

REFORMING ART HISTORY AND THEORY TEACHING IN APPLICATION-ORIENTED UNIVERSITIES: EVIDENCE FROM GUIZHOU QIANNAN COLLEGE OF SCIENCE AND TECHNOLOGY*

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Received 10 June 2026; Revised 12 June 2026; Accepted 14 June 2026

Abstract

This study examines the reform of Art History and Theory teaching in application-oriented universities under the background of China's New Liberal Arts initiative. Using Guizhou Qiannan College of Science and Technology as a case study, the research investigates current teaching practices, major challenges, reform strategies, and their effectiveness. A mixed-methods design was employed. Quantitative data were collected from 286 valid student questionnaires and 73 valid teacher questionnaires, while qualitative data were obtained through semi-structured interviews with teachers, students, and industry experts. Descriptive statistics, correlation analysis, multiple linear regression, and thematic analysis were used.

The findings indicate that curriculum-industry practice linkage and student-centered teaching are the strongest predictors of curriculum effectiveness. The regression model explained 49.2% of the variance in learning

Citation:



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Fu Manying and Dech Boonprajak. (2026). Reforming Art History And Theory Teaching
In Application-Oriented Universities: Evidence From Guizhou Qiannan College Of Science And Technology.

Modern Academic Development and Promotion Journal, 4(5), 628-654.;

DOI: <https://doi.org/10.>

<https://so12.tci-thaijo.org/index.php/MADPIADP/>

outcomes ($R^2 = 0.492$, $p < 0.001$). Educational technology integration and innovative assessment methods also showed significant positive effects, although their practical implementation remains limited. Interview findings further revealed that local cultural resources and industry collaboration enhance students' engagement and knowledge application.

Based on these findings, a Culture–Technology–Industry integrated teaching model is proposed. The study provides practical guidance for curriculum reform in application-oriented universities, particularly those located in ethnically diverse regions with rich cultural heritage resources.

Keywords: Art History and Theory, Teaching Reform, Application-Oriented University, Industry-Education Integration, Digital Technology, Local Cultural Resources, Guizhou

Introduction

Against the backdrop of China's launch of the "New Liberal Arts" education development strategy in August 2018, higher education has witnessed a paradigm shift emphasizing interdisciplinary integration, practical competency cultivation, and alignment with regional socioeconomic needs (Barnett, 2015). This transformation aligns with global trends in higher education that prioritize employability and contextualized learning, challenging traditional liberal arts curricula to break disciplinary boundaries and enhance real-world relevance. Art history and theory courses, as foundational components of humanities and arts education, play a pivotal role in fostering cultural literacy, critical thinking, and aesthetic awareness. However, in application-oriented universities, these courses often face marginalization due to their perceived theoretical nature and weak linkage to technical skills, a challenge highlighted by Elkins (2022) who noted the lack of pedagogical innovation connecting historical content to contemporary practice in non-research-intensive institutions.

Traditional art history and theory curricula exhibit multiple systemic issues: ambiguous course objectives, outdated content lagging behind industrial developments, monotonous teaching methods overemphasizing historical narration at the expense of cultural contextualization, and rigid, examination-dominated evaluation systems. Despite national policies such as The New Liberal Arts Construction Declaration and Opinions on Strengthening and Improving Aesthetic Education in Schools in the New Era advocating for applied education, many universities continue to adhere to conventional teaching models, resulting in a disconnect between curriculum design, student development needs, and industry demands. Scholars including Donahue and Stuart (2018) have argued that integrating digital tools, collaborative learning, and local cultural resources can address these gaps, while constructivist approaches (Biggs & Tang, 2015) emphasize embedding regional culture and intangible heritage into teaching to support cultural identity and creativity.

Guizhou Qiannan College of Science and Technology, located in one of China's most ethnically diverse regions, serves as a unique case study for exploring such reforms. The region's rich Miao and Dong cultural heritage, including traditions like Miao embroidery, Dong singing, and Tunpu opera, provides valuable resources for curriculum localization. However, the institution faces common challenges inherent to application-oriented universities in underdeveloped regions: limited interdisciplinary faculty expertise, outdated curriculum content, insufficient digital infrastructure, and weak linkage between classroom teaching and real-world applications. These challenges are compounded by the need to balance cultural inheritance with modern industry demands, as local cultural industries such as cultural tourism and intangible heritage protection require graduates with both theoretical knowledge and practical skills.

