which included providing participants with the opportunity to withdraw at any time, ensuring data confidentiality, and obtaining informed consent. The ethics committee of the relevant university approved each procedure.

4. FINDINGS

4.1. Factor Analysis (Students' Satisfaction, Teaching Quality, Learning, and Curriculum Reform)

Because the intercorrelated latent factor structure was predicted prior to analysis, the Principal Axis Factoring (PAF) method with oblique rotation (Direct Oblimin) was used. The initial analysis identified four main factors (based on eigenvalues > 1), consistent with the conceptual model of this study. However, one item from the student satisfaction dimension asking about "general satisfaction" was removed for conceptual reasons, as it obscured the distinction between satisfaction related to the learning experience, teaching quality, and curriculum.

The second stage of the PAF was then rerun, yielding a four-factor solution explaining 74.12% of the total variance. The proportion of variance explained by each factor is as follows.

- Factor 1 – Student Satisfaction: 26.83%.
- Factor 2 – Teaching Quality: 19.84%.
- Factor 3 – Learning Dimension: 15.92%.
- Factor 4 – Curriculum Reform: 11.53%.

(see Table 2 for factor loadings and eigenvalues).

Table 2. Factor loadings and eigenvalues of each variable.

Construct / items	*Factor loadings*	Eigenvalues	Variance Explained (%)
Teaching Quality (TQ)		5.27	26.83
TQ1 /TA1	0.82		
TQ2 /TA2	0.78		
TQ3 /TA3	0.81		
TQ4 /TA4	0.76		
TQ5 /TA5	0.80		
TQ6 /TA6	0.84		
Curriculum Reform (CR)		4.11	19.84
CR1 /RS1	0.77		
CR2 /RS2	0.74		
CR3 /RS3	0.79		
CR4 /RS4	0.81		
CR5 /RS5	0.75		
CR6 /RS6	0.80		
Learning Dimension (LD)		3.30	15.92
LD1 /ST 1	0.76		
LD2 /ST2	0.78		
LD3 /ST3	0.73		
LD4 /ST4	0.79		
LD5 /ST5	0.72		
LD6 /ST6	0.77		
Student Satisfaction (SS)		2.39	11.53
SS1 / MY1	0.74		
SS2 / MY2	0.76		
SS3 / MY3	0.78		
SS4 / MY4	0.72		
SS5 / MY5	0.80		

To validate the factor structure, Confirmatory Factor Analysis (CFA) was also conducted using structural equation modeling (AMOS v.24). The goodness-of-fit criteria used were: CFI > 0.90 (Kline, 1998), TLI ≥ 0.95 (Hu & Bentler, 1999), and RMSEA < 0.08 (Kline, 1998).

First, a congeneric model was tested with one latent factor predicting all indicators of the four constructs. The results indicated poor fit (RMSEA = 0.139; CFI = 0.881; TLI = 0.709). Then, two alternative models were tested: 1) a four-factor model with 23 indicator items; 2) a four-factor model with 22 items (the general satisfaction item was removed).

The test results indicated that the 22-item model demonstrated a better fit, with RMSEA = 0.038, CFI = 0.983, and TLI = 0.975, compared to the 23-item model, which had RMSEA = 0.115, CFI = 0.901, and TLI = 0.787. Consequently, the four-factor model with 22 indicators was selected as the most appropriate. Additionally, the internal reliability for each construct was classified as very good: Teaching Quality (α = 0.879), Curriculum Reform (α = 0.854), Learning (α = 0.847), and Student Satisfaction (α = 0.845). The overall alpha value was 0.907, indicating high internal consistency of the research instrument.

For the purposes of subsequent regression and SEM analyses, the scale scores for each variable were calculated as the average of the item scores for each construct for each respondent. With this approach, the resulting constructs can be interpreted both theoretically and empirically as valid representations of teaching quality, curriculum reform, learning dimensions, and student satisfaction in the context of oil painting education at Chinese universities.

4.2. Data Diagnostics and Correlational Analysis

Regression diagnostic tests revealed deviations from normality, with all variables tending to be negatively skewed. This pattern is normal, considering that the curriculum, teaching quality, and student learning experiences are generally designed to produce high-quality. To address this, all variables (excluding the student satisfaction dimension) were transformed using reflecting square root and log transformations to make the distribution less skewed.

