

# The Evolution and Preservation of the Cultural Heritage of the Ti-Tzu Ten Hole Bamboo Flute in Sichuan Province, China

Qiang Wang, Chalernsak Pikulsri\*, Pornpan Kaenampornpan

Faculty of Fine and Applied Arts, Khon Kaen University, Khon Kaen, Thailand  
Email: chapik@kku.ac.th

## Abstract

This study focuses on the evolution and preservation of the cultural heritage of the Ti-Tzu ten-hole bamboo flute in Sichuan Province, China. For collecting data, the researchers conducted interviews and observations. The results of the study show that Shen Wenyi's original work resulted in the invention of bamboo flutes with seven, nine, and ten holes, which are significant findings. These developments resolved issues with pitch discrepancies and broadened the range of playing techniques, influencing the flute's cultural importance and musical repertoire. The study also emphasizes educational endeavors, group development, and textbook creation to safeguard and advance the flute tradition. It highlights the lasting impact and constant evolution of the Ti-Tzu ten-hole bamboo flute as a representation of cultural heritage and a source of pride in Sichuan Province.

**Keywords:** Evolution; Preservation; Cultural Heritage; Ti-Tzu; Bamboo Flute; Sichuan Province.

The Ti-Tzu, also known as the Chinese bamboo flute, has profound historical and cultural significance in China. Its history, which spans an impressive 9000 years, positions it as one of the most ancient wind instruments. This enduring musical heritage, which persists from the prehistoric Stone Age to the present, is a testament to the unbroken thread of Chinese culture (Lu, 2022; Rao et al., 1987; Xu, 2018).

Historical records indicate that the Ti-Tzu is recognized as the earliest instrument in China and as the predecessor to numerous other small wind instruments found in various cultures. Throughout thousands of years, as human civilization advanced, the materials utilized in its construction also changed (Horner et al., 1999). Originally fashioned from avian wing bones in

ancient eras, it evolved to incorporate bamboo, a readily abundant material suitable for constructing musical instruments. This development resulted in its contemporary name, the bamboo flute (Ayers, 2003). The Ti-Tzu's enduring presence underscores its cultural significance and remarkable ability to adapt and thrive in changing times (Smith, 2009). As a conduit for artistic expression and cultural heritage, it continues to stir profound emotions among audiences in China and worldwide, showcasing Chinese music's rich and intricate tapestry (Hou & Seekhunlio, 2023; Ng et al., 2021).

The Ti-Tzu in Sichuan Province has experienced a significant transformation, creating the ten-hole bamboo flute in 1950 at the

Sichuan Conservatory of Music (Maryna Antoshko, 2020; Tang & Charoennit, 2022). Under the leadership of Professor Shen Wenyi, this breakthrough represented a crucial turning point in the instrument's development, leading to four further generations of improvement and continuation over a period of 70 years (Lau, 1996). The ten-hole bamboo flute has evolved into a prominent emblem of artistic expertise and cultural representation by employing rigorous teaching methods, engaging in stage performances, and conducting scholarly studies (Xie & Li, 2021).

In addition to its exceptional musical abilities, the Ti-Tzu carries significant cultural importance since it transmits Chinese ethnic culture through its unique musical genres and performing approaches. The next generation of inheritors can greatly contribute to the maintenance and progress of cultural traditions by studying and mastering the ten-hole bamboo flute during their scholastic studies. This article undertakes an interdisciplinary investigation into the bamboo flute's cultural and social aspects. It combines scientific research, participant observation, and personal experiences in ethnomusicology. This study aims to add to the continuing discussion of the preservation and evolution of ethnic music culture in Sichuan Province and beyond by exploring its cultural values.