Although previous studies have explored project-based learning, digital technologies, local cultural resources, and industry collaboration in art

education, most studies examine these factors independently. Few studies have empirically investigated how student-centered teaching, educational technology, curriculum-industry linkage, and innovative assessment jointly influence learning outcomes in Art History and Theory courses, particularly in application-oriented universities located in western ethnic regions of China. Therefore, a significant research gap remains regarding the development and empirical validation of an integrated curriculum reform model suitable for regional cultural contexts.

The research responds to these contextual pressures by addressing the critical need to reform art history and theory courses in application-oriented universities. It seeks to bridge the theory-practice divide, update curriculum content to reflect industrial and cultural developments, and leverage digital technologies and industry collaboration to enhance student engagement and employability. By focusing on Guizhou Qiannan College of Science and Technology, the study aims to develop contextually appropriate solutions that can be generalized to similar institutions in western ethnic regions, contributing to both regional cultural preservation and broader pedagogical innovation in applied higher education.

Objectives

1. To examine the current teaching practices of Art History and Theory courses in an application-oriented university.
2. To analyze the effects of student-centered teaching, educational technology integration, curriculum-industry linkage, and innovative assessment methods on learning outcomes.
3. To develop and validate a practical teaching reform model for Art History and Theory courses.

Literature review

Art History and Theory Education in Application-Oriented Universities

Art History and Theory courses are fundamental components of higher education in the arts, aiming to cultivate students' aesthetic literacy, cultural awareness, historical understanding, and critical thinking abilities. Traditionally, these courses have emphasized the transmission of theoretical knowledge through lecture-based instruction and textual analysis. However, with the rapid transformation of higher education and the increasing demand for application-oriented talent, traditional teaching approaches have been criticized for their limited connection to professional practice and industry needs.

Previous studies have shown that students in art-related disciplines often perceive Art History and Theory courses as highly theoretical and disconnected from creative practice. Elkins (2022) argued that excessive reliance on historical narration may reduce student engagement and limit the practical relevance of art history education. Similarly, Preziosi (2018) emphasized that contemporary art history education should move beyond the simple transmission of historical facts and encourage students to interpret visual culture within broader social, technological, and cultural contexts.

In application-oriented universities, the challenge becomes even more significant because these institutions prioritize practical competencies, employability, and industry engagement. Consequently, Art History and Theory courses are increasingly expected to support students' professional development while preserving their academic and cultural functions. This transformation requires the redesign of curriculum content, teaching strategies, and assessment systems to better align with the characteristics of application-oriented education.

Therefore, exploring effective teaching reform strategies for Art History and Theory courses has become an important issue in contemporary art education research.

Student-Centered Learning, Educational Technology, and Innovative Assessment in Art Education

Student-centered learning has become one of the most influential educational approaches in recent decades. According to Meaningful Learning Theory, students construct knowledge more effectively when they actively participate in learning activities rather than passively receiving information. In art education, student-centered approaches encourage discussion, collaborative projects, visual analysis, and independent exploration of artistic and cultural phenomena.

Several studies have demonstrated that student-centered teaching significantly improves learning motivation, critical thinking, and knowledge retention. Biggs and Tang (2015) suggested that active learning environments promote deeper engagement and stronger learning outcomes compared with traditional lecture-based instruction.

Educational technology has also become an important driver of curriculum innovation. The development of digital humanities, virtual museums, online archives, artificial intelligence, virtual reality (VR), and augmented reality (AR) provides new opportunities for art history teaching. Baharuddin et al. (2020) found that immersive digital technologies increase student engagement and facilitate historical understanding. Hutson and Olsen (2022) further reported that virtual museum experiences improve students' ability to interpret cultural heritage and artistic artifacts.

Assessment reform represents another important dimension of curriculum innovation. Traditional examinations often focus on factual memorization and fail to evaluate practical competencies or critical thinking.

Contemporary research advocates diversified assessment approaches such as project-based assessment, portfolio evaluation, reflective journals, and collaborative presentations. These methods provide a more comprehensive evaluation of students' learning achievements and professional development.

