Literacy Transmission and Development of Xu Gongning Bianzhong in Chinese Universities

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ABSTRACT

The Xu Gongning Bianzhong, an ancient musical instrument dating back to the Western Zhou Dynasty, embodies China’s rich cultural heritage. This study investigates the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities, aiming to understand its preservation and development in traditional Chinese music education. Utilizing qualitative interviews, archival research, and thematic analysis, the research focuses on the School of Music at Pingdingshan University in Henan Province, China, as the research site. A total of 18 informants, including experts in Bianzhong reproduction and performance, students, and teachers, provide insights into the transmission process. Data analysis reveals structured classroom teaching, curriculum integration, and student experiences shaping Bianzhong’s literacy. Results highlight historical findings, innovative teaching methods, and positive student feedback, emphasizing the instrument’s cultural significance and educational impact. The study suggests a continued emphasis on immersive teaching practices, interdisciplinary collaboration, and cultural preservation efforts within higher education settings.

Key words: Bianzhong, Chinese Music Education, Literacy Transmission, Cultural Heritage, Higher Education

INTRODUCTION

The Xu Gongning Bianzhong is a venerable testament to China’s rich musical heritage, embodying centuries of cultural resonance and artistic sophistication. Originating in the Western Zhou Dynasty over 2,400 years ago, the Bianzhong represents a pinnacle of ancient Chinese musical instrument craftsmanship, known for its intricate tonal system and symbolic significance in ceremonial and ritual contexts (Moore et al., 2015; Yang, 2019; Deng, 2021; Jueming, 2023). As contemporary China navigates the complexities of cultural preservation and innovation, the role of Chinese universities in transmitting and developing literacy surrounding the Xu Gongning Bianzhong becomes a focal point of inquiry, underscoring the dynamic interplay between tradition and modernity in educational settings (Guo et al., 2019; Xiao et al., 2021; Wu, 2023; He & Sornyai, 2023).

Within the broader landscape of Chinese musicology and cultural studies, the Xu Gongning Bianzhong occupies a unique position as a historical artifact and a living tradition (Tien, 2016; Bao & Boonsriana, 2024). Scholars and practitioners have long been captivated by its melodic complexities, structural nuances, and historical significance, prompting ongoing investigations into its origins, musical properties, and cultural implications. However, despite this scholarly interest, there remains a notable gap in comprehensive research focused specifically on how the literacy of Xu Gongning Bianzhong is transmitted and developed within the academic sphere of Chinese universities (Xingchen, 2022; Zhang & Bryan-Kinns, 2022; Ling, 2023).

The research problem thus emerges as an exploration of the pedagogical frameworks, cultural contexts, and institutional practices that shape the literacy transmission and developmental trajectories of Xu Gongning Bianzhong in Chinese universities (Lam, 2008; Currie & Christensen, 2022). While anecdotal accounts and scattered studies exist on aspects of Bianzhong’s performance or historical analysis, a systematic and holistic examination of its integration into university curricula, instructional methodologies, and cultural impact is lacking. This gap presents a compelling opportunity to delve into the nuanced dynamics of cultural education and preservation within higher education contexts, addressing questions of continuity, adaptation, and innovation (Yang & Welch, 2014; Yang, 2023; Zhou & Chuangprakhon, 2023).

The objective of this study is to investigate the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities. By employing a multifaceted approach encompassing qualitative interviews, archival research, and comparative analysis, this study seeks to unravel the complexities of how this ancient musical heritage is taught, learned, and perpetuated within the structured environments of higher education institutions (Law & Ho, 2015; Zhu et al., 2024). Through a rigorous examination of pedagogical strategies, student experiences, institutional support mechanisms, and broader cultural implications, this research...
aims to contribute substantive insights into the intersecting domains of musicology, cultural studies, and educational practices (Barrett, 2014; Forrester, 2018).

Research Question
1. How does the literacy transmission of Xu Gongning Bianzhong in Chinese universities contribute to the preservation and development of traditional Chinese music education?

