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Designing a Data-Driven, Innovative Practical Model for Minority Dance Courses in Higher Education Institutions

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Abstract

This study aimed to design and evaluate a data-driven, innovative practical teaching model for minority dance courses in higher education by integrating constructivist learning theory, multicultural education, and experiential learning. The objectives were threefold: (1) to develop a systematic instructional design framework, (2) to measure students' knowledge improvement before and after applying the model, and (3) to assess student satisfaction with the model, particularly regarding cultural identity, learning experience, and engagement. A total of 17 expert instructors from Chinese universities and Kunming University were selected through purposive sampling to contribute to the design process using the Delphi Method. Additionally, 402 first-year dance students participated in evaluating the model's effectiveness. Quantitative analysis was conducted using means, standard deviations, coefficients of variation, and t-tests. The experts' evaluation of the teaching model yielded a mean of 4.63 (SD = 0.31, CV = 17.84, p = .002), indicating moderate agreement. Student performance significantly improved after intervention, with average skill scores rising from 16.11 (SD = 0.884) to 20.33 (SD = 0.564), p = .002. Student satisfaction reached 78.58% (mean = 3.90, SD = 0.72, CV = 18.78). The hybrid teaching model—blending traditional methods with interactive digital tools and interdisciplinary content (effectively enhanced students' dance proficiency, cultural awareness, and engagement). These findings support the use of blended learning and data-informed instructional strategies to drive innovation and improve outcomes in minority dance education.

Keywords: Data-Driven Learning, Educational Data Analysis, Blended Learning Model, Minority Dance Education, Curriculum Innovation, Higher Education, Instructional Design

1. Introduction

In the context of China's ongoing modernization agenda, education has been recognized as a central pillar of national development. Over the past decade, the Chinese government has launched a series of initiatives to improve the quality, accessibility, and relevance of education across all levels. In 2018, national policy emphasized the cultivation of "comprehensive quality talents" capable of contributing to social innovation and economic growth [1]. This was followed in 2019 by directives to reform rigid and outdated teaching methods in favor of more interactive, student-centered learning approaches [2]. Most recently, in 2024, education, science and technology, and human capital development were formally positioned as core strategies for achieving long-term national progress [3].

Within this broader educational landscape, the importance of arts education (particularly traditional dance) has been re-evaluated not merely as a cultural enrichment activity, but as a critical mechanism for preserving intangible heritage and fostering social cohesion among China's diverse ethnic populations [4], [5]. Minority dance, which embodies unique historical narratives, aesthetics, and spiritual traditions, has been identified as an essential element of cultural inheritance. Kunming, located in the ethnically diverse Yunnan Province, is uniquely positioned as a hub for minority dance education due to its proximity to several indigenous communities, including the Dai, Yi, Bai, Miao, and Tibetan groups [6].

However, despite its cultural and educational significance, minority dance education in Chinese higher institutions remains underdeveloped and empirically under-researched [7]. Existing studies largely adopt qualitative or macro-level approaches, while micro-level pedagogical practices—such as specific teaching methods, learner engagement

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strategies, and objective assessment tools (have rarely been systematically examined) [8]. There is also a tendency to rely on traditional dance teaching methods that emphasize demonstration and rote imitation, which may fail to meet the learning preferences and digital literacy skills of today's students [9]. Moreover, there is insufficient exploration of how modern instructional technologies, such as blended learning platforms, multimedia resources, and data-driven feedback systems, can be integrated effectively into minority dance education [10]. These gaps reveal a clear research deficiency: there is a lack of evidence-based, scalable, and culturally responsive instructional models for minority dance that combine educational theory, cultural studies, and data-driven evaluation [11].

The novelty of this study lies in addressing that gap through a multi-faceted, interdisciplinary approach. By designing, implementing, and validating a data-driven instructional model grounded in constructivist learning theory, multicultural education principles, and experiential learning frameworks [12], this research proposes an innovative solution that bridges traditional cultural practices with contemporary educational technologies. Focusing on five traditional ethnic dance forms, this study applies a rigorous mixed-method approach, combining expert consultations via the Delphi method and large-scale survey data from 402 first-year students at Kunming University. Quantitative data were analyzed using advanced statistical tools (SPSS and AMOS) to ensure robust validation of the model's reliability, effectiveness, and potential scalability [13].

The proposed model incorporates pre- and post-assessments, real-time feedback mechanisms, and personalized learning paths facilitated through digital platforms. This not only promotes learner autonomy and engagement but also preserves cultural authenticity and heritage values. The research makes a novel contribution by offering a replicable and scalable framework for technology-enhanced, culturally responsive dance education, which has not been sufficiently explored in existing literature. The findings provide valuable insights for policymakers, educators, and curriculum designers seeking to modernize heritage education in the digital era, balancing tradition with innovation in a sustainable and evidence-based manner.

2. Literature Review

2.1. Research on the Concept of Innovative Education Models in China

Dance education has become a prominent area of research within China's educational reform discourse. Since 2015, academic publications in this field have grown significantly, particularly those focused on pedagogical improvements in higher vocational institutions and teacher training colleges. A key trend in this development is the increasing adoption of blended learning models such as flipped classrooms, MOOCs, and online platforms (to enhance students' autonomy, interactivity, and engagement in the learning process) [13].

Several institutions have led the way in modernizing dance pedagogy, integrating educational technology and innovative instructional strategies to improve teaching effectiveness [14]. These efforts are aligned with national objectives to cultivate talent equipped with interdisciplinary knowledge and technological literacy. Current trends in Chinese dance education also include the use of VR, AI-based learning systems, and other immersive tools, although challenges such as high implementation costs and limited teacher training remain significant barriers [15]. Addressing these challenges requires capacity-building strategies, particularly in digital literacy among educators, to ensure effective integration of modern tools into traditional curricula [16].

2.2. Theoretical Research on Dance Teaching Models in China

The application of educational theory has played a pivotal role in guiding the transformation of dance instruction in China. Constructivist learning theory emphasizes that students construct knowledge through active participation, while multicultural education supports the inclusion of diverse cultural narratives within the curriculum. Experiential learning further strengthens this framework by advocating for hands-on, reflective learning environments [17].

Chinese researchers have increasingly adopted these frameworks to develop more dynamic and culturally responsive teaching models. Technology-enhanced teaching methods (especially the use of multimedia, online modules, and hybrid platforms) have shown promise in enriching the student learning experience and improving instructional efficiency [18]. Another important research direction is the creation of teaching evaluation systems that not only assess student outcomes but also ensure alignment with cultural preservation goals [19]. Emerging studies further highlight the value of interdisciplinary approaches that link dance instruction with history, anthropology, and sociology to deepen students' conceptual and contextual understanding [20].

2.3. Practical Research on Dance Teaching Methods

In practice, educators have begun to experiment with a variety of innovative teaching strategies to adapt to the evolving needs of learners and technological advancements. These include role-playing, scenario-based learning, group collaboration, and project-based assessments. Such approaches aim to develop students' creativity, technical skills, and cultural sensitivity within the dance curriculum [21].