Collectively, existing studies suggest that student-centered learning, educational technology integration, and innovative assessment methods contribute positively to teaching effectiveness and student learning outcomes.

Industry-Education Integration and Local Cultural Resource Empowerment

Industry-education integration has become a central strategy in application-oriented higher education. By establishing partnerships between universities and industry organizations, educational institutions can create authentic learning environments that connect classroom learning with professional practice.

In art education, industry collaboration may include museum projects, cultural heritage conservation programs, creative industry internships, cultural tourism development projects, and community-based artistic activities. Such experiences allow students to apply theoretical knowledge to real-world contexts while simultaneously enhancing professional competencies.

Researchers have increasingly emphasized the educational value of local cultural resources. Hooper-Greenhill (2007) argued that cultural heritage serves as a living educational resource that promotes identity formation and contextual learning. In China, local ethnic cultural resources have been widely recognized as valuable teaching materials for art education reform.

Guizhou Province possesses abundant ethnic cultural heritage resources, including Miao embroidery, Dong architecture, Buyi traditional arts, and Shui cultural practices. These resources provide unique opportunities for integrating cultural inheritance, artistic creativity, and professional training. Previous studies

have demonstrated that embedding local cultural heritage into curriculum design can enhance students' cultural identity, creativity, and social responsibility.

Therefore, the integration of local cultural resources and industry collaboration represents an important pathway for improving the effectiveness of Art History and Theory education in application-oriented universities.

Research Gap and Conceptual Framework

Although previous studies have investigated student-centered learning, educational technology, innovative assessment, industry-education integration, and cultural heritage education, several limitations remain.

First, most existing studies examine these factors independently, with limited attention given to their combined influence on learning outcomes. Second, empirical research focusing specifically on Art History and Theory courses remains relatively limited compared with broader art education research. Third, previous studies have largely concentrated on developed urban regions, while application-oriented universities located in western ethnic minority areas have received comparatively little scholarly attention. Finally, the integration of local cultural resources, educational technology, and industry collaboration into a unified teaching reform model has not been sufficiently explored.

To address these gaps, this study constructs and empirically tests a Culture–Technology–Industry integrated teaching reform model. Specifically, the study examines the effects of student-centered teaching, educational technology integration, curriculum-industry practice linkage, and innovative assessment methods on learning outcomes in Art History and Theory courses at Guizhou Qiannan College of Science and Technology. The proposed framework aims to provide theoretical and practical guidance for curriculum reform in application-oriented universities located in culturally diverse regions.

Methodology

Research Design

This study employed a mixed-methods research design to investigate the reform and innovation of Art History and Theory teaching in application-oriented universities. The mixed-methods approach was selected because it enables the integration of quantitative and qualitative evidence, thereby providing a more comprehensive understanding of curriculum reform processes and outcomes.

The quantitative component examined the relationships between four dimensions of teaching reform—student-centered teaching, educational technology integration, curriculum-industry practice linkage, and innovative assessment methods—and learning outcomes. The qualitative component explored participants' perceptions of curriculum reform, implementation challenges, and future development strategies through semi-structured interviews.

The study adopted Guizhou Qiannan College of Science and Technology as a case study because of its distinctive application-oriented educational mission and rich ethnic cultural context.

Population and Sample

The target population consisted of teachers, students, and industry experts associated with the School of Arts at Guizhou Qiannan College of Science and Technology.

A stratified random sampling method was employed for student and teacher participants to ensure representation across different academic years, majors, and teaching experiences. Purposive sampling was adopted for industry experts due to their specialized knowledge and direct involvement in industry-education collaboration projects.

A total of 290 student questionnaires were distributed, yielding 286 valid responses, representing an effective response rate of 98.62%. Additionally, 80

teacher questionnaires were distributed, of which 73 were valid, resulting in an effective response rate of 91.25%.

For the qualitative phase, semi-structured interviews were conducted with ten participants, including three teachers, five students, and two industry experts. These participants were selected based on their direct involvement in curriculum reform activities.

Research Instruments

Two structured questionnaires were developed for teachers and students respectively. Each questionnaire consisted of three sections: demographic information, teaching reform dimensions, and learning outcome evaluation.