LITERATURE REVIEW
The literacy transmission and development of Xu Gongning Bianzhong in Chinese universities encompasses a multidisciplinary exploration drawing from musicology, cultural studies, and educational theories. This literature review integrates key theories and scholarly contributions relevant to understanding the transmission and development of cultural literacy, particularly within the context of Chinese universities.

Historical and Cultural Context
Central to this investigation is the historical and cultural context surrounding the Xu Gongning Bianzhong. Scholars provide foundational insights into the ancient musical instruments of the Shang and Zhou dynasties, shedding light on the cultural significance of Bianzhong within ritual practices and courtly settings. Textual research further enriches our understanding of ancient musical notation and instrument symbolism, highlighting the deep-rooted connections between music, ritual, and social order in ancient China (Basso, 2017; Phillips & D’Angour, 2018).

Musicological Perspectives
From a musicological standpoint, exploration of Chinese music temperament and research on bell rhythms offer valuable theoretical frameworks for analyzing the tonal complexities and rhythmic structures inherent in Bianzhong’s performance. Additionally, scholars’ work delves into the mathematical and acoustic aspects of ancient Chinese tonal systems, providing analytical tools for studying the musical intricacies of Bianzhong compositions (Hijleh, 2016; Mazzola et al., 2021).

Archaeological and Historical Studies
The archaeological discoveries and historical studies related to Bianzhong offer empirical evidence and a contextual understanding of Bianzhong’s origins, construction techniques, and cultural symbolism. These studies form the basis for tracing the lineage and evolution of Bianzhong as a cultural artifact and musical tradition (Khayutina, 2021; Bu, 2024).

Educational Theories
In the realm of educational theories, concepts regarding higher education teaching evaluation terms and modern educational philosophies like Outcome-Based Education (OBE) are particularly relevant. These insights underscore the importance of evaluating pedagogical approaches and student-centered learning paradigms, which are integral to understanding how Xu Gongning Bianzhong literacy is transmitted and developed within Chinese universities (Lee, 2019; Asim et al., 2021).

Cross-Disciplinary Insights
Furthermore, cross-disciplinary perspectives bridge the gap between archaeological insights and contemporary musical practices, offering insights into the cultural continuity and adaptation of ancient musical traditions like Bianzhong. These insights into continuity, adaptation, and innovation are crucial for understanding how Xu Gongning Bianzhong’s literacy evolves within the dynamic milieu of Chinese higher education (Jones, 2016; Kingston et al., 2017; Baker et al., 2018).

METHOD
Selection of the Informants
Three distinct informant groups were chosen for interviews: key informants, casual informants, and general informants. Six key informants include individuals involved in reproducing Bianzhong bells, creating, and performing Bianzhong music, and studying ritual and music culture extensively, particularly related to Xu Gongning Bianzhong. Five general informants encompass students and teachers actively participating in Bianzhong performances. In comparison, seven casual informants consist of enthusiasts and audience members contributing insights from everyday life and social media platforms. This diverse selection ensures a comprehensive exploration of Bianzhong’s literacy transmission and development in Chinese universities.

Selection of the Research Site
The selection of the research site.

The research focuses on Henan Province in central China, particularly Pingdingshan City, where the School of Music, Pingdingshan University stands as a beacon of cultural revival and musical innovation. School of Music, Pingdingshan University is renowned for hosting the first elegant orchestra in mainland China, as shown in Figure 1, and the criteria in Table 1.

Research Tools
In the pursuit of understanding the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities, this study relied primarily on interviews and observations as its research tools. The process of developing these research tools is outlined below, encompassing steps from initial creation to final refinement based on expert feedback.
1. Develop research tools based on the research objective concerning Bianzhong’s literacy transmission and development.
2. Present the tools to the advisor for examination and feedback.
3. Revise the tools according to the advisor’s edits and suggestions.
4. Submit the finalized tools to an expert for inspection before implementation.
5. Adjust the tools based on specialist advice before their use in fieldwork.