## Literature Review

### 2.1 General Knowledge of Bamboo Flute

The bamboo flute is revered as a traditional Chinese instrument, deeply intertwined with the nation's rich cultural heritage. Across China's extensive history, the melodic strains of the bamboo flute have served as a conduit for expressing and transmitting a myriad of emotions, thereby enriching the spiritual landscape of its people. Today, amidst the ongoing advancement of spiritual civilization construction and the remarkable surge in Chinese national cultural confidence, bamboo flute art's

development trajectory has become increasingly evident (Xia, 2023; Yi, 2021; Yue & Seekhunlio, 2024). The Ti-Tzu, often called *Dízi*, is a renowned Chinese transverse flute with a documented historical background. It is distinguished by a distinct aperture in its membrane known as 'mokong', a body constructed from bamboo (Ng et al., 2022). The Ti-Tzu is a traditional Chinese flute that is well-liked in classical and folk music performances. It is known for its unique timbre, produced by a membrane stretched over a membrane hole. In addition, the structure of the bamboo flute is distinct from that of the western flute (Odaka, 2012; Prescott et al., 2008). The bamboo flute is made entirely of bamboo and has no keys. The embouchure hole is incorporated into the body of the bamboo flute. Consequently, the performance techniques of the bamboo flute also vary from those of the western flute. These differences include variations in embouchure control and jet length (Han & Jer-Ming, 2022).

Ti-Tzu is a prevalent Chinese flute known for its vibrant buzzing characteristic, achieved by attaching a rice paper membrane over a hole. Additional variations of Chinese flutes that have been replicated include the *xiao* (a flute held vertically), *paixiao* (a set of panpipes), and *xun* (a form of ocarina) (Lan & Waltham, 2016). The *sheng* is an ancient musical instrument consisting of a wind chamber and a circular arrangement of bamboo pipes. It has been in existence since 1500 BC. In addition, a folk variant of the *sheng*, known as the *lusheng*, has been created, along with the *bawu* and *hulusi*, which are folk instruments that provide a similar sound to the clarinet. The player's oral cavity fully envelops the *bawu*'s respiratory opening, equipped with a resonating reed incised into a copper strip that overlays the aperture. The *hulusi* has a single playing tube and several drone tubes (Guo et al., 2023; Horner & Ayers, 1998).

### 2.2 Chinese bamboo flute performance

The performance of the Chinese bamboo flute and its impact on national compositional traditions. According to a sociometric rating

system, Feng Zicun and Guo Wenqing were selected as the composers with the highest scores for their harmonic flute performance. Feng Zicun revolutionized flute playing by modifying the tempo and performing solo exclusively. On the other hand, Guo Wenqing's approach integrates both traditional and modern styles. Crucial elements that contribute to the distinctiveness of acoustic performance include variations in breathing patterns, trills, pitch and volume alterations, and overtones (Xu, 2022). The respondents highlighted the significance of respiratory patterns, pitch variations, and staccato use. The practical implications involve including components of sound quality in flute instruction, while future studies could investigate the influence of European flute traditions on Chinese culture. Therefore, it is crucial to examine the acoustic characteristics that can successfully communicate Chinese culture in the analysis of musical instruments. The bamboo flute is highly significant as a musical instrument in Chinese music ensembles and orchestras. An examination has been conducted on the acoustic composition and characteristics of the bamboo flute sound (Li et al., 2019; Wang et al., 2022).

### 2.3 Characteristics of Chinese musical instrument bamboo flute

A growing number of advanced methods are available for analyzing musical instruments' acoustic properties and quality, including experimental modal analysis and finite element software. Music is often seen as a universal language. Nevertheless, music manifests a particular culture, conveyed through the musical instrument's unique acoustic qualities and distinctive characteristics. Consequently, it is imperative to investigate the acoustic properties that can effectively convey Chinese culture when studying musical instruments. The bamboo flute is significant as a musical instrument in Chinese music ensembles and orchestras. The acoustical structure and features of bamboo flute tone have been investigated. Additionally, research is being conducted on the acoustic characteristics

associated with several primary playing techniques of the bamboo flute. Next, an analysis is conducted on the distinctive qualities of bamboo flute tones associated with Chinese music and culture (Bader et al., 2017; Peng & Geng, 2017; Yu-An et al., 1987).

The Ti-Tzu, also known as the Dizi, has a membrane covering a hole in its wall, which generates rich harmonics through nonlinearity caused by acoustic pressure. The Dizi's multidimensional timbre changes with pitch, reflecting the ancient Chinese music aesthetic of producing various timbres (Tsai, 2012). A Duffing oscillator model can explain spectral properties such as formants, the prevalence of odd harmonics, and the harmonic-to-subharmonic ratio. These dimensions comprise the dizi's timbre space, influencing psychoacoustical effects like spatiality, multi-pitch effects, and roughness (Tsai, 2004).

