

Review Article**Research Progress and Reform Path of Bamboo Flute Professional Training Model in Universities under the Background of New Liberal Arts**

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Abstract

The development of the new liberal arts, which emphasizes interdisciplinary integration, cultural inheritance and innovation, and practical ability cultivation, has put forward clear requirements for the reform and optimization of the talent training system of bamboo flute majors in Chinese universities. Based on a number of high-quality academic studies, this paper adopts a systematic approach to review the research progress of university bamboo flute professional training through literature review and inductive analysis, discusses the inherent problems of the existing training model, and identifies the targeted reform paths to meet the development requirements of the new liberal arts. The findings show that the current research on university bamboo flute talent cultivation has formed a three-dimensional core framework of “technique training - cultural immersion - practical innovation”, but there are still prominent deficiencies in the curriculum system, teaching methods, practical platforms and assessment system. In the context of new liberal arts, it is essential to construct a new training model that takes cultural inheritance as the core, interdisciplinary integration as the support, digital empowerment as the path, and practical innovation as the goal. This can be realized through four key measures: optimizing the interdisciplinary curriculum system, implementing the concept of digital empowerment in classroom teaching, building diversified practical platforms, and improving the comprehensive quality assessment system.

Keywords

New Liberal Arts, Bamboo flute major in universities, Training model, Research progress, Reform path

1. Introduction**1.1. Research Background**

The construction of the new liberal arts is a core strategic initiative in the field of Chinese higher education, whose core connotation is centered on three key dimensions: breaking disciplinary boundaries to realize interdisciplinary integration, promoting the inheritance and innovative development of Chinese excellent traditional culture, and cultivating high-quality talents with comprehensive practical ability, innovative thinking and humanistic literacy (Sha, 2025; Zhong, 2022). This concept provides a clear theoretical guidance and reform direction for the transformation and upgrading of the training model of bamboo flute, a representative of Chinese traditional instrumental music, in universities. University programs are also the main bastions in the cultivation of performers, researchers, and disseminators of the bamboo flute with its more than 8,000 years of heritage (Ye, 2024a; Yun, 2025). The level of their training has a direct effect on the inheritance and development of the art.

At present, with the backdrop of the new liberal arts, the development of professionals who specialize in the bamboo flute in colleges and universities is presented with numerous opportunities and challenges: the issues of the traditional training model, including the focus on the technique training of the curriculum system, lack of cultural connotations exploration, poor interdisciplinarity, and low level of digital teaching, have become more relevant (Zhang and Yodwised, 2024; Wang, 2024; Xu, 2023).

1.2. Significance of the Research

Theoretical Importance: The present paper incorporates bamboo flute studies into the development of a talent cultivation model in the context of the new liberal arts which adds substance to the ethnic instrumental music theory and provides fresh interdisciplinary perspectives. **Practical Importance:** It also helps to overcome the flaws in the existing models and adhere to the new liberal art by suggesting feasible reforms that can help in curriculum optimization, teaching innovation, and improving practice in university bamboo flute programs.

1.3. Research Questions

The present paper addresses the following two main research questions: Firstly, where does the current research stand in the university training of bamboo flutists and what key results and fundamental frameworks have been developed? Secondly, in the context of the new liberal arts, what are the major issues with the training model of bamboo flutists in universities and how can we revamp and develop a new training model that is responsive to the requirements of the era?

2. Methods

2.1. Research Design

This paper adopts a systematic literature review combined with inductive qualitative analysis, which is consistent with the standardized review framework in the field of music education research. The research procedure is carried out in four sequential steps: First, a systematic literature retrieval and screening is conducted to collect high-quality academic studies focusing on the history, cultural connotation, performance techniques, teaching practice, interdisciplinary integration, and digital application of bamboo flute art. Second, the included literature is systematically sorted and critically discussed to summarize the overall research progress of university bamboo flute professional training. Third, aligned with the core connotation and construction requirements of the new liberal arts, the core deficiencies and pain points of the current training model are identified and analyzed. Finally, based on the literature findings, the targeted reform path and implementation plan of bamboo flute talent training under the background of new liberal arts are proposed.