The questionnaires measured four independent variables:

1. Student-centered teaching approach (X1)
2. Educational technology integration (X2)
3. Curriculum-industry practice linkage (X3)
4. Innovative assessment methods (X4)

Learning outcomes (Y) were measured through indicators including teaching effectiveness, student satisfaction, critical thinking development, and knowledge application ability.

All questionnaire items were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Semi-structured interview protocols were designed to collect in-depth information regarding participants' experiences, perceived benefits, implementation challenges, and recommendations related to curriculum reform.

Instrument Validity and Reliability

Content validity was evaluated using the Index of Item-Objective Congruence (IOC) through expert review. All items achieved acceptable validity scores and were retained.

Reliability was assessed using Cronbach's Alpha coefficients. The reliability values for all dimensions exceeded 0.80 for student questionnaires and 0.70 for teacher questionnaires, indicating satisfactory internal consistency.

Construct validity was examined through Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. The student questionnaire achieved a KMO value of 0.928 ($p < 0.001$), while the teacher questionnaire achieved a KMO value of 0.892 ($p < 0.001$), confirming suitability for factor analysis.

Data Collection

Data collection was conducted between August and December 2025.

Questionnaires were distributed both electronically and in paper format. Prior to participation, respondents were informed about the purpose of the study, confidentiality procedures, and voluntary participation requirements.

Semi-structured interviews were conducted after preliminary quantitative analysis. Each interview lasted approximately 30–45 minutes and was audio-recorded with participant consent. Interview transcripts were subsequently prepared for qualitative analysis.

Data Analysis

Quantitative data were analyzed using SPSS Version 26.0.

The following statistical procedures were employed:

1. Descriptive statistics (frequency, percentage, mean, and standard deviation) to describe respondent characteristics and variable distributions.
2. Reliability and validity analyses to assess instrument quality.
3. Pearson correlation analysis to examine relationships among variables.
4. Multiple linear regression analysis to determine the influence of teaching reform dimensions on learning outcomes.
5. Independent-samples t-tests and one-way ANOVA to examine differences among demographic groups.

Qualitative interview data were analyzed using thematic analysis. The analysis process included data familiarization, initial coding, theme generation,

theme review, and interpretation. The qualitative findings were used to complement and explain the quantitative results.

Research Ethics

This study adhered to established ethical principles for research involving human participants. Participation was voluntary, and informed consent was obtained from all respondents before data collection. Participants were informed of their right to withdraw at any stage without penalty.

All responses were treated confidentially and used solely for academic research purposes. Personal identifying information was removed during data analysis and reporting to ensure participant anonymity and data protection.

This study adopted a mixed-methods research design to systematically investigate the reform and innovation of teaching models for Art History and Theory courses in application-oriented universities, with Guizhou Qiannan College of Science and Technology as the case study. The design integrated quantitative and qualitative approaches to ensure the comprehensiveness, depth, and credibility of research outcomes, aligning with the complex nature of curriculum reform research in multi-ethnic regional contexts.

The study constructed a structural path model to explore the impact of Teaching Reform and Innovation (TRI) on Learning Outcomes (LO), focusing on four core independent variables (student-centered teaching approach, integration of educational technology, curriculum-industry practice linkage, innovative assessment methods) and four dependent variables (teaching effectiveness, student satisfaction, critical and analytical thinking skills, knowledge application ability). The complete variable system is presented in Table 1.

Table 1. Complete Variable System

Code	Variable Type	Variable Name	Measurement Method	Coding Scheme
X1	Independent	Student-centered Teaching Approach	5-point Likert Scale	1 = Strongly Disagree ~ 5 = Strongly Agree
X2	Independent	Integration of Educational Technology	5-point Likert Scale	Same as above
X3	Independent	Curriculum-Practice Linkage with Industries	5-point Likert Scale	Same as above
X4	Independent	Innovative Assessment Methods	5-point Likert Scale	Same as above
Y1	Dependent	Teaching Effectiveness	Binary Variable	0 = Not significant, 1 = Significant
Y2	Dependent	Student Satisfaction	Binary Variable	0 = Dissatisfied, 1 = Satisfied
Y3	Dependent	Critical and Analytical Thinking Skills	Binary Variable	0 = No improvement, 1 = Significant improvement
Y4	Dependent	Knowledge Application Ability	Binary Variable	0 = Cannot apply, 1 = Can apply

The model hypothesized positive causal relationships between each independent variable and the dependent variables, with validation steps

including data preprocessing, model construction, regression coefficient testing, multicollinearity checks, model fit assessment, and heterogeneity analysis.