### 2.4 Research Theory

This study uses ethnomusicology to study music within its cultural context, including the social, cultural, and historical (Higgins, 2012; Tilton, 2009). In this study, ethnomusicology provides a theoretical framework for investigating the evolution and preservation of the Ti-Tzu ten-hole bamboo flute's cultural legacy in Sichuan Province, China. Ethnomusicological approaches help us understand how music, specifically the bamboo flute heritage, is interwoven with broader cultural practices, beliefs, and social systems (Maceda, 1990). The study uses ethnomusicology to reveal the complicated relationships between the flute tradition and Sichuanese culture, giving insight into the flute's importance as a cultural artifact and its function in defining identity and community dynamics. Ethnomusicological methods such as participant observation, interviews, and musical repertoire analysis are likely to be used to uncover these links and shed light on the flute's evolution and preservation within its cultural context (Berger & Stone, 2019; Mu, 2003).

## Methodology

### 3.1 Selection of the Research Site

The research site for the study of the Ti-Tzu ten-hole bamboo flute in Sichuan Province, China, will focus on key cultural institutions such as the Sichuan Conservatory of Music, cultural heritage sites, performance venues, local communities, and ethnographic fieldwork locations across the province (Hindman & Wei, 2023). This selection captures the instrument's historical evolution, cultural significance, performance practices, education methods, contemporary relevance, challenges, and regional community engagement (Figure 1).



Figure 1. Sichuan Province, China. Source:  
Chinafolio (n.d.)

### 3.2 Data collection

**Literature Review:** This stage thoroughly examines the current literature on the Ti-Tzu ten-hole bamboo flute, including historical books, academic publications, and cultural studies. The review seeks to develop a fundamental comprehension of the instrument's historical importance, evolutionary path, and socio-cultural setting inside Sichuan Province and beyond.

Fieldwork: Conducting ethnographic fieldwork in Sichuan Province entails visiting cultural organizations, museums, schools, and

performance venues. This facilitates the recording of physical objects, spoken accounts, historical records, and current customs related to the Ti-Tzu ten-hole bamboo flute, enhancing our comprehension of its cultural legacy and conservation endeavors. This includes:

(1) **Comprehensive Interviews:** Conducting comprehensive interviews with important individuals is essential for understanding the many viewpoints of the Tizhu ten-hole bamboo flute. The stakeholders involved in this process may encompass master musicians, instrument makers, scholars, educators, and cultural custodians. By leveraging their skills and knowledge, we aim to gain valuable insights into the cultural legacy, performance practices, teaching approaches, and the problems and opportunities involved in conserving and passing the history of the ten-hole bamboo flute.

(2) **Participant Observation:** To truly comprehend the significance of the Ti-Tzu ten-hole bamboo flute within local communities, it is crucial to engage with the cultural environment of Sichuan Province actively. This entails actively engaging in flute performances, rehearsals, seminars, and community activities to directly see its importance, interplay with various cultural traditions, and influence on the local community.

### 3.3 Data analysis

Employing qualitative methods for Analyzing the ten-hole bamboo flute compared to other traditional Chinese flutes and exploring its ties to musical traditions offers an important understanding of its development and cultural importance. To gain a deeper understanding of the instrument, we can analyze its distinct characteristics and impact on music and culture by placing it in a wider context. It can also systematically examine the collected data to extract significant themes, patterns, and insights pertinent to the evolution and preservation of the cultural heritage of the Ti-Tzu ten-hole bamboo flute in Sichuan Province, China. This thorough examination assists in revealing the subtleties of

its cultural importance and guides its ongoing conservation and promotion.

## Results

### 4.1 Evolution From Seven Hole Bamboo Flute to Ten Hole Bamboo Flute

Shen Wenyi invented the "Seven Hole Bamboo Flute" before the Nine Hole Bamboo Flute became famous in the late 1940s and early 1950s. The seven-hole bamboo flute is an improved variant of the conventional six-hole bamboo flute that incorporates an aperture into its construction. Shen Wenyi's innovation involved shifting the third hole to the back and creating a new hole between the second and third holes. The Seven Hole Bamboo Flute dramatically improved pitch accuracy in the first tone and interval clarity, particularly on the scale's "Fa" and "Ti" notes. As a result, Western-style compositions were more easily executed than the previous flute model.