2.2. Content Organization and Analysis

2.2.1. Literature Retrieval and Screening

This study conducted a systematic literature retrieval in both Chinese and English academic databases, including CNKI (China National Knowledge Infrastructure), Wanfang Data, Web of Science, Scopus, and arXiv, with a retrieval time range from January 2018 to December 2025. The core retrieval terms were set as: (“bamboo flute” OR “Chinese bamboo flute”) AND (“talent training” OR “training model” OR “higher education” OR “teaching reform” OR “new liberal arts”).

2.2.2. Data Extraction

A standardized data extraction table was developed for this review, and data were extracted from the included studies in four dimensions: research theme, core viewpoints, research methods, and research conclusions. The extracted research themes covered five categories: history and culture of bamboo flute, bamboo flute performance techniques, bamboo flute teaching practice, interdisciplinary integration of bamboo flute, and digital application of bamboo flute. The core viewpoints focused on the four core elements of professional training: curriculum system, teaching methods, practice platforms, and evaluation system. The validity of the included literature was verified by the standardization of research methods and the reliability of research conclusions. All data extraction was

completed independently by two researchers, and the extracted results were cross-checked; discrepancies were resolved through discussion with a third researcher to ensure the accuracy of the extracted data.

2.2.3. Data Analysis

This study adopted thematic inductive analysis based on the qualitative research framework to sort and analyze the extracted data, and the analysis process was carried out in three sequential steps: First, open coding was conducted on the extracted data, and the included literature was classified into four core themes (history and culture, performance technique, teaching practice, interdisciplinary and digital integration) to systematically sort out the core research findings of each theme. Second, focused coding was carried out to compare the literature findings with the core requirements of new liberal arts construction, and the core problems of the current training model were analyzed from four dimensions: curriculum system, teaching methods, practice platforms, and assessment system. Finally, axial coding was used to refine the logical relationship between the research findings and reform directions, and the targeted reform path of bamboo flute professional talent training under the background of new liberal arts was summarized and formulated. The coding framework was revised iteratively during the analysis process, and the inter-coder reliability test was conducted on 30% of the included studies, with a Cohen's kappa coefficient of 0.86, indicating good coding consistency and research reliability.

Data Analysis: The inductive analysis sorted the data. Initially, the literature was divided into themes (history, technique, teaching, integration) to review the main findings. Secondly, the analysis of the existing model problems was conducted across the curriculum, teaching, practice platforms, and assessment in line with new liberal arts. Lastly, the ways of reforming the cultivation of bamboo flute talent within the context of the new liberal arts were formulated.

3. Results

3.1. Research Progress on the Cultivation of Bamboo Flute Professionals in Higher Education Institutions

Through systematic analysis, it is shown that university bamboo flute training is based on four elements that make up a framework called technique-culture-innovation.

The study of history and culture forms a basis: Yun (2025) did a cross-cultural comparison of Chinese and Western flutes and observed that the bamboo flute represents the harmony between man and nature of agricultural civilization whereas the western flute is a

representation of industrial rationality. It provides a sample of how to broaden cultural views in the teaching of talents.

The technique and form reform research offers a technical support: Wang and Zhang (2024) investigated the addition of holes (7-11) to solve the problem of limited range, problems with semitones, and transposition of the traditional six-hole flute. Breath, vibrato, pitch, volume, and overtones have been found by Xu (2023) to be the main acoustic factors. The creativity of composers such as Feng Zicun and Guo Wenjing converted the bamboo flute into an solo instrument improving the level of expressiveness.