Blended learning models have received particular attention for their potential to combine the benefits of face-to-face instruction with the flexibility of digital platforms. Research has demonstrated that multimedia teaching can significantly improve student outcomes and engagement in both theoretical and practical aspects of dance education [22]. The increasing prevalence of "Internet+" models—integrating online platforms with traditional teaching (reflects a shift toward more responsive, student-centered pedagogies) [23]. These developments support the idea that technological integration, when grounded in solid pedagogical frameworks, can revitalize traditional arts education without compromising its cultural integrity.

2.4. Teaching for Minority Dance Course

Minority dance education has gained momentum as a field of study due to its role in preserving ethnic identities and promoting cultural diversity. Recent research has explored curriculum development, instructional strategies, and the cultural dimensions of teaching traditional dance forms. Some studies emphasize the importance of connecting classroom learning with real-world performance practices to reinforce cultural authenticity [24].

Efforts have also been made to optimize instructional resources, such as video archives, costumes, and region-specific materials that reflect the lived realities of ethnic communities. Researchers have proposed that minority dance education should incorporate new media technologies to increase accessibility and student engagement while retaining traditional knowledge systems [25]. These include online learning environments, mobile applications, and VR-enhanced simulations. Moreover, interdisciplinary collaboration (particularly with fields like cultural studies, linguistics, and digital humanities) has been recommended as a strategy to modernize content without eroding its cultural roots [26].

Another major focus is the personalization of learning pathways based on student background, ability, and interest. This includes differentiated instruction models and culturally responsive assessment tools that honor both individual growth and collective heritage [27]. The literature consistently calls for a balanced approach (integrating traditional values with contemporary tools) to ensure the sustainable development of minority dance education in a rapidly changing educational landscape.

3. Method

The research objectives of this chapter are as follows:(1) To determine the pedagogical design of the innovative teaching model using the Delphi method for expert professors; (2) To investigate the results of the Delphi method using a questionnaire and to test the reliability and validity of the results using SPSS software to ensure the authenticity and validity of the findings. This chapter describes the method of data collection using the Delphi technique. Quantitative and qualitative research methods were used to draw scientific conclusions through four rounds of soliciting expert opinions; also, the chapter explains the research tools used for data collection, data collection procedures, and statistical methods used in data analysis using SPSS 28.0 software.

3.1. Theoretical Framework

The study's theoretical framework covers constructivist learning, multicultural education, and experiential learning theories. Constructivism emphasizes that learners construct new knowledge through interaction and existing knowledge. In the context of minority dance courses, students need to understand the cultural connotations of dance through practice, experience, and reflection. Multicultural education theory advocates that education should integrate and respect different cultures and that curriculum design should reflect multicultural contexts to promote students' understanding of and respect for minority cultures. On the other hand, experiential learning theory emphasizes learning through direct experience and hands-on activities, where students can gain a deep understanding of the art of minority dance through dance practice, performance, and cultural exchange. Based on these theories, the dissertation will explore

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how to effectively apply them in the minority dance program at Kunming University. Constructivism guides the design of course content, multicultural education theory ensures cultural inclusiveness in the curriculum, and experiential learning theory reinforces practical teaching so that students can deepen their knowledge and skills through actual dance activities. Combining these theories provides a solid foundation for curriculum innovation, promoting cultural heritage, and enhancing students' learning experience and participation.

Figure 1 illustrates the proposed hybrid instructional framework for minority dance education, highlighting the integration of traditional cultural elements with modern teaching methods. The model begins with the core objectives of enhancing cultural identity, improving dance skills, developing aesthetic abilities, and promoting creative expression. These objectives inform the teaching and learning elements, which encompass cultural recognition, aesthetic ability, creative expression, and dance skills as key curriculum pillars. The model is implemented through a combination of online and offline teaching strategies: online teaching leverages multimedia, virtual reality, platform recordings, and peer-based evaluations, while offline teaching uses interdisciplinary activities, interactive sessions, panels, and group discussions to promote engagement. Finally, a robust feedback system involving both teacher evaluations and peer assessments ensures continuous monitoring and improvement of the teaching process. This framework aims to modernize minority dance education while preserving cultural authenticity and enhancing student-centered learning outcomes.

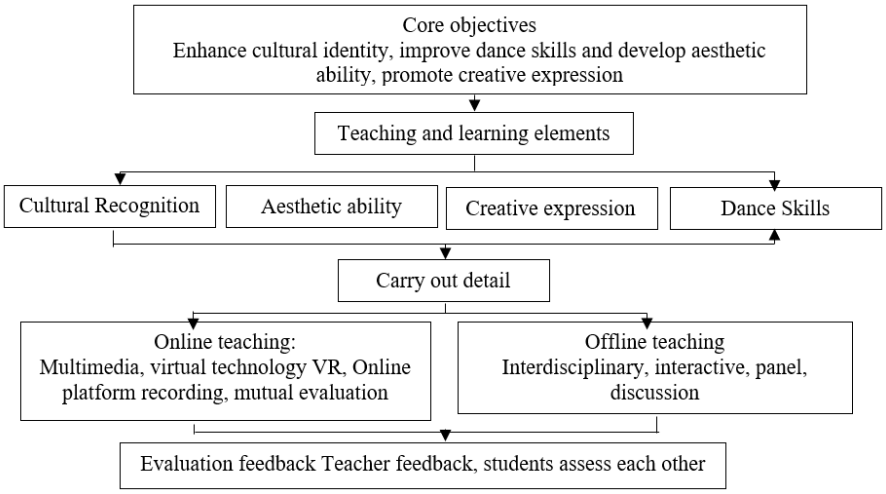

Figure 1. Developing a Hybrid Instructional Framework for Ethnic Minority Dance Programs

3.2. Sampling Techniques

The Delphi Method, also known as the Delphi Technique, is a structured forecasting and decision-making methodology first proposed by the RAND Corporation in the 1950s for forecasting technology trends, evaluating policies, and solving complex problems. Its core idea is to integrate the knowledge and experience of experts and reach consensus through multiple rounds of questionnaires and feedback. Before starting the study, it is necessary to clarify the research objectives and questions, determine the scope of the study, themes, and specific questions, and provide guidance for expert selection and questionnaire design. 1) Expert selection: Through purposeful sampling, experts in teaching minority dances, education scholars, and cultural researchers from Kunming University and related fields are selected to participate and provide valuable insights. 2) Anonymous feedback and revision: After the first round of surveys, the researcher summarizes. After the first survey round, the researcher summarized the opinions, formed a comprehensive questionnaire or report, and fed it to the experts for correction and deepening understanding. 3) Consensus Reaching: Through multiple rounds of feedback and correction, consensus was gradually reached, and a scientific and practical teaching model for ethnic minority dance courses was finally formed. 4) Advantages of the Delphi Method: Anonymous feedback reduces prejudice, experts can amend their opinions to converge to consensus, and the final design of the teaching model is based on collective wisdom, with scientific and Operationalization. Through the Delphi method, it is possible to construct an innovative model of minority dance curriculum supported by a wide range of

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professional opinions to improve the teaching effect and to ensure the curriculum's cultural sensitivity and educational value.