Nevertheless, in the mid-1950s, Shen Wenyi expressed dissatisfaction with the restricted range of semitones that could be produced on the seven-hole bamboo flute. The Composition Department of the Sichuan Conservatory of Music, founded in 1953, experienced an era of flourishing creativity during which young composers such as Huang Huwei emerged. The conservatory faced an urgent demand from staff and students for rehearsals of new compositions. Mr. Duan Qicheng, a colleague of Shen Wenyi and a member of the Department of Folk Music, expressed his fondness for imaginative invention due to his exploration of composing approaches. The limitations of halftones on the Seven Hole Bamboo Flute were especially apparent in large-scale works since they presented substantial difficulties regarding tone shifts and alternations. In order to address the changing requirements of the academy, it became necessary to make urgent enhancements to the Seven Hole Bamboo Flute, which is in line with Shen Wenyi's dedication to advancing and safeguarding cultural heritage (Figure 2).

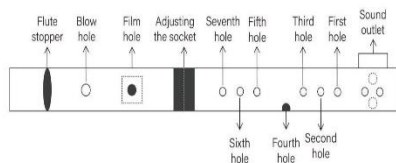


Figure 2. Diagram of seven-hole bamboo flute.  
Source: Qiang Wang

### 4.2 Evolution From Nine Hole Bamboo Flute to Ten Hole Bamboo Flute

Around 1954 and 1955, Shen Wenyi's flute reform made significant progress, marking a pivotal moment in the evolution and preservation of the cultural heritage of the bamboo flute. The specific operational details are as follows: Based on the renovated seven-hole bamboo flute, Shen Wenyi embarked on a creative endeavor, adding two more apertures through personal experimentation. This innovative approach to flute design introduced a higher level of complexity to the instrument's performance, particularly requiring adept manipulation of the little finger. The result was the "Nine Hole Bamboo Flute," a groundbreaking development that quickly gained traction in Shen Wenyi's teaching practices and garnered interest from colleagues such as the college leader Chang Sumin and composer Huang Huwei from the composition department.

However, the Nine Hole Bamboo Flute was not without its shortcomings, a flaw gradually recognized and addressed by Shen Wenyi during his teaching between 1955 and 1956. The challenge lay in the difficulty of precisely controlling the pitch of the clear angles and high half-pitch variations (specifically the "4" and "7" notes in the scale) simultaneously. While the pitch accuracy of the clear angles in the first tone was assured, maintaining accuracy in the first tone's inflection proved challenging.

This period of experimentation and refinement exemplifies Shen Wenyi's commitment to advancing the bamboo flute's evolution while ensuring its cultural heritage's

preservation. Despite encountering obstacles, his dedication to innovation and improvement ultimately contributed to the continued development and legacy of the bamboo flute tradition (Figure 3).

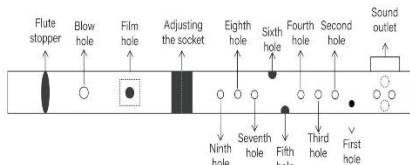


Figure 3. Diagram of nine-hole bamboo flute.  
Source: Qiang Wang

#### 4.3 Evolution of the Ten-Hole Bamboo Flute

Shen Wenyi, colleagues, and students from the Sichuan Conservatory of Music conducted a thorough investigation to fix the problems found in the nine-hole bamboo flute. Their goal was to improve pitch inconsistencies, specifically related to the "4" and "7" notes of the scale. This undertaking entailed enhancing the flute by incorporating an extra opening, deliberately operated by the left thumb, while utilizing advanced breath control techniques. They corrected the pitch differences described earlier by conducting careful and systematic experiments, creating the ten-hole bamboo flute. This groundbreaking innovation signifies a major achievement in the continuous development and safeguarding of the cultural heritage embedded in the tradition of bamboo flutes.

Contemporary musicologists and performers have tried to modernize the bamboo flute throughout music history. Nevertheless, Shen Wenyi's innovative endeavors have received global recognition and produced noticeable performance improvements. His contributions represent significant progress in developing and preserving the cultural heritage closely linked to the bamboo flute tradition.