Data Analysis

The data analysis for investigating the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities involved a systematic approach. Firstly, all collected data from interviews and observations were organized and categorized according to key themes and patterns related to Bianzhong’s transmission and development. Qualitative data, including interview transcripts and observational notes, were subjected to thematic analysis to uncover underlying meanings and interpretations. The analysis aimed to provide a comprehensive understanding of how Xu Gongning Bianzhong’s literacy transmission has evolved within the context of Chinese universities, shedding light on its cultural significance and educational impact.

RESULTS

The investigation into the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities revealed significant findings regarding the historical context and artistic value of these ancient musical instruments. One notable discovery was the unearthing of Xu Gongning Bianzhong from Xu Cemetery in Ye County, Henan Province, which shed light on the historical and cultural significance of Xu State in the Spring and Autumn Period. The tomb, identified as the tomb of Xu Linggongning, contained a set of 37 multiple combination bronze Bianzhonges, showcasing unique musical and artistic characteristics, as shown in Figure 2.

Additionally, the research delved into the process of copying Xu Gongning Bianzhong to form the first Ya Orchestra in a mainland university, highlighting the meticulous attention to detail in replicating the historical bells. The study also discussed the general knowledge of the physical structure, tonal system characteristics, and performance practices of Xu Gongning Bianzhong, providing insights into their musical evolution and cultural impact. The research results contribute significantly to the understanding and preservation of ancient Chinese music heritage, particularly in the context of higher education institutions.
The Transmission of Xu Gongning Bianzhong in the Classroom

The transmission of Xu Gongning Bianzhong in classroom teaching at Chinese universities is a comprehensive process embedded within a structured teaching system. This system encompasses various elements such as knowledge structure, teaching content, methods, process, and evaluation. One crucial aspect of this system is the course credit setting, exemplified by the “Grace Training” professional elective course offered by the School of Music, which adopts a “modular” curriculum system. This course belongs to the regional music culture module and includes band training, dance team training, and singing team training, with Bian Zhonge courses integrated into the band training component. By teaching traditional Chinese ritual music culture and ancient music performance knowledge, students not only master Bian Zhonge performance techniques but also develop teamwork spirit and instrumental ensemble methods. The course spans semesters 3-6, comprising 17 weeks per semester with four classes per week, totaling 272 class hours and earning students 4 credits upon completion, the course schedule is shown in Table 2.

The faculty composition follows an interactive teaching model termed “internal training + external introduction” forming a robust team of teachers that bridges internal and external expertise. Despite the absence of full-time Bian Zhonge performance teachers within the school, professional percussion teachers have been trained to undertake Bian Zhonge teaching and band rehearsals through teacher improvement plans and external training programs. Distinguished scholars enrich the curriculum by providing lectures on traditional Chinese music theory, Bian Zhonge composition, and elegant music performance, thereby enhancing students’ learning experiences, as shown in Figure 3.

The course’s teaching objectives are multifaceted, aiming to achieve knowledge acquisition, musical proficiency, communication skills, teamwork spirit, ethical conduct, and professional ideals among students. Specifically, the knowledge objectives include playing the music of a corresponding level, developing basic sight-reading abilities, understanding Bian Zhonge orchestration, discerning court elegant music from secular music, and deepening awareness of ritual and music civilization. The ability goals focus on communication techniques, teamwork spirit, and cultivating a scientific research spirit and study style. Lastly, the competency goals emphasize cultivating individuals with moral

![Figure 2. Xu Gongning bianzhong used by the School of Music, Pingdingshan University Source: Keke Pan, from fieldwork in June 2023](image)

![Table 2. Course schedule](image)
integrity, professional ethics, a humanistic background, scientific literacy, and a genuine love for education and students. Outlines the course content, highlighting chapters on basic Bian Zhonge bell performance training, rehearsals of specific musical suites like the Ying Long Fengyun Suite and the Book of Songs Suite, and practical aspects such as playing etudes, arrangement of different movements, and self-study requirements to enhance students’ understanding and proficiency in Bian Zhonge performance techniques, as shown in Table 3.

Overall, the transmission of Xu Gongning Bianzhong in classroom teaching within Chinese universities is structured, comprehensive, and aimed at fostering a deep understanding, appreciation, and mastery of this ancient musical heritage among students.