3.3. Instrumentation

The instrumentation for this research involved a systematic, phased approach. In Phase 1, the final teaching model was designed using the Delphi method to ensure scientific rigor and practical feasibility. A series of questionnaire surveys was conducted to collect expert opinions on innovating the teaching mode of minority dance courses, with seventeen experts interviewed on the theme of "How to Innovate the Teaching Mode of Ethnic Minority Dance Courses at Kunming University." The questionnaire was revised and improved based on feedback. Additionally, semi-structured interviews, including both telephone and face-to-face sessions, were held to explore expert insights and suggestions. Questionnaire I was used in the second survey round to evaluate experts' opinions on the existing teaching model using a five-point Likert scale to ensure data validity. Following the return of Questionnaire I, the responses were summarized and formed into Questionnaire II to further collect expert views and identify similarities and differences. After analyzing Questionnaire II, the results were distilled into Questionnaire III to reach a final consensus among the experts.

In Phase 2, the Delphi method results were analyzed and validated to verify their credibility through additional questionnaires, with reliability and validity tested using SPSS software. A random sample of 100 dance majors at Kunming University was selected for this stage. The independent variables were generated following the Delphi technique, while a five-point Likert scale was used to assess the instructional design's impact. Data collection for the course design relied on questionnaires, and the resulting student feedback data was analyzed with SPSS software to verify its reliability and validity. Finally, based on the reliability and validity findings from SPSS, AMOS 2.8 software was used to build the teaching design model for the innovative practice of minority dance courses at Kunming University.

3.4. Procedure of the Data Collection

The Delphi method was used for data collection. 1) The researcher explored the drawbacks of the existing teaching model of the minority dance program at Kunming University through brainstorming sessions, which served as a framework for semi-structured interviews. Questionnaires were sent to 17 experts who had two to two and a half weeks to complete and return the first round of questions. After receiving the feedback, the researcher categorized and synthesized the answers to form Questionnaire I. The questionnaire was analyzed using a five-point Likert scale, and the data were analyzed through mean, standard deviation, and correlation. 2) This round assessed the experts' opinions and evaluated the experts' responses using a five-point Likert scale. The questionnaire was revised, and the experts reassessed and provided feedback. The researcher analyzes the data and revises the questionnaire to obtain Questionnaire II. 3) Round 3: Reassessment phase where the experts are rated based on Questionnaire II. The researcher selects items that agree with most experts' opinions and uses the results to develop Questionnaire III. The final proposal for the instructional model is determined by collecting experts' opinions again. 4) Round 4: Workable ideas are finalized, and a report is produced. Experts validate the ideas and implementation details to complete the innovative design of the instructional model.

3.5. Statistical Analysis

This study utilized a mixed research methodology, using simple random sampling of the identified population to collect a pre-test research sample from the population in Yunnan Province within China. One hundred pre-test questionnaires were distributed with a return rate of 100%, and a total of 100 valid questionnaires were collected. The post-test was a collection of questionnaires from 400 students enrolled in the dance program at Kunming College Academy. In this paper, the data will be tested for reliability, and exploratory factor analysis will be conducted using SPSS to ensure its suitability for factor analysis, validation factor analysis, and path analysis using AMOS software after collecting formal data.

4. Results and Discussion

This chapter applies the Delphi method to evaluate a unique instructional design framework for minority dance courses at Kunming University. Researchers gathered expert input through semi-structured interviews and questionnaires,

followed by reliability analysis, exploratory factor analysis, and confirmatory factor analysis in SPSS to ensure scientific rigor. In the first round, data specialists discussed limitations of the current instructional model, which informed a questionnaire covering course objectives, content, methods, and resources. The second round involved expert evaluations of this framework, scoring and revising indicators as needed, with findings shown in table 1. The third round reassessed these variables' influence on student responses and refined the indicators, as presented in table 2. Finally, the fourth round focused on expert validation of a blended learning model for minority dance, resulting in a finalized and documented questionnaire for future implementation.

4.1. First Round: Brainstorming

The semi-structured interview questions about the factors influencing the current status quo of the minority dance program at Kunming University, which is affected by four aspects: course objectives, teaching content, teaching methods, and teaching resources. The course objectives emphasize personal cultural identification, dancing proficiency, aesthetic capability, collaboration, physical fitness, creative expression, emotional growth, social responsibility, and qualifications. Explicit course objectives enhance students' comprehension and appreciation of minority cultures, while the curriculum addresses cultural diversity and mirrors regional cultural variations. Instructional methodologies encompass practical teaching, interactive teaching, demonstrative teaching, case-based teaching, blended learning, collaborative group learning, situational simulation, and individualized education. Educational resources facilitate the effective execution of courses and address students' learning requirements. Appropriate, high-caliber instructional materials, multimedia tools, and facilities can facilitate seamless course execution. Collaboration with community and local ethnic minority cultural organizations and the engagement of skilled educators may offer students an expanded learning platform and a wealth of experience. An online learning platform promotes extracurricular education and communication, while an efficient system for updating and managing resources guarantees that teaching materials remain current. The judicious use of local cultural resources and the incorporation of interdisciplinary resources inside the educational institution can augment the feasibility of instruction, enrich the curriculum, and boost learning outcomes.

4.2. Second Round: Evaluation of Experts' Opinions

After distributing the questionnaire to a panel of experts, their feedback revealed comprehensive insights regarding the course objectives, teaching content, teaching methods, and teaching resources. For the dimension of cultural identity, experts strongly recognized the importance of enhancing students' cultural identity, with a mean score of 4.58, integrating the historical and cultural context of dance with a mean of 4.65, strengthening intercultural communication at 4.48, and linking national culture with modern culture at 4.61. These aspects all reached a consensus rating of "Congruent," highlighting that the experts consistently valued efforts to build students' awareness and respect for culture through dance. Table 1 summarize the result from questionnaire 1.