Two structured questionnaires were designed for teachers (35 items) and students (35 items), covering basic information, the four independent variable dimensions, and curriculum outcomes. All items used a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), with supplementary open-ended questions to enhance data depth. Semi-structured in-depth interviews were conducted with 10 participants (3 teachers, 5 students, 2 industry experts) to explore reform practices, challenges, and suggestions.

Validity was tested using the Index of Item-Objective Congruence (IOC) with expert reviews, ensuring items aligned with research objectives. Reliability was verified via Cronbach’s Alpha coefficient; for student questionnaires, all dimensions exceeded 0.8 (Table 2), and for teacher questionnaires, all dimensions exceeded 0.7, indicating high internal consistency. Structural validity was confirmed through KMO and Bartlett tests (student questionnaire KMO = 0.928, $p < 0.001$; teacher questionnaire KMO = 0.892, $p < 0.001$), supporting factor analysis.

Table 2. Reliability Tests (Student Questionnaire)

Dimensions	Number of items	Cronbach alpha value
Student-centered teaching	5	0.881
Integration of educational technology	5	0.863
Curriculum - Industry practice linkage	5	0.865

Dimensions	Number of items	Cronbach alpha value
Innovative assessment methods	5	0.856
Course outcomes and feedback	10	0.903

The research population included faculty, students from the School of Arts at Guizhou Qiannan College of Science and Technology, and industry collaborators. Stratified random sampling was used for students and teachers, while purposive sampling was adopted for industry experts. A total of 290 student questionnaires were distributed, with 286 valid responses (effective rate 98.62%); 80 teacher questionnaires were distributed, with 73 valid responses (effective rate 91.25%). The demographic characteristics of student samples are shown in Table 3.

Table 3. Frequency Statistics of Student Demographic Characteristics

Names	Options	Frequency	Percentage (%)	Cumulative percentage (%)
1. Gender	female	145	50.70	50.70
	male	141	49.30	100.00
2. Grade	Freshman	66	23.08	23.08
	Junior	83	29.02	52.10
	Sophomore	78	27.27	79.37
	Senior	59	20.63	100.00
3. Major	Environmental design	55	19.23	19.23
	Painting	58	20.28	39.51
	Danceology	42	14.69	54.20
	Performance	30	10.49	64.69

Names	Options	Frequency	Percentage (%)	Cumulative percentage (%)
4. Have you systematically studied theis required courses in art history and theory?	Visual communication design	57	19.93	84.62
	Music	44	15.38	100.00
		286	100.00	100.00
	no	0	0	0
	3 to 5 hours	107	37.41	37.41
On average, how much time do you spend independently studying art history and theory each week?	6-8 hours	92	32.17	69.58
	≤2 hours	51	17.83	87.41
	≥9 hours	36	12.59	100.00
	Combined	286	100.0	100.0

Data collection was conducted from August to December 2025. Quantitative data from questionnaires were analyzed using SPSS 26.0, including descriptive statistics, reliability and validity tests, correlation analysis, multiple linear regression analysis, and heterogeneity analysis (ANOVA and t-tests). Qualitative interview data were transcribed verbatim and analyzed via thematic coding using NVivo, with steps including initial coding, theme extraction, and triangulation with quantitative findings to ensure validity.

Results

The average scores of the five core dimensions for students ranged from 3.618 to 4.043, all significantly higher than the theoretical median of 3.0 ($p < 0.001$), indicating overall positive attitudes toward reform. The ranking of satisfaction was: curriculum-industry practice linkage ($X3 = 4.043$) > student-centered teaching ($X1 = 3.961$) > integration of educational technology ($X2 = 3.803$) > innovative assessment methods ($X4 = 3.715$) > course outcomes and

feedback ($Y = 3.618$) (Table 4). For teachers, average scores ranged from 3.271 to 3.389, with innovative assessment methods rated highest ($X4 = 3.389$) and integration of educational technology lowest ($X2 = 3.271$), reflecting more cautious evaluations from implementers.