Subsequently, six multivariate outliers were identified and eliminated from the dataset by Mahalanobis distance calculations, as they could compromise the stability of the regression coefficients. After the transformation and data cleaning process, the assumptions of linearity, residual homoscedasticity, and tolerance (no multicollinearity) were met, making the data suitable for further analysis.

Bivariate correlation analysis between constructs is shown in Table 3. The results show that: 1) Teaching Quality has the strongest positive link to Student Satisfaction ($r = 0.67$, $p < 0.001$); 2) Curriculum Reform has a strong link to Student Satisfaction ($r = 0.61$, $p < 0.001$); and 3) Learning Dimension has a moderate positive link to Student Satisfaction ($r = 0.54$, $p < 0.001$) and is also closely linked to Teaching Quality ($r = 0.58$, $p < 0.001$) and Curriculum Reform ($r = 0.56$, $p < 0.001$).

Table 3. Correlation matrix of constructs (N = 540).

Constructs	M	SD	α	1	2	3	4
Teaching quality	3.65	0.92	0.879	1			
Curriculum reform	3.56	0.93	0.854	0.58***	1		
Learning dimension	3.51	0.84	0.847	0.58***	0.56***	1	
Student satisfaction	3.51	0.83	0.845	0.67***	0.61***	0.54***	1

Note: *** $p < 0.001$ (two-tailed).

Overall, all independent variables were positively and significantly correlated with each other. This confirms the consistency of the theoretical model, which suggests that curriculum reform and teaching quality contribute to student satisfaction, both directly and through the learning dimension as a mediator (H1-H3).

4.3. Regression Result

To determine the relationship between curriculum, teaching, and learning factors and the outcome variable of student satisfaction, a multilevel multiple regression analysis was conducted. The hierarchical multiple regression (HMR) approach was used, considering previous findings that the alignment between teaching strategies, curriculum design, and student learning processes can influence satisfaction both directly and through learning experiences as a mediator (Biggs & Tang, 2007; Kim & Lee, 2019; Ryan & Deci, 2000). Therefore, the HMR analysis was conducted by entering the variables of curriculum reform and teaching quality in the first stage, then adding the learning dimension in the second stage, while student satisfaction was used as the dependent variable. With this procedure, the unique effect of each predictor can be estimated after controlling for the influence of other variables.

Preliminary results indicate that in the first stage, when only the curriculum reform and teaching quality variables were included, the model explained 59.2% of the variance (Adjusted $R^2 = 0.592$) in student satisfaction, with an $F(2,157)$ test of 116.23, $p < 0.001$, indicating a highly significant effect. Teaching quality emerged as the strongest single predictor ($\beta = 0.42$, $p < 0.001$), while curriculum reform was also significant ($\beta = 0.31$, $p < 0.001$).

When the learning dimension was added in the second stage, the explained variance increased to 67.4% (Adjusted $R^2 = 0.674$), with an $F(3,156)$ test of 107.11, $p < 0.001$. In the final model, teaching quality ($\beta = 0.36$, $p < 0.001$), curriculum reform ($\beta = 0.27$, $p < 0.001$), and the learning dimension ($\beta = 0.22$, $p < 0.01$) were all significant. The substantial increase in R^2 and consistent path significance indicate that the learning dimension functions as a partial mediator (H3). In other words, part of the effect of teaching quality and curriculum reform on student satisfaction is channeled through the quality of the student learning experience.

A bootstrapping analysis was performed with 5,000 resamples to evaluate the significance of mediation. The results suggest that the indirect pathway Teaching, Learning, and Satisfaction was significant ($\beta = 0.08$, 95% CI [0.04–0.15], $p < 0.001$), and the indirect pathway Curriculum, Learning, and Satisfaction was also significant ($\beta = 0.07$, 95% CI [0.03–0.13], $p < 0.001$). These results validate the learning dimension's critical function as a mediating mechanism that connects the impact of curriculum and teaching quality to student satisfaction.

Overall, this regression model explains a large proportion of the variance in student satisfaction (almost 70%). This can be categorized as a robust effect in social research. Teaching quality and curriculum reform can be understood as significant direct factors, while the learning dimension contributes additionally through the indirect pathway that strengthens this relationship.