Table 1. Analysis of the impact of course objectives on students' feedback (questionnaire I)

Category	Item	Mean	Consensus	Category	Item	Mean	Consensus
CI	Enhance cultural identity	4.58	Congruent	IS	Attract attention	4.63	Congruent
CI	Historical/cultural context	4.65	Congruent	IS	Meet diverse needs	4.75	Congruent
CI	Intercultural communication	4.48	Congruent	IS	Express freely	4.78	Congruent
CI	Nation-modern culture link	4.61	Congruent	IS	Personalized feedback	4.50	Congruent
CI	Cultural diversity	4.55	Congruent	IS	Stimulate creativity	3.95	Incongruent
DS	Balance in teaching	3.80	Incongruent	TT	Varied strategies	4.80	Congruent
DS	Modern techniques	4.30	Congruent	TT	Emphasize teamwork	4.35	Congruent
DS	Overall performance	4.88	Congruent	TT	Practice-theory combination	4.74	Congruent
DS	Assessment of technique	4.43	Congruent	TT	Blend methods	4.20	Congruent
AA	Dance aesthetics curriculum	4.53	Congruent	TT	Interactive methods	4.58	Congruent
AA	Develop aesthetic awareness	4.76	Congruent	TT	Use of VR	4.61	Congruent
AA	Aesthetic characteristics	4.52	Congruent	TT	Use scenarios	4.38	Congruent
AA	Aesthetic reflection	3.75	Incongruent	DR	Resource variety	4.48	Congruent
CE	Inspire creativity	4.64	Congruent	DR	Dance video diversity	4.87	Congruent
CE	Creative expression effectiveness	4.73	Congruent	DR	Cultural content	4.76	Congruent
ED	Express emotions	4.71	Congruent	DR	Use of props	4.56	Congruent

ED	Enhance emotional intelligence	4.67	Congruent
ED	Recognize emotions	4.82	Congruent
SR	Respect cultures	4.81	Congruent
SR	Promote social values	4.77	Congruent
CB	Ethnic minority background	4.85	Congruent
CB	Understand connotations	4.78	Congruent
CB	Respect for cultures	4.60	Congruent
CB	Linguistic/artistic expression	4.69	Congruent
CB	Explore topics	4.5	Congruent
DP	Basic movements/styles	4.80	Congruent
DP	Rhythmic/expressive	4.56	Congruent
DP	Technique explanation	4.66	Congruent
DP	Physical fitness	4.40	Congruent
DP	Cultural symbolism	4.81	Congruent
DP	Improvisation	3.82	Incongruent
DR	Electronic accessibility	4.88	Congruent
DR	Local culture	4.72	Congruent
DR	Updated resources	4.65	Congruent
AAc	Accessible resources	4.80	Congruent
AAc	Appropriate content	3.96	Congruent
AAc	Adaptable styles	4.84	Congruent
AAc	Simple access	4.43	Congruent
AAc	Cultural relevance	4.12	Congruent
AAc	Effective guidance	4.27	Congruent
AAc	Aligned with objectives	4.89	Congruent
AAc	High-quality info	4.74	Congruent
AF	Self-assessment tools	4.63	Congruent
AF	Timely feedback	4.66	Congruent
AF	Individualized instruction	4.62	Congruent
AF	Performance advice	4.75	Congruent
AF	Fair assessment	4.64	Congruent
AF	Self-reflection	4.21	Congruent
AF	Assessment complements resources	4.87	Congruent
AF	Teacher data use	4.58	Congruent
AF	Case studies	3.58	Incongruent

Note: CI = Cultural Identity, DS = Dance Skills, AA = Aesthetic Ability, CE = Creative Expression, ED = Emotional Development, SR = Social Responsibility, CB = Cultural Background, DP = Dance Practice, IS = Individual Students, TT = Teachers Teaching, DR = Diversity and Richness, AAc = Applicability and Accessibility, AF = Assessment and Feedback.

In the domain of dance skills, experts supported integrating modern techniques with a mean score of 4.30, and recognized the importance of improving students' overall performance, which scored 4.88, as well as ensuring an appropriate assessment of techniques at 4.43, all showing a consensus of "Congruent." However, they showed incongruence regarding balancing the teaching approach, which received a lower mean of 3.80, reflecting a lack of agreement on how to best structure a balanced curriculum. Regarding aesthetic ability, the dance aesthetics curriculum was highly valued with a mean of 4.53, while developing aesthetic awareness reached 4.76, and defining aesthetic characteristics achieved 4.52, all with "Congruent" consensus. In contrast, the item on encouraging aesthetic reflection scored only 3.75 and was categorized as "Incongruent," suggesting that experts remain divided on strategies to nurture students' aesthetic thinking.

In the areas of creative expression and emotional development, inspiring creativity received a high mean of 4.64, while the effectiveness of students' creative expression was scored even higher at 4.73, both rated as "Congruent," highlighting their essential role in empowering students to innovate through dance. Emotional competence was similarly affirmed, with expressing emotions, enhancing emotional intelligence, and recognizing emotions achieving means of 4.71, 4.67, and 4.82 respectively, showing strong expert consensus. Social responsibility also demonstrated high agreement, with respect for diverse cultures scoring 4.81 and the promotion of social values reaching 4.77. Cultural background factors were likewise strongly endorsed, with experts highlighting an understanding of ethnic minority perspectives, valuing minority language and artistic expression (mean 4.69), and encouraging students to explore related topics (mean 4.50), all achieving "Congruent" consensus.

Other areas, such as dance practice, were rated strongly on cultivating basic movements and styles (mean 4.80), rhythmic and expressive elements (mean 4.56), clear technique explanations (mean 4.66), and promoting physical fitness (mean 4.40), although improvisation skills scored lower at 3.82 and were classified as "Incongruent," suggesting challenges in structuring or assessing improvisation in practice. Regarding individual student factors, experts agreed on strategies to attract attention (mean 4.63), meet diverse needs (mean 4.75), encourage free expression (mean 4.78), and offer personalized feedback (mean 4.50), but stimulating creativity remained complex with a mean of 3.95 and "Incongruent" consensus. Teaching methods such as varied strategies (mean 4.80), combining theory and practice (mean 4.74), and using VR (mean 4.61) were positively received, though teamwork scored somewhat lower at 4.35. Teaching resources showed high ratings for diversity and richness, with dance video diversity achieving 4.87 and cultural content 4.76, while language appropriateness scored slightly lower at 3.96. In the area of assessment and feedback, experts endorsed self-assessment tools (mean 4.63), timely feedback (mean 4.66), individualized instruction (mean 4.62), and fair evaluation (mean 4.64), though the usefulness of case studies was less agreed upon with a mean

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of 3.58. Overall, while most elements were strongly supported, aspects such as balancing teaching methods, encouraging aesthetic reflection, fostering improvisation, and effectively using case studies require further refinement to reach a stronger consensus and enhance curriculum design.

4.3. Third Round

Re-evaluation After the second round of expert consultation, the expert consultation questionnaire II of the second round was formed by analyzing the judgmental data of the experts, collecting and collating the modification opinions, and adjusting the indicator items at all levels in the evaluation indicator system. In order to familiarize the experts with the study and revise the indicator system again, the selected experts were the same as the experts in the first round of consultation, and the feedback from the experts of questionnaire II is shown in tables 2.