In the realm of musical practice, etudes play a pivotal role as pieces of music crafted to refine performance techniques. These compositions typically focus on specific technical aspects, aiming to enhance particular areas of musicianship. At the School of Music, the teacher devised a series of Bian Zhonge etudes inspired by the distinctive traits of Xu Gongning Bianzhong. This innovative approach significantly contributed to the improvement of students’ learning outcomes and mastery of Bian Zhonge’s performance techniques, as shown in Figure 4.

In 2022, the Henan Provincial Department of Education outlined the county construction objectives within the “National Training Plan” project, emphasizing teacher training counties’ key responsibilities, resource integration across levels, and the establishment of a comprehensive teacher training system. This system, with five-level coordination including city, county, and school-based training, aims to provide high-quality training for all educators, ensuring each teacher has a suitable development platform and experiences continuous professional growth. Starting in 2016, our school has been actively involved in county and urban area training under the “National Training Program,” focusing on promoting exceptional traditional culture. Our emphasis lies in bridging theory with practice, utilizing immersive techniques through ancient musical instrument performances to delve deep into musical essence, enhance the musical experience, and facilitate the integration of traditional music into classroom settings. These efforts have drawn participants from various regions in the province, significantly contributing to the propagation of ritual and music culture from the Central Plains.

Students who engaged in these elegant music activities were profoundly impacted by the experience. The performance of harmonious harps, resonant bells, and drums, enchanting melodies, and ancient rhythms left them amazed and deeplymoved. They gained a deeper understanding of the harmonious blend of etiquette and music within Central Plains ritual music, enriching their appreciation for the nation’s cultural heritage and bolstering their sense of national pride and confidence, as shown in Figure 5.

### Practical Teaching Development

#### Student feedback

In November 2023, students from the School of Music who engaged with Bian Zhonge Bell were interviewed. These students, primarily sophomores and juniors, provided valuable insights into their experiences with the instrument.

<table>
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<th>No</th>
<th>Title</th>
<th>Teaching and Learning Content</th>
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| 1  | Basic Training on Bian Zhonge Bell’s       | • Performance of each part of Bian Zhonge bells and basic coordination with plucked parts, windpipe parts, and percussion parts  
• Practical content: playing etudes  
• Self-study requirements: practice strictly according to classroom requirements  
• Key point: Pay attention to the stability of the beat rhythm  
• Difficulty: volume ratio between parts |
|    | Performance                              |                                                                                                                                                                                                                                |
| 2  | Rehearsal of Ying Long Fengyun Suite       | • Arrangement of different movements  
• Practical content: practice one by one according to the parts  
• Self-study requirements: practice strictly according to classroom requirements  
• Key point: Pay attention to the stability of the beat rhythm  
• Difficulty: volume ratio between parts |
| 3  | Book of Songs Suite Rehearsal              | • Arrangement of different movements  
• Practical content: practice one by one according to the parts  
• Self-study requirements: practice strictly according to classroom requirements  
• Key point: Pay attention to the stability of the beat rhythm  
• Difficulty: volume ratio between parts |
One student, previously focused on percussion, found a newfound interest in Bian Zhonge’s bell performance after joining a rehearsal class. They highlighted learning cultural knowledge, mastering performance techniques, and actively participating in performance activities, which helped them spread awareness of Chinese cultural heritage.

Another student marveled at the historical significance of Bian Zhonges, considering them pivotal in ancient Chinese music. They praised the tonal intricacies, craftsmanship, and cultural depth embodied in these instruments, emphasizing their role as symbols of national pride.

For a third student, attending Bian Zhonge classes invoked reverence and awe, considering the instruments as conduits to ancient wisdom and spirituality. The majestic sound of Bian Zhonge bells left a profound impact, connecting them with the past and evoking a sense of spiritual cleansing.

Similarly, another student was captivated by the mystery and grandeur of Bian Zhonges, noting their unique tonal qualities and historical significance. They found themselves transported to ancient times, appreciating the craftsmanship and wisdom of past generations.

