TRADITIONAL CHINESE MUSICAL SYMBOLS IN GAME MUSIC: ONTOLOGY AND AESTHETIC ANALYSIS

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Abstract. China's game industry's "cultural going global" strategy has positioned traditional musical symbols as core cultural expression carriers, but the contradiction between superficial symbol application and disconnected cultural connotations has become increasingly prominent in current creations. Existing studies primarily focus on symbols' communication effects from a communication perspective, overlooking systematic deconstruction at the musicological ontological level and failing to establish an interpretive framework linking symbols' formal characteristics, aesthetic connotations, and cultural genes. Using musicological ontological analysis, comparative musicology, and cultural semiotic interpretation, this study examines 34 representative Chinese game music works launched between 2018 and 2025 to construct an ontological classification system for traditional musical cultural symbols and interpret their aesthetic logic. The research identifies a four-dimensional system (temperament, instrument, form, genre symbols), reveals triple aesthetic expression logic (artistic conception adaptation, functional coordination, cultural resonance), and clarifies contemporary transformation paths of traditional Chinese musical aesthetic thoughts such as "the unity of emptiness and reality" and "harmony in diversity." This work fills gaps in musicological ontological studies on traditional symbols in game music, providing theoretical support and practical guidance for their modern media application through the constructed "ontology-aesthetics-culture" three-dimensional interpretive framework.
Keywords: *traditional Chinese musical symbols, game music, ontological classification, aesthetic interpretation, cultural translation*

Introduction

Practical background: Dilemmas in symbol application under cultural globalization

China's game industry has emerged as a pivotal carrier of cultural export, playing a vital role in promoting traditional culture globally. As an auditory embodiment of cultural genes, traditional musical symbols, such as the timbre of guqin, pentatonic scales, and folk song melodies, are widely integrated into benchmark overseas-oriented games like Genshin Impact and Naraka: Bladepoint, serving as important bridges for cross-cultural communication. However, the application of these symbols in current game music creation presents a striking polarization in quality. Many works suffer from prominent problems, including "symbol collage" (superficial stacking of traditional instrument sounds without logical connection), "temperament distortion" (misuse of musical scales or modes that deviate from traditional aesthetic norms), and "aesthetic separation" (disconnection between symbol use and the cultural connotations they are supposed to convey). For instance, an ancient-style game simply superimposes guzheng timbre as a "traditional symbol" but disregards the modal logic of the pentatonic scale, resulting in an auditory experience that conflicts with the pursuit of Oriental aesthetics and fails to evoke cultural resonance. This superficial application not only weakens the

cultural expression and artistic value of games but also wastes the potential of traditional musical resources to serve cultural communication.

Academic significance: Addressing gaps in musicological ontological research

Existing research related to traditional symbols in game music has formed three main strands, yet all suffer from notable limitations that hinder a comprehensive understanding of the topic. First, the cultural communication perspective (Yuan, 2024) focuses on analyzing the cross-cultural communication effects of symbols but simplifies musical symbols into mere "cultural labels," ignoring their inherent musical ontological characteristics (e.g., temperament, form, and playing techniques). Second, the game design perspective (Zagal et al., 2005) explores how music enhances players' immersion and emotional engagement but prioritizes functional effects over the aesthetic depth and cultural essence of traditional symbols. Third, the music education perspective emphasizes the role of game music in popularizing traditional music but focuses on application value rather than the creative logic and transformation mechanisms of symbols in digital media contexts. The core deficiency of these studies lies in their neglect of musicological ontological analysis, failing to establish an interpretive framework that links the formal characteristics, aesthetic connotations, and cultural genes of traditional musical symbols. To address this gap, this study integrates three cutting-edge fields: traditional Chinese musical aesthetics, musical semiotics, and game music ontological research. By adopting musicological ontological analysis to deconstruct the internal logic of symbols, this research compensates for the tendency of existing studies to "emphasize external effects while neglecting internal structures." It aims to provide a new theoretical perspective for the media inheritance of traditional music and offer practical guidance for improving the quality of traditional symbol application in game music creation.

Research questions

Building on the identified practical dilemmas and academic gaps, this study addresses the following research questions:

RQ1: From a musicological ontological perspective, what are the classification standards and core dimensions of traditional Chinese musical cultural symbols in Chinese game music?
RQ2: What differences exist in the ontological characteristics (temperament, instruments, form, genre) and aesthetic expression logic of traditional musical symbols across different types of game music (e.g., ancient style, Xianxia, historical, folk custom)?
RQ3: How are traditional Chinese musical aesthetic thoughts (e.g., "the unity of emptiness and reality," "harmony in diversity") integrated into game music creation through symbol transformation, and what are the key characteristics of these transformation paths?