The teaching practice research provides references: Yin & Banchongsilpa (2024), who investigated the Hainan University music education students, focused on the individualized teaching, fundamental skills (breathing, tone, fingering), musical perception, rhythm, and developing creativity via secondary/tertiary creation. Cultivating the cultural literacy was emphasized on by Wang Hua (2024) who directed his attention to the ability of students to comprehend the performance style and implications in various cultural environments.

The study of interdisciplinary integration and digital development gives fresh ideas to the training models: The Interactive Rainbow Score interactive visual teaching system, which links pitch to color and note height and enhances the visual-motor correlation with the help of real-time visual feedback, was created by Zhang et al. (2020), improving the effectiveness of learning to read bamboo flute sheet music by 31.1 percent and offering an example of practical digital teaching. Gong et al. (2024) built the ChMusic dataset, which consists of 55 excerpts of 11 traditional Chinese musical instruments (with bamboo flute works included), and offers data to interdisciplinary studies like instrument recognition and bamboo flute music information retrieval, and broadens the sphere of bamboo flute major research.

3.2. Problems in the Current Training Model for Bamboo Flute Professionals in Universities

According to the demands of the new liberal arts development and the findings of the literature review, the existing model of talent cultivation among the university bamboo flute majors has the following four significant issues:

The curriculum is overly simple and lacks interdisciplinary integration: the latest curriculum is centered on the traditional technique training and repertoire instruction with inadequate coverage of music theory, cultural studies, and interdisciplinary knowledge (Yin and Banchongsilpa, 2024; Zhang and Yodwised, 2024). There are no interdisciplinary classes that combine bamboo flute with opera, dance, painting, etc., and there are no classes that combine music with computer and digital technology. It leads to the limited knowledge base

of the students and poor interdisciplinary thinking and creativity.

Conventional teaching approach and outdated digital empowerment: The methods of teaching remain largely based on the concept of the teacher demonstrating the student imitating the same, which highlights the repetitive and mechanical aspects of technical training. It also becomes challenging to generate students' learning motivation and engagement, resulting in passive engagement that restricts innovative thinking (Zhang and Yodwised, 2024). Integration of digital teaching technologies is slow. Many teachers do not have access to digital teaching abilities. Digital learning materials like the interactive visual teaching system created by Zhang et al. (2020) and the dataset constructed by Gong et al. (2024) are not popularly applied in university teaching and thus it is hard to cater to the individualized learning preferences of students and the enhancement of teaching quality.

Narrow practical arenas and repetitive practical aspects: The experience in practical work within the field of bamboo flute major is mainly represented by on-campus concerts and final examinations performances, not accompanied by interaction with off-campus art groups and cultural organizations. The students do not have many chances to get involved in mass performances, intercultural interactions, and projects of creative activities (Ye, 2024a; Wang, 2024) which leads to lack of stage experience and poor skills to deal with various performance conditions. Practical forms are also not diverse; they are largely focused on solos and small ensembles and they rarely engage in concertos, cross-discipline cooperation, and performances of original works (Ye, 2024a).

A poor assessment system and absence of all-round quality assessment: It is found that the evaluation system remains largely centered on technical assessment, i.e. it evaluates the level of performance skills and the quality of repertoire completion without proper evaluation indicators of cultural literacy of students, their inter-disciplinary capacity, innovativeness and practicality (Yin and Banchongsilpa, 2024; Zhang and Yodwised, 2024). Students are thus drawn into excessive technical training and pay little attention to the development of comprehensive quality.

4. Discussion

4.1. Core Implications of the Research Findings

This paper shows that the bamboo flute growing in universities has created a framework of a technique-culture-innovation. Historical studies offer cultural background; technical innovations provide assistance; teaching practice offers examples; and interdisciplinary/digital studies offer direction. These results form the basis of reforms in the new liberal arts. Nevertheless, existing models are characterized by strict curricula, old-fashioned ways of

instruction, restricted practice opportunities, and imperfect assessment systems, which are not adequate to the demands of the new liberal arts regarding interdisciplinary integration, digital empowerment, cultural innovation, and practical skills.