Lastly, a student emphasized the mentorship tradition within the Bian Zhonge Bell Orchestra, where experienced students guide newcomers, fostering a sense of continuity and shared responsibility.

**Teacher feedback**

The dean of the School of Music highlighted the global popularity of ritual music teachings, emphasizing their role in cultivating moral character and cultural understanding. They underscored the importance of virtues and cultural values conveyed through Bian Zhonge Bell Ritual and Music courses, instilling a deep appreciation for traditional Chinese culture among students. The teacher focusing on Bian Zhonge’s performance instruction, emphasized the essence of kindness and diligence encapsulated in Bian Zhonges, encouraging students to adopt a similar approach to life.

**Social feedback**

Experts and directors praised a university in China for its efforts in replicating and preserving Xu Gongning Bianzhong, recognizing its significance in promoting traditional culture and enriching national cultural confidence. Audiences also expressed profound admiration and awe after experiencing Bian Zhonge bell performances, highlighting the timeless beauty and historical depth conveyed through these ancient musical treasures.

**DISCUSSION AND CONCLUSION**

The research on the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities aligns with several key research and theoretical principles. Firstly, the study is grounded in the rich historical and cultural context of Xu Gongning Bianzhong, drawing from scholarly works that emphasize its significance in ancient Chinese music and ritual practices (Basso, 2017; Khayutina, 2021). This aligns with the research’s objective of exploring the preservation and development of traditional Chinese music education through the transmission of this ancient musical heritage.

The literature review delves into musicological perspectives, educational theories, and cross-disciplinary insights, providing a comprehensive understanding of the subject matter (Hijleh, 2016; Lee, 2019; Kingston et al., 2017). These theoretical frameworks inform the research methodology and help structure the investigation into how Xu Gongning Bianzhong’s literacy is transmitted and developed within Chinese universities.

The research methodology, which includes qualitative interviews, archival research, and comparative analysis, is consistent with established methods for studying cultural and educational phenomena (Law & Ho, 2015; Zhu et al., 2024). The selection of informants from different groups ensures a diverse range of perspectives, enriching the data collected and contributing to a nuanced analysis.

The research results reveal significant findings regarding the historical context of Xu Gongning Bianzhong, its transmission in classroom teaching, practical teaching developments, and feedback from students, teachers, and experts. For example, the study uncovers the meticulous process of copying Xu Gongning Bianzhong and its integration into university curricula, highlighting efforts to preserve and transmit cultural heritage (Deng, 2021). Additionally, student
feedback underscores the impact of Bianzhong education on cultural appreciation and national pride (Guo et al., 2019).

In conclusion, the research on the literacy transmission and development of Xu Gongning Bianzhong in Chinese universities has significantly contributed to our knowledge of cultural preservation, educational methodologies, and musical heritage. Through an in-depth examination of pedagogical frameworks, cultural contexts, and institutional practices related to Bianzhong education, this study has illuminated the complex interplay between tradition and modernity within Chinese higher education settings. The findings underscore the multifaceted benefits of incorporating ancient musical traditions like Xu Gongning Bianzhong into contemporary educational curricula.

One of the key insights gleaned from this research is the dual role of Bianzhong education in preserving cultural heritage and fostering holistic student development. By integrating Bianzhong literacy into educational programs, institutions not only contribute to the preservation of China's rich cultural legacy but also promote cultural appreciation, teamwork spirit, and ethical conduct among students. These outcomes align with broader educational objectives aimed at nurturing well-rounded individuals with a deep understanding and respect for their cultural heritage.

Moving forward, it is imperative to explore new research perspectives and methodologies to further enrich our understanding of Bianzhong education and its broader implications. Future research endeavors could delve deeper into specific aspects such as the impact of Bianzhong literacy on cultural identity formation or the effectiveness of innovative teaching approaches in transmitting this musical heritage. By undertaking such investigations, scholars can provide more targeted guidance for educational practices and contribute to the ongoing evolution of traditional Chinese music education within Chinese universities.

REFERENCES