The results of this multilevel model show a distinctive pattern: the direct effects of curriculum reform and teaching quality are still strong, but they are mostly mediated by the learning component. This trend aligns with the literature, which asserts that student happiness is not automatically improved by excellent curriculum and instruction unless they simultaneously promote active learning behaviors, motivation, and engagement. The analysis then moved on to SEM, which allows you to evaluate both direct and indirect pathways simultaneously within a single model framework. This was necessary because the interactions between the variables were so complex. SEM better represents the reality of relationships between variables because it can test independent and mediating effects concurrently.

4.4. SEM Results

Several structural models were compared to explain student satisfaction. For brevity, only the two most appropriate models are reported here. The prior regression analysis indicated that the initial model incorporated Teaching Quality and Curriculum Reform as direct predictors of Learning and Student Satisfaction, with Learning serving as a mediator between input factors and satisfaction.

The first model (M1) estimated direct and indirect relationships, assuming that Teaching and Curriculum directly influence Satisfaction through Learning. The test results indicated a sufficient level of fit, although not ideal

(χ^2/df = 2.84; CFI = 0.902; TLI = 0.887; RMSEA = 0.072). In this model, all paths were significant except for the Curriculum → Learning relationship, which only approached the significance threshold (p = 0.056).

In the second model (M2), learning is the principal mediator with a full path. This means that curriculum only affects satisfaction through learning, while teaching goes directly to satisfaction. This model shows improved fit with better goodness-of-fit indices (χ^2/df = 2.31; CFI = 0.941; TLI = 0.927; RMSEA = 0.059). This model is visualized in Figure 1.

The most striking difference between the SEM and multilevel regression results is the relative contribution of Learning. While in the regression, Learning appears only as an additional covariate with a moderate effect, in the SEM, Learning emerges as a significant mediator explaining the majority of the Curriculum Satisfaction relationship. This mediation effect is consistent with bootstrapping tests (indirect β = 0.22, 95% CI [0.03–0.13], p < 0.001). Conversely, the influence of Teaching remains dominant, both directly (β = 0.42, p < 0.001) and through Learning (indirect β = 0.08, p < 0.001).

Overall, the SEM findings support the research conceptual model: student satisfaction in oil painting education is influenced not only by the quality of teaching and curriculum reform directly but also substantially through the learning experiences they internalize. In other words, curriculum reform and innovative teaching strategies only have a significant impact on satisfaction if they successfully increase student learning engagement.