4.2. Deepening the Reform Path of Training Model under the Background of New Liberal Arts

In accordance with the research results and the needs of the creation of new liberal arts, the paper suggests four reform directions to develop a new training model that will be based on the cultural heritage, supported by the interdisciplinary integration, motivated by the digital empowerment, and bring results through the practical innovation:

Based on the literature findings that the current curriculum of bamboo flute major is overly simplistic and lacks interdisciplinary integration, this paper proposes to optimize the curriculum system by constructing interdisciplinary integrated course modules: First, consolidate the core course modules, with bamboo flute performance techniques as the core content. The traditional advantageous courses have been preserved together with the gains of reforms in terms of 7-hole and 8-hole flutes incorporated into the curriculum to improve the flexibility of students to various types of bamboo flutes (Wang and Zhang, 2024; Xu, 2023). Secondly, a cultural literacy module has been introduced and the independent courses offered include History of Bamboo Flute Art and Research on the Cultural Connotation of Bamboo Flute and Comparative Study of Regional Bamboo Flute Styles to study the history, culture, and the aesthetic ideas behind the bamboo flute in detail (Ye, 2024a; Ye, 2024b). The course on Comparative Study of Eastern and Western Wind Instrument Cultures has also been included, which presents comparative research findings on Chinese and Western flutes (Yun, 2025) to enhance the knowledge of students about the world. Third, we will increase the interdisciplinary course module and include additional disciplines including Digital Teaching Applications of the Bamboo Flute, Music Information Retrieval and Bamboo Flute Research and Cross-border Creation of Bamboo Flute and Opera. We are going to incorporate the information related to the ChMusic dataset (Gong et al., 2024) and interactive visual teaching system (Zhang et al., 2020) into the curriculum to develop interdisciplinary thinking and digital application abilities among students.

The use of innovative teaching methods and empowering teachers towards digital teaching: To begin with, enhancing conventional teaching strategies through gamification, experiential learning, and heuristic teaching methods. At the skill initiation phase, stimulating students interest through methods like breathing trajectory games and rhythm codes; at the advanced stage, case-based teaching approach and integrating the analysis of classic works to

help students develop a deeper understanding of the meanings of the works and performance skills (Zhang and Yodwised, 2024). Secondly, digital promotion of teaching tools through implementing interactive visual teaching systems like Interactive Rainbow Score and leveraging their real-time visual feedback feature to make sight-reading instruction more effective; the ChMusic database can be used to implement practical teaching activities, including the identification of instruments and the analysis of music, which will develop the digital application skills of students (Chin et al., 2020; Gong et al., 2024).

Diversified practice platforms: Initially, increase the options available on campus by creating ensembles and interdisciplinary studios. Solo, ensemble, and concerto performances should be organized to support the Chinese bamboo flute orchestras (Ye, 2024a) and regular concerts and exhibitions of original works to provide additional opportunities on the stage. Secondly, reinforce out-of-campus collaboration with professional associations, cultural organizations, and opera companies. Involve the students in mass performances, intercultural interactions and community outreach to develop the social service and communication competencies (Wang, 2024).

In order to enhance the assessment process and ensure better ratings of the overall qualities, it is recommended to do the following; Firstly, a multifaceted assessment index system needs to be built that would include technical level, cultural literacy, interdisciplinary capability, innovation capability, and practical capability in the assessment material, and particular assessment criteria need to be developed (Yin and Banchongsilpa, 2024; Zhang and Yodwised, 2024). As an instance, the technical level evaluation encompasses the performance skills and the quality of repertoire completion; The cultural literacy evaluation comprises knowing the background and culture of the bamboo flute and insight into the meanings of the pieces; the innovation ability evaluation involves original works and across-disciplinary creations. The second recommendation is that there must be diversified evaluation strategies incorporating both formative and summative assessments, and comprehensive representation of the learning experiences of students in diverse ways including class performance, practice reports, periodic tests/assessments, and final performances; it is imperative to introduce digital assessment solutions that can be used to follow the progress and achievements of a student with the help of data analysis features of interactive teaching systems in real-time.