Table 2. Summary of Expert Feedback on Dance Course Objectives, Content, Methods, and Resources (questionnaire II)

Category	Item	Mean	Consensus	Category	Item	Mean	Consensus
CI	Enhance students' cultural identity	4.60	Congruent	IS	Attract students' attention	4.53	Congruent
CI	Historical/cultural context integration	4.68	Congruent	IS	Classroom supports bold expression	4.68	Congruent
CI	Intercultural communication	4.50	Congruent	IS	Personalized instruction and feedback	4.59	Congruent
CI	Nation-modern culture link	4.61	Congruent	IS	Stimulate creativity and expression	4.74	Congruent
CI	Cultural diversity	4.55	Congruent	TT	Varied instructional strategies	4.78	Congruent
DS	Overall performance ability	4.88	Congruent	TT	Traditional-modern method integration	4.55	Congruent
AA	Dance aesthetics program importance	4.53	Congruent	TT	Effective interactive methods	4.78	Congruent
AA	Develop aesthetic awareness	4.76	Congruent	TT	Use of multimedia and VR	4.65	Congruent
AA	In-depth aesthetic characteristics	4.52	Congruent	DR	Dance video diversity	4.77	Congruent
ED	Express emotions	4.71	Congruent	DR	Covers history, culture, traditions	4.72	Congruent
ED	Recognize and understand emotions	4.82	Congruent	DR	Props and costumes included	4.65	Congruent
SR	Respect different national cultures	4.81	Congruent	DR	Electronic resources accessible	4.89	Congruent
SR	Promote positive social energy	4.77	Congruent	DR	Local culture reflected in resources	4.73	Congruent
CB	Ethnic minority background	4.85	Congruent	AAc	Accessible resources	4.81	Congruent
CB	Respect and recognition of cultures	4.60	Congruent	AAc	Aligned with course objectives	4.91	Congruent
CB	Linguistic/artistic expression	4.69	Congruent	AAc	High-quality credible information	4.78	Congruent
CB	Explore related topics	4.50	Congruent	AF	Self-assessment tools	4.65	Congruent
DP	Basic movements and styles	4.80	Congruent	AF	Timely feedback mechanism	4.67	Congruent
DP	Cultural symbolism in dance	4.81	Congruent	AF	Individualized instruction support	4.64	Congruent
				AF	Specific performance advice	4.73	Congruent
				AF	Fair assessment resources	4.59	Congruent
				AF	Assessment complements resources	4.81	Congruent
				AF	Teacher data collection for improvement	4.63	Congruent

According to the expert opinions in Questionnaire II, the scores were all above 4.5, with an average score of 4.63, a minimum score of 4.50, and a maximum score of 4.91, indicating that all indicators were significant; the standard deviation of each indicator item ranged from 0 to 1, and were all less than 1, indicating that the expert opinions were relatively concentrated. Based on the results, Experts will develop Questionnaire III for the final round of evaluation. Comparing the results of the third round with the second round, it was found that the second round's mean value had increased, the standard deviation had decreased, the experts' scores were less discrete, their opinions were more concentrated, and the trend was stable.

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4.4. Round 4

The reports were resolved, and Questionnaire 3 was developed and sent to the bookmakers for evaluation in Round 4 based on the results of the first three rounds of expert evaluations. The results of the expert evaluations are shown in tables 3. The data presented in table 3 indicate that factors related to curriculum objectives play a crucial role in shaping student feedback. Dance is recognized as contributing significantly to preserving national cultural heritage, strengthening students' cultural identity, promoting the positive effects of cross-cultural communication, and emphasizing the relationship between national traditions and contemporary culture. Additionally, the importance of dance aesthetics courses was highlighted. These elements were confirmed by experts at rates ranging from 87% to 100%, demonstrating their strong acknowledgment of how course objectives support students' cultural identity, aesthetic abilities, emotional development, and sense of social responsibility.

Factors related to teaching content were also influential. These included a deep understanding of the cultural background and values of ethnic minorities, the promotion of respect for and recognition of ethnic cultures, the representation of regional cultural characteristics, the emphasis on minority languages and artistic expressions, students' mastery of basic dance techniques and styles, and an understanding of the cultural symbolism inherent in dance movements. Expert validation for these aspects ranged from 90% to 100%, indicating a high level of professional endorsement for their effectiveness in supporting students' comprehension of ethnic culture and their dance skills.

Table 3. Consolidated Expert Confirmation of Dance Course Objectives, Content, Methods, and Resources (questionnaire III)

Category	Item	Confirmation (%)	Dis-confirmation (%)	Reject (%)	Category	Item	Confirmation (%)	Dis-confirmation (%)	Reject (%)
CI	Dance transmits national culture	100	0	0	IS	Classroom supports bold expression	94	0	6
CI	Enhance students' cultural identity	92	4	4	IS	Teaching stimulates creativity and expression	98	0	2
CI	Intercultural communication learning	87	6	7	TT	Diverse and effective instructional strategies	100	0	0
CI	Nation-modern culture relationship	94	6	0	TT	Combine traditional and modern methods	94	6	0
AA	Dance aesthetics program importance	95	2	3	TT	Effective interactive teaching methods	90	5	5
AA	Develop aesthetic sense	100	0	0	TT	Use of multimedia and technology tools	88	6	6
ED	Helping students express emotions	94	4	2	DR	Dance video material covers minority styles	100	0	0
ED	Recognize and understand emotions	88	6	6	DR	Props and costumes enhance experience	100	0	0
SR	Respect for national cultures	94	0	6	DR	Electronic resources easily accessible	94	3	3
SR	Promote positive social energy	88	6	5	DR	Reflect local culture in resources	98	2	0
CB	Cultural background of minorities	100	0	0	AAc	Instructional resources easy to access	94	3	3
CB	Respect and recognition of cultures	95	0	5	AAc	Resources align with course objectives	96	6	0

 ISSN 2723-6471

CB	Integrate traditional customs	98	2	0	AAc	High quality, credible resources	94	0	6
CB	Regional characteristics reflected	100	0	0	AF	Self-assessment tools included	96	2	2
CB	Linguistic/artistic expression	100	0	0	AF	Timely and effective feedback	94	0	6
DP	Master basic dance techniques	94	0	6	AF	Individualized instruction and assessment	94	6	0
DP	Understand cultural symbolism	90	5	5					

Factors related to teaching methods comprised a classroom atmosphere that supports student expression, pedagogical strategies that foster creativity and communication, the application of diverse and effective instructional strategies, the integration of traditional and modern teaching methods to improve learning outcomes, the use of engaging interactive techniques, and the incorporation of multimedia and technology. These elements were confirmed by experts at rates ranging from 88% to 100%, reflecting their recognition of instructional methods as valuable in enhancing students' learning and development.

Similarly, factors related to teaching and learning resources were highlighted, including the use of dance video materials representing a wide range of minority styles, the incorporation of physical props and costumes to enrich the educational experience, the availability of electronic resources that are easy for students to access, and the design of resources that emphasize local characteristics and cultural relevance. Other endorsed features included the accessibility and alignment of resources with curriculum goals, their high quality and credibility, the presence of practical self-assessment tools, prompt and effective feedback mechanisms, and the ability of educators to use these resources for individualized instruction and evaluation. The expert recognition rate for these elements ranged from 94% to 100%, signifying strong professional agreement that these resources effectively meet students' learning needs and support teaching practices. Although these expert judgments did not include quantitative measures such as consistency indices, the high confirmation rates nonetheless reflect a substantial consensus regarding the complex factors that shape student perceptions and responses to the course.