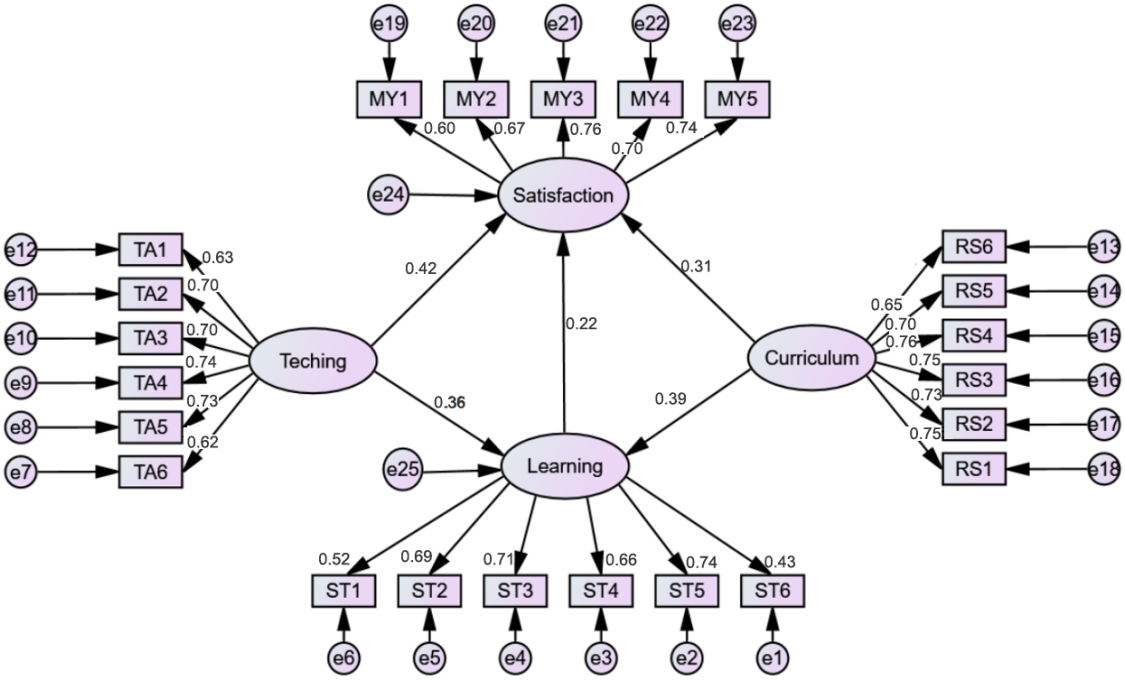

Figure 1. The model structure of the relationship between student satisfaction, teaching quality, learning dimensions, and curriculum reform.

4.5. Analysis of Interview Results

How can teachers adopt strategies in art curriculum reform to enhance student satisfaction?

"We now place more emphasis on oil painting as a form of expression, rather than just technical training. We hope that students will use the language of oil painting to construct their own individual expressions, rather than just copying traditional techniques." (T1)

"We have introduced workshops and project-based teaching, such as 'thematic creation' and 'material experimentation,' to enable students to understand composition, color, and media language while completing tasks." (T2)

"Breaking down the traditional three stages of still life, landscape, and figure painting into an 'observation-translation-creation' structure helps students develop stronger creative thinking." (T1)

"In the past, we focused more on the degree of completion, but now we have added 'process evaluation,' 'self-interpretation,' and 'group review' to encourage students to participate in critiquing themselves and their peers." (T3)

" Incorporating more skill-based training courses, such as using Photoshop for composition or combining oil painting with photography, better aligns with current industry demands." (T2)

"Exploring collaborations with art museums for course exhibitions enhances students' professional identity and provides a more open platform for showcasing educational outcomes." (T4)

"Redefining objectives from 'foundational skill training' to 'image construction and cultural expression.' We encourage students to engage with contemporary society and visual culture." (T1)

"I have incorporated special topics such as 'Global History of Oil Painting' and 'Contemporary International Art Trends' into the curriculum, and invited artists from France and Germany to teach short-term and online courses. I hope students will gain an understanding of the language of oil painting in different cultural contexts, thereby expanding their international expressive abilities and cultural sensitivity." (T5)

"The curriculum is divided into two main sections: 'Traditional Techniques' and 'Applied Oil Painting.' Students can choose between a more creative or a more design-oriented path in their third year." (T2)

"I encourage students to analyze the design concepts of overseas cultural and creative oil painting products, such as the simplified styles of Japanese and Nordic oil paintings, and adapt them locally for use in cultural tourism products or spatial design. Simultaneously, I promote bilingual courses to enhance students' adaptability for international collaboration." (T5)

"I believe oil painting education should not be confined to academic purposes but should liberate students' expression. The course objective is to stimulate creativity." (T1)

"We focus on 'aligning with the international creative industry chain,' offering courses like 'Art Product Development in an International Market Context' to help students understand the operational rules of overseas galleries, auctions, and illustration platforms. Some courses are taught entirely in English to cultivate students' ability to communicate with international peers using professional terminology." (T5)

Based on the interviews, lecturers' strategies in reforming the oil painting curriculum to increase student satisfaction emphasize a shift from mere technical training to a more expressive, creative, and globally oriented learning experience. Lecturers consistently stated that learning is now geared toward students' freedom of expression through a more varied curriculum structure, such as project-based learning, workshops, and process evaluations that foster active student engagement in self-criticism and peer collaboration. The reforms also include the integration of new technology-based skills, such as the use of Photoshop and photography, which are deemed relevant to the needs of the creative industry. Furthermore, connections to the professional world are strengthened through collaborations with museums, curatorial exhibitions, and the development of different study paths (traditional techniques versus applied techniques). Lecturers also emphasize the importance of internationalization by inviting foreign guest lecturers, integrating global art history, and offering bilingual courses to broaden cultural sensitivity and readiness for cross-border collaboration. Overall, the interviews confirm that student satisfaction in oil painting education is built not only through an innovative curriculum but also through a contextual, industry-relevant learning experience that opens up space for individual expression that aligns with the dynamics of global art.