The predominant methods of enhancing traditional bamboo flutes primarily involved adding holes and keys, placing the "Ten Hole

Bamboo Flute" within the "Add Hole" reform flutes category. Compared to keyed bamboo flutes with supplementary parts and altered materials, modified bamboo flutes with added holes offered advantages such as a relatively straightforward production process and lower manufacturing costs.

The definition of the ten-hole bamboo flute encompasses a set of three flutes, each varying in size but sharing identical designs. This entails the addition of four finger holes atop the traditional six-hole bamboo flute. Incorporating new finger holes, controlled by specific digits (left thumb, left little thumb, right big thumb, and right little thumb), facilitates adjustments in finger-hole distances, allowing for the separation of more chromatic intervals. Consequently, performers can navigate the twelve equal pitch scale with enhanced precision and speed, all while retaining the traditional six-hole bamboo flute's timbre and range. Presently, a relatively comprehensive teaching system, seasoned performance ensembles, and extensive music repositories have coalesced, rendering the Ten Hole Flute a quintessential exemplar within the broader music reform landscape. This enduring legacy underscores its pivotal role in the ongoing evolution, preservation, and perpetuation of cultural heritage associated with the bamboo flute tradition (Figure 4).

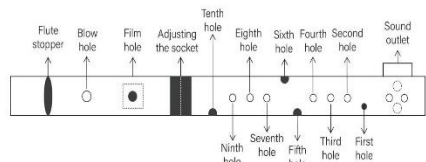


Figure 4. Diagram of ten-hole bamboo flute.  
Source: Qiang Wang

#### 4.4 The Legacy and Innovation of the Ten Hole Bamboo Flute Professional Orchestra

The creation of the Ten Hole Bamboo Flute Professional Orchestra in early 2018 was a major step forward in developing and protecting the cultural heritage linked to the bamboo flute

legacy in China. Being the country's first professional orchestra of its sort, the Ten Hole Bamboo Flute Professional Orchestra serves as evidence of the lasting impact of the bamboo flute's development.

The orchestra consists of outstanding students from the Sichuan Conservatory of Music, including graduate and undergraduate students and pupils specializing in playing the bamboo flute from the affiliated middle school. The orchestra is dedicated to nurturing individuals who excel in one area of expertise while possessing multiple skills. The orchestra utilizes well-established training approaches for the ten-hole bamboo flute, which has its roots in the traditional six-hole bamboo flute. This technique allows participants to improve their musical expression, broaden their musical ideas, and perfect their musical aesthetics through structured professional instruction and significant experience performing on stage.

The Ten Hole Bamboo Flute Professional Orchestra showcases a harmonious blend of preserving heritage and embracing innovation by combining traditional bamboo flute techniques with current teaching methods. The orchestra's efforts contribute to the ongoing development and vibrancy of the bamboo flute tradition, guaranteeing its lasting relevance and cultural importance for future generations.

#### 4.5 The Influence of the Ten-Hole Bamboo Flute on Composer Creativity

The ten-hole bamboo flute emerges through fieldwork interviews and observations with distinct qualities integral to the composer's creative process. Its unique attributes, such as preserving traditional tones, enhanced pitch accuracy, and expanded playing techniques, significantly influence the composer's creative thinking.

This innovation represents a delicate balance between tradition and novelty, empowering performers and composers with unprecedented artistic freedom. Composers are no longer confined to standard pentatonic and heptagonal scales or basic melodies. They now have the

liberty to explore various options when expressing their musical ideas. Integrating the ten-hole bamboo flute in composition opens new avenues for innovative exploration, allowing composers to push their artistic boundaries and venture into uncharted territories. By harnessing the flute's capabilities, composers can enrich their compositions with a fresh sense of freedom and adaptability, facilitating seamless integration with other instruments in an ensemble setting.

The evolution in composing possibilities enhances the collection of bamboo flute music and aids in the conservation and progress of traditional bamboo flute art. The ten-hole bamboo flute plays a crucial role in enabling composers to create more original and captivating compositions, driving the ongoing growth and success of bamboo flute music within the wider realm of cultural heritage.