4.5. Results of the Study and Statistical Analysis

The results of the Delphi method study reflect the perspectives of 17 experts, considered authoritative and representative in line with Hanafin (2004). To enhance the rigor and comprehensiveness of the findings, the researcher collected additional expert opinions through semi-structured interviews and questionnaires and validated the results using SPSS software. This approach aimed to ensure the extensiveness and credibility of the research. In designing the questionnaire, careful consideration was given to measurement instrument selection, as suggested by Brace (2018), recognizing its influence on research reliability. The questionnaire was divided into three parts, incorporating a five-point Likert scale based on star ratings to measure agreement. Independent variables included course objectives, teaching content, teaching methods, and teaching resources, while the dependent variable was student feedback. Levels of agreement were classified from strongly agree to strongly disagree, with scoring indices ranging from 5 to 1.

The sample was collected through the Questionnaire Star platform, yielding 402 valid responses and a 100% response rate. As summarized in table 4, the majority of respondents were female (89.05%), and most were Han ethnicity (82.34%), reflecting the demographic characteristics of dance studies in China. Other ethnic groups were also represented, enhancing cultural perspectives in the sample. All participants were enrolled in a dance studies program, which explains the high female representation and supports the relevance of the research context. The grade distribution among juniors (34.33%), sophomores (33.58%), and seniors (32.09%) was balanced, allowing insights across academic years.

Table 4. Basic information about the sample population participating in the survey 3

Variable	Category	Count	Proportion (%)
Gender	Female	358	89.05%

 ISSN 2723-6471

	Male	44	10.95%
Ethnicity	Han	331	82.34%
	Bai	12	2.99%
	Wa	10	2.49%
	Hani	9	2.24%
	Yi	8	1.99%
	Dai	6	1.49%
	Yao	5	1.24%
	Miao	5	1.24%
	Tibetan	4	1.00%
Major	Dance Studies	402	100.00%
Grade	Junior	138	34.33%
	Sophomore	135	33.58%
	Senior	129	32.09%

Table 5 summarizes descriptive statistics for the questionnaire items, showing mean scores generally between 2.7 and 3.1, indicating moderate satisfaction levels without extreme bias. Standard deviations ranged between 0.6 and 0.8, suggesting that responses were fairly consistent. Most skewness and kurtosis values were close to zero, indicating a near-normal distribution of responses, although "Student feedback 5" showed higher kurtosis (1.443), suggesting a cluster of higher ratings by a subset of respondents.

Table 5. Descriptive statistics for each variable

Item	Mean	Std. Error	Std. Dev	Skewness	Skew. SE	Kurtosis	Kurt. SE
Course objectives 1	3.06	0.032	0.644	0.165	0.122	0.380	0.243
Course objectives 2	2.95	0.039	0.787	0.145	0.122	-0.252	0.243
Course objectives 3	2.76	0.038	0.766	0.267	0.122	0.115	0.243
Course objectives 4	2.95	0.040	0.808	0.152	0.122	-0.166	0.243
Course objectives 5	3.01	0.038	0.754	0.046	0.122	-0.113	0.243
Content 1	2.97	0.041	0.820	-0.017	0.122	-0.246	0.243
Content 2	3.15	0.039	0.780	-0.018	0.122	-0.027	0.243
Content 3	3.16	0.033	0.652	0.150	0.122	0.328	0.243
Content 4	2.82	0.037	0.746	0.049	0.122	0.073	0.243
Content 5	2.93	0.037	0.735	-0.113	0.122	-0.401	0.243
Teaching methods 1	2.88	0.037	0.743	0.118	0.122	-0.021	0.243
Teaching methods 2	3.06	0.039	0.779	-0.013	0.122	0.027	0.243
Teaching methods 3	3.04	0.038	0.760	0.071	0.122	-0.013	0.243
Teaching methods 4	3.00	0.038	0.757	0.104	0.122	-0.422	0.243
Teaching methods 5	3.07	0.040	0.802	-0.068	0.122	-0.428	0.243
Teaching resources 1	2.83	0.040	0.796	0.053	0.122	0.004	0.243
Teaching resources 2	2.93	0.040	0.801	0.122	0.122	-0.249	0.243
Teaching resources 3	2.78	0.038	0.756	0.149	0.122	-0.055	0.243
Teaching resources 4	2.90	0.043	0.859	0.122	0.122	-0.149	0.243
Teaching resources 5	2.78	0.041	0.829	0.142	0.122	-0.243	0.243
Student feedback 1	2.74	0.031	0.613	0.082	0.122	0.489	0.243
Student feedback 2	2.83	0.033	0.662	-0.052	0.122	0.078	0.243
Student feedback 3	2.82	0.035	0.701	0.045	0.122	0.206	0.243
Student feedback 4	2.75	0.031	0.629	0.002	0.122	0.536	0.243
Student feedback 5	3.12	0.030	0.596	0.241	0.122	1.443	0.243
Number of cases	402						

Table 6 provides the reliability analysis results, showing Cronbach's alpha coefficients above 0.9 for most constructs, which indicates excellent internal consistency. The Corrected Item-Total Correlations (CITC) were also high, confirming that each item strongly contributed to its corresponding dimension. These findings support the conclusion that the questionnaire was a highly reliable tool for measuring student perceptions of course objectives, content, methods, and resources in minority dance education.

Table 6. Confidence Analyses

Variable	Item	CITC	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Course Objectives	Course objectives 1	0.733	0.909	0.952
	Course objectives 2	0.816	0.891	
	Course objectives 3	0.797	0.895	

 ISSN 2723-6471

	Course objectives 4	0.803	0.894	
	Course objectives 5	0.788	0.897	
Content	Content 1	0.789	0.898	0.918
	Content 2	0.798	0.894	
	Content 3	0.775	0.901	
	Content 4	0.791	0.896	
	Content 5	0.785	0.897	
Teaching Methods	Teaching methods 1	0.810	0.901	0.822
	Teaching methods 2	0.796	0.904	
	Teaching methods 3	0.792	0.905	
	Teaching methods 4	0.791	0.905	
	Teaching methods 5	0.794	0.904	
Teaching Resources	Teaching resources 1	0.783	0.901	0.919
	Teaching resources 2	0.779	0.902	
	Teaching resources 3	0.812	0.896	
	Teaching resources 4	0.805	0.897	
	Teaching resources 5	0.772	0.903	
Student Feedback	Student feedback 1	0.753	0.874	0.898
	Student feedback 2	0.748	0.875	
	Student feedback 3	0.783	0.867	
	Student feedback 4	0.739	0.877	
	Student feedback 5	0.718	0.882	

Table 7 displays the results of the KMO and Bartlett's tests, where the KMO value was 0.955 and the significance level of Bartlett's test was below 0.001, indicating the data were well-suited for factor analysis. The high KMO confirms sufficient inter-variable correlations, while the significant Bartlett's test supports the hypothesis that these correlations are statistically meaningful, thus validating the appropriateness of factor analysis for this dataset.