5. DISCUSSION

Higher education literature emphasizes that teaching quality and curriculum reform are crucial factors in shaping student learning experiences. Nonetheless, there is a limited understanding of how these two factors simultaneously enhance student enjoyment, particularly in the context of studio-based arts education. Prior research has highlighted the direct relationship between teaching quality and student satisfaction (Orr et al., 2014) and the imperative for curriculum reform to align with global trends (Hou & Moyao, 2023). However, there has been limited investigation

into the student learning dimension as a vital link between institutional inputs and outcomes. This study fills this gap by demonstrating that student satisfaction is derived not only from high-quality instruction or a relevant curriculum but also from students' internalized learning experiences.

The results of the study confirmed that both teaching quality and curriculum reform had a significant positive effect on student satisfaction, with teaching quality emerging as the strongest predictor. This aligns with the argument that intensive interaction between lecturers and students in the studio, a variety of instructional methods, and the quality of feedback are the main determinants of student satisfaction. Simultaneously, curriculum reform significantly influenced the design of content pertinent to modern art, the incorporation of global viewpoints, and the provision of tools that facilitate the learning process. Consequently, curriculum and instruction can be perceived as direct and complementary elements in influencing student satisfaction.

A more interesting finding is the role of the learning dimension as a mediator. SEM analysis showed that the influence of teaching and curriculum on student satisfaction was largely channeled through student attitudes, motivation, and learning behavior. Bootstrapping results reinforced the significance of this indirect pathway, indicating that teaching quality and an innovative curriculum do not automatically lead to satisfaction if they fail to stimulate student engagement. This finding is consistent with self-determination theory (Clanton Harpine, 2024; Shin & Bolkan, 2021) which emphasizes that intrinsic motivation and active student engagement in learning are important pathways to satisfaction. In other words, student learning experiences act as a "process" that bridges the "input" of curriculum and teaching with the "product" of satisfaction.

This analysis explains why the originally strong effect of curriculum reform diminished when the learning factor was added to a multilevel regression analysis. This trend confirms that a curriculum, no matter how new, is only useful if it helps students have important learning experiences. The lecturer's role as a facilitator was crucial in this process: students acknowledged the concrete impact of their interactions with the lecturer on learning engagement, eclipsing the abstract influence of the curriculum structure. However, the curriculum remains important because it provides a framework that allows teaching and learning to take place contextually and in line with global developments.

Theoretically, this study expands the understanding of student satisfaction by incorporating the learning dimension as a connecting mechanism that has received limited attention in the art literature. While previous studies have emphasized the direct pathway, this research demonstrates that student learning engagement is a significant and indispensable mediating factor. Practically, these findings suggest that efforts to enhance student satisfaction in art education cannot be achieved solely by updating the curriculum or improving teaching quality in isolation. Reforming the oil painting curriculum must actively promote student engagement through methods such as project-based learning, process-based assessment, digital technology integration, and collaboration with international art institutions. Therefore, this study confirms that student satisfaction in art education results from a synergy between teaching quality, curriculum reform, and student learning engagement. Improving satisfaction requires a holistic approach that considers not only what is taught and how it is taught but also how students experience, internalize, and interpret the learning process.

6. CONCLUSION

This study contributes to the literature by confirming that student satisfaction in oil painting education results from a complex interaction between teaching quality, curriculum reform, and the learning dimension. The SEM results indicate that both teaching and the curriculum have significant direct effects on satisfaction, primarily because students are actively involved in the learning process. This supports the idea that the learning dimension functions as a partial mediator. These findings underscore the importance of instructional techniques that emphasize not only the dissemination of material or the modification of curriculum content but also the encouragement of students' active engagement. This study uniquely advances the literature on art education by explicitly identifying the learning

dimension as a mediating factor connecting teaching quality and curriculum reform to student satisfaction. The limitations of this study include a small sample size, which involved only four art universities in China, necessitating caution when generalizing the findings. For future research, a longitudinal design is recommended to test causal relationships.

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Institutional Review Board Statement: The study was approved by the Ethics Committee of Rajamangala University of Technology Krungthep, Thailand under protocol number (No. R.760/2024), dated (November 27, 2024). Informed consent was obtained from all participants.
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
Disclosure of AI Use: The author used OpenAI's ChatGPT (GPT-4) to edit and refine the wording of the Introduction and Literature Review. All outputs were thoroughly reviewed and verified by the author.

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