#### 4.6 Teaching and Preservation of Ten Hole Bamboo Flute

Teaching is essential for preserving and continuing the ten-hole bamboo flute legacy. The development of teaching methods for this instrument can be divided into specific time eras, each marked by various pedagogical approaches and cultural situations. Between 1955 and 1965, during the crucial period of the instrument's evolution, initial instructional approaches prioritized fundamental techniques and the construction of a repertoire, establishing the basis for future musicians.

Between 1974 and 1976, there was a growing interest in the ten-hole bamboo flute, driven by initiatives to revive old musical practices. During this period, teaching methods focused on achieving a harmonious combination of technical skill and creative interpretation. Educators aimed to instill in their students a profound comprehension of the instrument's cultural importance.

Between 1977 and 1999, when China saw significant socio-cultural transformations, the teaching methods for the ten-hole bamboo flute underwent adjustments to align with evolving educational paradigms. The focus was

combining ancient teachings with contemporary pedagogical methods, creating a comprehensive and inclusive learning environment. During this era, there was a notable rise in cooperation between educators and practitioners, creating standardized teaching materials and curricula.

From 2000 to the present, teaching methods for the ten-hole bamboo flute have evolved in response to technological breakthroughs and changing musical preferences. Novel methodologies, including internet-based educational platforms and interactive pedagogical resources, have complemented conventional teaching techniques, thereby broadening the reach of flute education and nurturing a worldwide network of practitioners.

Aside from official instruction, enthusiasts of the ten-hole bamboo flute have actively promoted the instrument through many outreach initiatives. Music exhibitions, instructional exchanges, seminars, and performances are utilized to increase knowledge of the instrument's cultural heritage and cultivate a deep love for its distinct sound and repertoire. Through their unwavering commitment and relentless promotion, educators and practitioners continue to have a crucial impact in preserving the long-lasting heritage of the ten-hole bamboo flute for future generations (Table 1).

Table 1. The evolution of the teaching mode for the Ten Hole Bamboo Flute

Time Period	Teaching Mode	Characteristics
1955-1965	Early Stage of Teaching	<ul style="list-style-type: none"> <li>- Emphasis on versatility and specialization</li> <li>- Professional and ensemble courses</li> <li>- Individualized guidance</li> </ul>
1974-1976	Special Period	<ul style="list-style-type: none"> <li>- Influenced by politics and socio-cultural climate</li> <li>- Limited resources and compromised teaching quality</li> </ul>
1977-1999	Development Period	<ul style="list-style-type: none"> <li>- Standardization and professionalism</li> </ul>

Since 2000	New Era	<ul style="list-style-type: none"> <li>- Enhanced learning through recordings and electronic devices</li> <li>- Maturity and exploration</li> <li>- Tradition and innovation</li> <li>- Emphasis on theory and interdisciplinary research</li> </ul>
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Source: Qiang Wang

#### 4.7 Textbook Compilation of Ten Hole Bamboo Flute

The evolution of textbooks for the Ten Hole Bamboo Flute is influenced by the complex interaction of historical, pedagogical, and cultural elements throughout various periods. The production of textbooks began in the 1960s with basic collections of scores. In the 1970s, efforts were made to construct organized frameworks for textbook development, which were impacted by political circumstances (Figure 5).

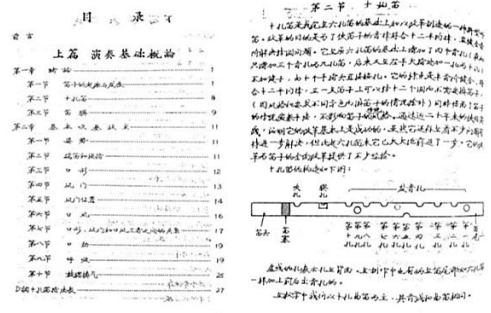


Figure 5. Textbooks from the 1970s Source: Sichuan Conservatory of Music Library

Later times witnessed progress in instructional resources, characterized by heightened intricacy and improvement to cater to changing educational requirements. In the face of difficulties like political instability and evolving trends in music, educators demonstrated resilience and ultimately produced significant works in the new century. Textbook compilation has been crucial in conserving and



conveying the cultural history of the Ten Hole Bamboo Flute. It has also helped to maintain its legacy and influence in musical education and practice (Table 2).