Table 7. KMO and Bartlett Test Results

Measure	Value
KMO Measure of Sampling Adequacy	0.955
Bartlett's Test of Sphericity Approx. Chi-Square	7451.747
Degrees of Freedom	300.000
Significance (p-value)	0.000

Table 8 presents the results of the common factor variance analysis for each item in the measurement model. The initial communalities were uniformly set at 1.000, and the refined communalities after factor extraction ranged from 0.677 to 0.792 across all variables. This demonstrates that each item retained a high proportion of shared variance with its corresponding construct after extraction, exceeding the common interpretive threshold of 0.5. Therefore, no indicators needed to be eliminated, and all items were confirmed as meaningful contributors to their respective latent factors. These results support the adequacy of the measurement structure and strengthen the validity of the factor model developed for minority dance education.

Table 8. Common Factor Variance

Items	Initial	Refine	Items	Initial	Refine
Course objectives 1	1.000	0.680	Teaching resources 1	1.000	0.747
Course objectives 2	1.000	0.792	Teaching resources 2	1.000	0.753
Course objectives 3	1.000	0.765	Teaching resources 3	1.000	0.781
Course objectives 4	1.000	0.768	Teaching resources 4	1.000	0.772
Course objectives 5	1.000	0.757	Teaching resources 5	1.000	0.732
Content 1	1.000	0.751	Student feedback 1	1.000	0.720
Content 2	1.000	0.772	Student feedback 2	1.000	0.715
Content 3	1.000	0.747	Student feedback 3	1.000	0.759
Content 4	1.000	0.752	Student feedback 4	1.000	0.696
Content 5	1.000	0.761	Student feedback 5	1.000	0.677
Teaching methods 1	1.000	0.777			
Teaching methods 2	1.000	0.760			
Teaching methods 3	1.000	0.763			
Teaching methods 4	1.000	0.754			

 ISSN 2723-6471

Teaching methods 5	1.000	0.763

Table 9 summarizes the total variance explained by the extracted components through principal component analysis. The first five components accounted for a cumulative variance of 74.859%, with the first component alone explaining 46.376% of the total variance, indicating it captured the most significant dimension in the data. Subsequent components explained progressively smaller proportions of variance, as expected, while still cumulatively exceeding acceptable thresholds for factor retention. Components beyond the sixth contributed less than 2% each, suggesting diminishing explanatory value. Overall, these results confirm that the extracted factors represent a substantial proportion of the dataset's structure, supporting the stability and interpretability of the factor solution for analyzing the instructional framework in minority dance education.

Table 9. Total Variance Explained

Component	Eigenvalue	% of Variance	Cumulative %	Component	Eigenvalue	% of Variance	Cumulative %
1	11.594	46.376	46.376	14	0.322	1.287	88.741
2	1.922	7.689	54.066	15	0.310	1.241	89.982
3	1.867	7.467	61.533	16	0.303	1.212	91.195
4	1.830	7.320	68.853	17	0.284	1.138	92.332
5	1.502	6.007	74.859	18	0.282	1.129	93.461
6	0.466	1.864	76.724	19	0.274	1.098	94.559
7	0.437	1.750	78.474	20	0.264	1.056	95.614
8	0.418	1.672	80.145	21	0.245	0.981	96.596
9	0.388	1.553	81.699	22	0.239	0.956	97.552
10	0.380	1.521	83.220	23	0.211	0.843	98.395
11	0.368	1.474	84.694	24	0.211	0.842	99.238
12	0.355	1.421	86.114	25	0.191	0.762	100.000
13	0.335	1.340	87.454				

Table 10 shows the rotated factor loading matrix, demonstrating how questionnaire items clustered according to their theoretical constructs.

Table 10. Rotation Matrix for Formal Data

Item	Component 1	Component 2	Component 3	Component 4	Component 5
Teaching methods 1	0.780				
Teaching methods 2	0.777				
Teaching methods 3	0.797				
Teaching methods 4	0.767				
Teaching methods 5	0.794				
Content 1		0.768			
Content 2		0.805			
Content 3		0.789			
Content 4		0.755			
Content 5		0.814			
Teaching resources 1			0.772		
Teaching resources 2			0.799		
Teaching resources 3			0.788		
Teaching resources 4			0.776		
Teaching resources 5			0.751		
Course objectives 1				0.722	
Course objectives 2				0.810	
Course objectives 3				0.778	
Course objectives 4				0.779	
Course objectives 5				0.795	
Student feedback 1					0.766
Student feedback 2					0.779
Student feedback 3					0.809
Student feedback 4					0.737
Student feedback 5					0.760

 ISSN 2723-6471

Items related to course objectives loaded clearly on the fourth component, content items on the second, teaching methods on the first, resources on the third, and student feedback on the fifth. This pattern confirms the theoretical structure of the questionnaire and supports the distinctiveness of each dimension within the instructional model for minority dance. Table 11 presents key structural model fit indices, including χ^2/df, GFI, AGFI, CFI, TLI, and RMSEA, all of which met or exceeded commonly accepted thresholds. These results suggest that the proposed model has a good fit with the observed data, demonstrating its structural validity and supporting the soundness of the data-driven instructional framework developed for minority dance education.

Table 11. Fit Indices of Structural Models in This Study

Fit Index	Test Results	Threshold Criteria	Best Criteria	Reference
χ^2	0	The smaller, the better	The smaller, the better	—
df	265	—	—	—
χ^2/df	0.985	$1 < \chi^2/df < 5$	$1 < \chi^2/df < 3$	Carmines and McIver (1981)
GFI	0.951	> 0.8	> 0.9	Scott and Bruce (1994)
AGFI	0.940	> 0.8	> 0.9	—
CFI	1.000	> 0.8	> 0.9	Bagozzi and Yi (1988)
TLI (TAG?)	1.001	> 0.8	> 0.9	Tucker and Lewis (1973)
NFI	0.966	> 0.8	> 0.9	Fan, Thompson and Wang (1999)
IFI	1.001	> 0.8	> 0.9	Bollen (1989)
RMSEA	0	< 0.08	< 0.05	Baumgartner and Homburg (1995)

Table 12 reports the Average Variance Extracted (AVE) and Composite Reliability (CR) values for each construct, with all AVE values exceeding 0.5 and all CR values surpassing 0.7. This confirms strong convergent validity and excellent internal consistency, indicating that the constructs were reliably and accurately measured and that the questionnaire effectively captured the intended educational dimensions.