Table 4. Descriptive Statistics for Student Questionnaire Dimensions

Name	Sam ple size	Minim um	Maxim um	Aver age	Stand ard deviat ion	Varia nce	Kurto sis	Skewn ess	Coeffici ent of variatio n (CV)
Student - centere d teaching	286	1	5	3.961	0.863	0.744	2.101	-1.397	0.21781
Integrati on of educati onal technol ogy	286	1	5	3.803	0.863	0.744	0.571	-0.917	0.22688
Curricul um - Industry practice linkage	286	1.2	5	4.043	0.842	0.71	2.018	-1.514	0.20837

Name	Sam ple size	Minim um	Maxim um	Aver age	Stand ard deviat ion	Varia nce	Kurto sis	Skewn ess	Coeffici ent of variatio n (CV)
Innovati ve assessm ent method s	286	1	5	3.715	0.852	0.725	0.383	-0.755	0.22927
Course outcom es and feedbac k	286	1.8	4.7	3.618	0.857	0.735	-0.78	-0.728	0.23698

The results indicate that curriculum-industry practice linkage received the highest mean score ($M = 4.043$), suggesting that students strongly value authentic learning experiences connected with professional practice. In contrast, course outcomes and feedback received the lowest score ($M = 3.618$), implying that reform efforts have not yet been fully translated into observable learning gains.

Pearson correlation analysis showed significant positive correlations between all independent variables and course outcomes ($p < 0.01$), with the strongest correlations between curriculum-industry practice linkage ($r = 0.498$) and student-centered teaching ($r = 0.496$) with course outcomes. Partial correlation analysis, controlling for confounding variables, confirmed the independent contributions of each dimension (Table 5).

Table 5. Partial Correlation Coefficient Analysis After Controlling for Variables

Variable Pair	Controlled Variables	Partial Correlation Coefficient	Significance (p-value)
X1 and Y	X2, X3, X4	0.381	< 0.001
X2 and Y	X1, X3, X4	0.312	< 0.001
X3 and Y	X1, X2, X4	0.402	< 0.001
X4 and Y	X1, X2, X3	0.273	< 0.001

Group correlation analysis revealed that junior students and those spending 6-8 hours weekly on self-study showed the strongest correlations between reform dimensions and course outcomes. For example, the correlation between curriculum-industry practice linkage and course outcomes was 0.545 for juniors, higher than other grades. For teachers, no significant differences in evaluations were found across teaching experience, title, educational attainment, or course type ($p > 0.05$), indicating consistent recognition of reform direction across diverse teacher groups.

Multiple linear regression analysis ($R^2 = 0.492$, $F = 68.056$, $p < 0.001$) identified student-centered teaching ($\beta = 0.323$, $p < 0.001$) and curriculum-industry practice linkage ($\beta = 0.296$, $p < 0.001$) as the two core drivers of curriculum outcomes, followed by innovative assessment methods ($\beta = 0.230$, $p < 0.001$) and integration of educational technology ($\beta = 0.195$, $p < 0.001$) (Table 6).

Table 6. Summary of Multiple Linear Regression Analysis Results (N=286)

Variable	Non-standardized coefficient (B)	Standard error	Standardized coefficient (Beta)	T	P	VIF	Tolerance
Constant	-0.466	0.251	-	-1.858	0.064	-	-
Student-centered teaching	0.321	0.045	0.323	7.128	0.000	1.136	0.881
Integration of educational technology	0.194	0.047	0.195	4.086	0.000	1.261	0.793
Curriculum - Industry practice linkage	0.301	0.047	0.296	6.371	0.000	1.191	0.840
Innovative evaluation methods	0.231	0.045	0.230	5.104	0.000	1.121	0.892

Variable	Non-standardized coefficient s (B)	Standard error	Standardized coefficient s (Beta)	T	P	VIF	Tolerance
R ²	0.492			F (4,281)=68.056, p=0.000			
Adjust R ²	0.485						
D-W value	1.976						

The regression results demonstrate that curriculum-industry linkage and student-centered teaching are the strongest predictors of learning outcomes. These findings suggest that authentic learning experiences and active participation contribute more substantially to student development than technological tools alone.