Table 2. Textbook Compilation of Ten Hole Bamboo Flute

Time Period	Key Developments
1960s	- Compilation of the "Old Textbook of the 1960s", featuring collections of musical scores. - Lack of written descriptions, focusing solely on musical notation.
1970s	- Compilation of the "Sichuan Conservatory of Music Flute Basic Course" - Establishment of a structural framework for Ten Hole Flute textbooks. - Abandonment of the course due to disparities between educational objectives and political climate.
1977 to 1979	- Compilation of the "1978 Flute Solo Collection", featuring repertoire with elevated technical demands.
1980s	- Participation in the "Ethnic Wind Music Exchange Conference". - Adoption of textbooks from other institutions due to inadequacy of existing materials.
New Century (2000s)	- Compilation and publication of "Basic Principles and Tutorials of Ten Hole Bamboo Flute" by Yi Jiayi. - Filling the gap in publicly available Ten Hole Bamboo Flute textbooks. - Praised for comprehensive coverage of historical development and dedication to flute performance.

Source: Qiang Wang

Discussion

The study on the evolution and preservation of the cultural heritage of the Ti-Tzu Ten Hole Bamboo Flute in Sichuan Province, China, has uncovered a diverse and valuable combination of historical, cultural, and musical importance. This study has utilized a comprehensive approach that includes historical research, ethnographic fieldwork, and interviews with practitioners and educators. As a result, it has yielded insights into

the lasting impact of the Ti-Tzu flute and the measures taken to preserve its cultural heritage. The Ti-Tzu Ten Hole Bamboo Flute has undergone a significant and impressive evolutionary process, including cultural and technological progress (Hong & Wu, 2022; Zhou, 2022).

The Bamboo flute has had significant changes throughout its history, influenced by the creativity of craftsmen, musicians, and educators, from its early beginnings in ancient China to its present form. Various innovations, including the incorporation of finger holes, enhancements in material quality, and breakthroughs in playing techniques, have contributed to the flute's ongoing relevance and flexibility in modern music (Wong, 2020; Zhong, 2010). The Ti-Tzu Ten Hole Bamboo Flute is a significant representation of cultural heritage in Sichuan Province (Lee & Wong, 2017). The inclusion of this element into many cultural practices, rites, and rituals highlights its profound and enduring existence within local communities, serving as a reservoir of shared memory and identity. Efforts to conserve this cultural legacy involve many endeavors, such as educational programs, performing ensembles, and advocacy campaigns that aim to increase knowledge and cultivate respect for the historical and cultural importance of the flute (Zheng & Leung, 2021).

Although the Ti-Tzu Ten Hole Bamboo Flute has a long and esteemed history, it is not impervious to the difficulties presented by modernity, globalization, and evolving musical preferences (Ayers & Horner, 2004). The rapid advancement of socio-economic development and the increasing cultural homogenization pose substantial challenges to preserving traditional musical practices. Nevertheless, these difficulties also present prospects for originality and adjustment as professionals strive to revitalize the flute tradition through imaginative partnerships, technological progress, and multidisciplinary methods (Wu, 2017; Yang et al., 2007).

## Conclusion

The comprehensive study on the evolution and preservation of the Ti-Tzu Ten Hole Bamboo Flute in Sichuan Province, China, underscores the instrument's enduring significance as a symbol of cultural identity and artistic innovation. This study highlights the crucial role of cultural preservation in maintaining a vibrant and diverse musical landscape by examining the historical development and conservation efforts associated with this unique tradition.

The study emphasizes the importance of a multifaceted approach to preservation, which includes formal education, traditional master-

apprentice relationships, community engagement, and technological integration. A holistic strategy like this guarantees the effective transmission of the intricate techniques and cultural values associated with the Ti-Tzu flute to future generations. To ensure the long-term survival and vitality of the Ti-Tzu Ten Hole Bamboo Flute tradition, it is essential that practitioners, educators, policymakers, and community stakeholders continue to work together. Through concerted efforts across educational, community, and technological domains, the Ti-Tzu tradition stands as a testament to the enduring power of cultural heritage in a rapidly changing world.

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