4.3. Research Limitations and Future Prospects

This study systematically reviews the core research literature on university bamboo flute professional training, and constructs a reform path aligned with the new liberal arts construction requirements, but there are still three clear limitations that need to be clarified.

First, limited by the scope of systematic review, this study only included 12 high-quality core studies for in-depth analysis, and the sample size of the included literature is relatively small, which may lead to the comprehensiveness of the research findings being affected to a certain extent, and the generalizability of the proposed reform path needs to be further verified. Second, this study is based on a systematic literature review and inductive qualitative analysis, and has not collected first-hand empirical data through on-site investigation, interviews or teaching experiments. Therefore, the proposed reform measures are mainly based on the existing literature findings and theoretical deduction, and their practical applicability and implementation effect in real teaching scenarios need to be further empirically tested. Third, this study mainly focuses on the overall training model reform of bamboo flute majors in Chinese universities, and does not conduct targeted analysis on the heterogeneous needs of different types of universities (such as professional conservatories, comprehensive universities, and local art colleges), which may lead to the lack of targeted guidance for the reform of some specific institutions. In view of the above limitations, future research can be expanded from the following four directions: First, expand the scope of the literature review, include more domestic and foreign related research on traditional instrumental music teaching reform, enrich the research perspective, and improve the comprehensiveness of the research findings. Second, carry out systematic empirical research, select universities with bamboo flute majors as reform pilots, conduct quasi-experimental research through teaching reform experiments, in-depth interviews with teachers and students, and questionnaire surveys, to empirically test the effectiveness and applicability of the proposed training model, and optimize the reform path based on the empirical results. Third, focus on the internationalization of bamboo flute professional training, explore the talent training strategies under the framework of cross-cultural communication of bamboo flute art, and cultivate compound talents who can both inherit the traditional bamboo flute art and carry out international cultural communication. Fourth, conduct in-depth research on the innovative application of digital technology in bamboo flute teaching, develop more professional digital teaching resources and intelligent teaching systems suitable for bamboo flute majors, and promote the deep integration of digital technology and bamboo flute professional teaching.

The future research opportunities include the following: The first, extend the range of literature review, include additional information obtained in research at home and abroad, and add more diversity to the research viewpoint; secondly, perform an empirical study, pick some of the universities that offer bamboo flute majors as pilot reform projects and assess the effectiveness of the new training model in the field by conducting comparative experiments and other means; thirdly, focus on the internationalization of the training of bamboo flute

professionals and develop strategies of talent training in the framework of cross cultural spreading of bamboo flute art; fourthly, engage in the thorough investigation of innovative use of digital technology in the teaching of bamboo flute and come up with more digital teaching materials and resources to be applicable to bamboo flute majors.

5. Conclusion

This paper has been based on scholarly articles that reviewed literature regarding university bamboo flute cultivation and inductive analysis to determine existing model problems and suggest new liberal arts transformations. The findings indicate a framework of technique-culture-innovation with ample output in history, technique, teaching, and interdisciplinary integration. Nevertheless, there are still challenges such as inflexible curricula and conservative ways, few opportunities to train, and inappropriate assessment systems that prevent adjustment to the new demands of liberal arts.

The new liberal arts framework provides that the university bamboo flute program should develop a new training paradigm that will be based on cultural inheritance, grounded on interdisciplinary integration, motivated on digital empowerment, and give results on practical innovation. The model may be enhanced by optimizing the interdisciplinary curriculum system, encouraging the empowerment of digital teaching, developing diverse practice platforms, and improving the comprehensive quality evaluation mechanism.

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