Table 12. Measurements of AVE and CR

Construct	Item	Standardized Loading	CR	AVE
Course Objectives	Courseobjectives5	0.828	0.918	0.690
	Courseobjectives4	0.851		
	Courseobjectives3	0.840		
	Courseobjectives2	0.857		
	Courseobjectives1	0.775		
Content	Content5	0.820	0.917	0.689
	Content4	0.841		
	Content3	0.815		
	Content2	0.841		
	Content1	0.835		
Methods	Teachingmethods5	0.832	0.922	0.702
	Teachingmethods4	0.836		
	Teachingmethods3	0.828		
	Teachingmethods2	0.838		
	Teachingmethods1	0.856		
Resources	Teachingresources5	0.816	0.919	0.694
	Teachingresources4	0.852		
	Teachingresources3	0.856		
	Teachingresources2	0.814		
	Teachingresources1	0.826		
Student Feedback	Studentfeedback1	0.807	0.898	0.639
	Studentfeedback2	0.795		
	Studentfeedback3	0.834		
	Studentfeedback4	0.796		
	Studentfeedback5	0.762		

Note: Course =Course objectives, Methods = Teaching methods, Resources Teaching resources, Student Student feedback.

Table 13 details the discriminant validity checks, comparing the square roots of AVE with the inter-construct correlations. Since all square roots of AVE exceeded their corresponding correlation coefficients, each construct was shown to be clearly distinct from the others. This demonstrates that the questionnaire maintained strong discriminant validity, ensuring that the measured dimensions did not overlap and were conceptually independent.

 ISSN 2723-6471

Table 13. Distinguishing Validity Measures

	AVE	Student	Resources	Methods	Content	Course
Student	0.639	**0.799**				
Resources	0.694	0.538	**0.833**			
Methods	0.702	0.574	0.616	**0.838**		
Content	0.689	0.532	0.571	0.586	**0.830**	
Course	0.690	0.580	0.613	0.550	0.577	**0.831**

Note: Course =Course Objectives, Methods =Teaching Methods, Resources Teaching Resources, Student Student Feedback.

This study evaluated the discriminant validity of five primary instructional constructs (course objectives, instructional content, instructional methods, instructional resources, and student feedback) by analyzing their AVE values and inter-construct correlations, with all AVE scores exceeding the recommended threshold of 0.5, indicating acceptable convergent validity and confirming that the measurement items effectively represented their respective constructs; for instance, teaching methods achieved an AVE of 0.702, while student feedback reached 0.639, demonstrating reasonable internal consistency, and the square root of each construct's AVE was higher than its correlations with other constructs, confirming their distinctiveness, such as the square root of the AVE for instructional resources (0.833) exceeding its correlation with student feedback (0.538) and teaching methods (0.616), supporting clear differentiation, while student feedback had an AVE square root of 0.799, higher than its correlation with course objectives (0.580), highlighting sufficient conceptual separation despite related educational roles; further, the Delphi technique complemented these results by gathering the views of 17 experts through semi-structured interviews across five domains—course objectives, content, methods, resources, and student evaluations—and after four rounds of expert consultation, a strong consensus emerged, which was then operationalized in a student questionnaire completed by 402 respondents with a 100% valid response rate and analyzed through SPSS and AMOS software, revealing a high Cronbach's alpha of 0.952 confirming excellent internal consistency, a Kaiser-Meyer-Olkin value of 0.952, and significant Bartlett's test results validating the suitability of the data for factor analysis, while confirmatory factor analysis further confirmed the soundness of the measurement model, demonstrating that the instrument is robust, valid, and reliable for evaluating instructional frameworks in minority dance education.

4.6. Discussion

This study used the Delphi method to systematically identify and validate key factors influencing the integration of an innovative instructional model into minority dance curricula. The Delphi rounds involved 17 experts and achieved consensus across five domains: course objectives, instructional content, instructional methods, instructional resources, and student evaluations. These constructs were then operationalized through a questionnaire completed by 402 students with a 100% valid response rate, demonstrating high reliability with a Cronbach's alpha of 0.952. The Kaiser-Meyer-Olkin value of 0.952 and significant Bartlett's test results supported the suitability of the data for factor analysis, and confirmatory factor analysis further confirmed the measurement model's validity. Path analysis results are summarized in table 14.

Table 14. Path analysis

		Path	Estimate	S.E.	CR.	P
Course objectives	→	Student feedback	0.275	0.050	4.372	***
Content	→	Student feedback	0.151	0.050	2.456	0.014
Teaching methods	→	Student feedback	0.258	0.047	4.077	***
Teaching resources	→	Student feedback	0.125	0.047	1.922	0.055

These results showed that course objectives ($\beta = 0.275$, $p < 0.001$), content ($\beta = 0.151$, $p = 0.014$), and teaching methods ($\beta = 0.258$, $p < 0.001$) significantly influenced student feedback, while teaching resources ($\beta = 0.125$, $p = 0.055$) had a smaller, though potentially meaningful, effect. These findings highlight the critical role of clear educational objectives, relevant content, and adaptive teaching strategies in improving student evaluations, whereas the role of resources deserves deeper investigation.

The proposed hybrid instructional framework, visualized in figure 1, focuses on enhancing cultural identity, developing dance skills, fostering aesthetic appreciation, and encouraging creative expression. It combines online and offline

teaching: online through multimedia, virtual reality tools, network-based recordings, and peer reviews, and offline through interdisciplinary activities, interactive methods, and group discussions. Culturally authentic props, accessible digital platforms, and appropriate performance venues further support this blended approach, promoting student autonomy and engagement. Nonetheless, several challenges remain, including regional variation, technological limitations, instructors' digital competencies, and differences in student backgrounds, learning preferences, and foundational skills. The sustainability of educational materials, such as costumes and props, also requires closer examination. Future research should explore balancing modernization with the preservation of cultural authenticity to meet student needs while respecting heritage. Collaboration among stakeholders, advances in self-regulated learning, and robust support systems will be essential to sustaining minority dance education. Ultimately, this study offers a valuable, evidence-based framework for developing culturally responsive, technology-enhanced pedagogy that promotes creativity and modernization while safeguarding the rich traditions of minority dance [21].

5. Conclusions

In conclusion, this research systematically developed and validated a hybrid instructional framework for minority dance education, combining Delphi expert consultation with rigorous statistical analyses using SPSS and AMOS to ensure scientific credibility. The findings confirmed that course objectives, instructional content, teaching methods, and educational resources all significantly influence student feedback, with course objectives and methods having particularly strong effects. The proposed model integrates online technologies (such as multimedia and virtual reality) with offline interactive and interdisciplinary strategies to enhance cultural identity, dance skills, aesthetic appreciation, and creative expression, supported by robust feedback mechanisms. Despite challenges relating to regional limitations, technological infrastructure, and cultural adaptation, this study demonstrates that a data-driven, blended approach can enrich minority dance education, foster cultural preservation, and promote modernized, learner-centered pedagogical practices that can serve as a replicable model for future educational innovation.

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