Thematic analysis of interviews identified five core themes: student-centered teaching practice, deep integration of educational technology, curriculum-industry practice linkage, innovative assessment methods, and curriculum outcome feedback. Key qualitative insights included students' strong preference for local cultural cases, teachers' challenges in deep technology integration due to limited training, and industry experts' emphasis on the need for practical skills such as digital tool operation and project planning. Successful practices included project-based learning involving local intangible cultural heritage and multi-stakeholder evaluation systems with industry participation.

Discussion

The findings demonstrate that teaching reform initiatives have produced generally positive outcomes in Art History and Theory courses at Guizhou Qiannan College of Science and Technology. Among the four reform dimensions examined in this study, student-centered teaching and curriculum-industry practice linkage emerged as the strongest predictors of learning outcomes. These findings support the assumptions of Meaningful Learning Theory, which emphasizes that active participation and contextualized learning experiences facilitate deeper understanding and knowledge retention.

The significant influence of student-centered teaching is consistent with previous studies indicating that active learning environments improve students' motivation, engagement, and critical thinking abilities. Traditional lecture-dominated approaches often position students as passive recipients of knowledge. In contrast, student-centered approaches encourage discussion, inquiry, reflection, and collaborative learning, enabling students to construct knowledge independently. The results suggest that when students actively participate in learning activities, they demonstrate higher levels of satisfaction and stronger learning outcomes.

The study also found that curriculum-industry practice linkage exerted the strongest overall effect on course effectiveness. This finding aligns with previous research on application-oriented education, which highlights the importance of connecting theoretical knowledge with authentic professional practice. For Art History and Theory courses, industry collaboration provides opportunities for students to engage with museums, cultural heritage projects, cultural tourism initiatives, and creative industries. Such experiences help students understand the practical value of historical and theoretical knowledge while strengthening their professional competencies.

Although educational technology integration and innovative assessment methods also showed significant positive effects, their influence was comparatively weaker. One possible explanation is that technological tools alone cannot guarantee meaningful learning outcomes unless they are accompanied by appropriate pedagogical design. Similarly, assessment innovation may improve learning experiences, but its effectiveness depends on the degree to which assessment activities are aligned with curriculum objectives and real-world competencies.

An important contribution of this study is its emphasis on local cultural resources as an essential component of curriculum reform. The ethnic cultural heritage of Guizhou, including Miao embroidery, Dong architecture, and Buyi traditional arts, provides valuable educational resources that enrich teaching content and strengthen students' cultural identity. Integrating local cultural resources into curriculum design not only promotes cultural inheritance but also enhances the relevance and authenticity of learning experiences.

Overall, the findings support the effectiveness of the proposed Culture–Technology–Industry integrated teaching model. The model demonstrates that meaningful curriculum reform requires the coordinated interaction of pedagogical innovation, technological support, industry engagement, and cultural resource integration rather than reliance on any single reform strategy.

Recommendations

Based on the findings of this study, several recommendations are proposed for universities, educators, and policymakers seeking to improve Art History and Theory education in application-oriented institutions.

First, universities should strengthen student-centered teaching practices by encouraging collaborative learning, project-based activities, case analysis, and

classroom discussions. Such approaches can increase student engagement and promote the development of critical thinking skills.

Second, educational technology should be integrated more systematically into curriculum design. Digital archives, virtual museums, online exhibitions, artificial intelligence tools, and immersive technologies such as VR and AR should be utilized to enhance students' learning experiences and facilitate access to cultural resources.

Third, stronger partnerships between universities and industry organizations should be established. Museums, cultural heritage institutions, design enterprises, and cultural tourism organizations can provide authentic learning opportunities that connect theoretical knowledge with professional practice.

Fourth, assessment systems should be diversified to better evaluate students' practical competencies. Portfolio assessment, project evaluation, reflective journals, and collaborative presentations should complement traditional examinations to provide a more comprehensive assessment of student learning.

Fifth, local cultural resources should be incorporated into curriculum development. Universities located in ethnically diverse regions should actively utilize local cultural heritage resources to enrich teaching content, strengthen cultural confidence, and promote the preservation of traditional culture.

Finally, policymakers should provide financial and institutional support for curriculum reform initiatives, particularly in application-oriented universities located in underdeveloped regions. Such support can facilitate technological upgrading, faculty development, and industry-education collaboration, thereby improving the overall quality of art education.

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