Theoretical predictions

Based on the theoretical foundation of traditional Chinese musical aesthetics, musical semiotics, and comparative musicology, this study proposes the following theoretical predictions: (1) Traditional Chinese musical cultural symbols in game music can be

systematically classified into four ontological dimensions (temperament, instruments, form, genre), which together constitute a complete framework for analyzing symbol characteristics; (2) Different game types (shaped by their cultural contexts and functional needs) will exhibit distinct preferences in the application of symbol ontological characteristics and aesthetic expression logic; (3) The effective integration of traditional musical aesthetic thoughts into game music relies on three transformation mechanisms: adaptation to game scene artistic conception, coordination with game functional needs, and resonance with cultural cognition.

Paper structure and innovations

Chapter logic

This paper follows a logical thread of "theoretical construction → empirical analysis → value interpretation" to ensure coherence and rigor: First, through a literature review, it sorts out the theoretical foundation of core concepts (e.g., traditional musical symbols, game music), reviews existing research strands, and identifies key academic gaps; Second, it clarifies the research paradigm, sample selection criteria, and core research methods to lay the foundation for empirical analysis; Third, through ontological deconstruction and comparative analysis of selected game music samples, it constructs the symbol classification system, reveals aesthetic expression logic, and verifies the theoretical predictions; Finally, it discusses the theoretical connotations and practical significance of the research results, summarizes limitations, and proposes future research directions.

Innovations

This study contributes three key innovations to the field: Theoretical Innovation: Breaking through the limitations of existing binary classifications (e.g., instruments/melody), it constructs a four-dimensional ontological classification system covering "temperament-instrument-form-genre," realizing the refinement and systematization of traditional musical symbol classification in game music contexts; Methodological Innovation: Systematically applying classical musicological research methods to game music research, it establishes a research paradigm of "ontological deconstruction → aesthetic interpretation → cultural tracing" that integrates musicology and media studies; Perspective Innovation: From the perspective of "aesthetic inheritance," it interprets the cultural genes embedded in traditional musical symbols, reveals the transformation mechanism of traditional musical aesthetic thoughts in the digital age, and transcends the functionalism tendency of existing game music research.

Review of literature

Traditional Chinese musical cultural symbols

The concept of "traditional musical symbols" has evolved through centuries of academic discourse, with three distinct theoretical perspectives emerging to clarify their essence, each rooted in different disciplinary traditions and research objectives. The ontology-oriented perspective centers on the inherent musical properties of symbols, emphasizing that their essence lies in the objective, measurable elements of sound organization. Traditional musical symbols can be understood as "a systematic form of sound constructed around temperament and materialized through traditional

instruments." Their cultural significance can only be fully understood by first deconstructing their musical structure. The function-oriented perspective shifts the focus from musical form to social and cultural function. Traditional musical symbols can be regarded as "musical expressions that carry specific cultural meanings and serve as vehicles for social communication," emphasizing their role in reflecting cultural values, ritual practices, and collective memory (Tuohy, 2001; Thrasher, 1981). For example, bronze bells were not merely musical instruments but symbols of imperial power and social hierarchy. Similarly, regional folk songs represent local identity and lifestyles.

The structure-oriented perspective, introduced through the work of Nattiez (as reviewed in Drabkin, 1992), applies semiotic theory to analyze how musical symbols generate meaning through structural relationships. Nattiez proposed a three-level analytical framework "signifier (the musical sound itself), signified (the concept or emotion evoked), and significance (the cultural context that shapes interpretation)" which provides a systematic way to understand how traditional musical elements acquire symbolic meaning. In the context of game music, this means that a traditional instrument like the guqin may signify "elegance" in an ancient-style game but "mystery" in a Xianxia (immortal hero fantasy) game, depending on how it is combined with other musical elements and integrated into the game's narrative. Integrating these three perspectives, this study defines traditional Chinese musical cultural symbols as: Musical expressions derived from the traditional Chinese music system, characterized by distinct ontological properties (temperament, instruments, form, genre), endowed with cultural connotations and aesthetic values through social practice, and capable of generating meaningful interpretations in specific contexts. Their core feature is the dialectical unity of "ontological certainty" (fixed musical characteristics such as scale and timbre) and "meaningful fluidity" (cultural significance that adapts to changing contexts).

Game music

From a musicological standpoint, game music is defined by its dual attributes of functionality and aesthetics, as well as its unique interactivity, characteristics that distinguish it from other forms of media music such as film or television music (Collins, 2008). Functionality is a defining feature of game music, as it is specifically designed to support the game's mechanics, narrative, and emotional tone. Early game music focused primarily on reinforcing gameplay cues. As technology advanced, game music's functional role expanded to include narrative support and emotional manipulation. In open-world games such as The Legend of Zelda: Breath of the Wild, ambient music adapts to the player's environment (Bradford, 2020; Vidqvist, 2019). Aesthetics refers to game music's independent artistic value, its ability to please listeners and convey emotional or cultural meaning beyond its functional role. Many modern game soundtracks are celebrated as standalone musical works. This aesthetic dimension is particularly important for the integration of traditional musical symbols, as it allows game music to serve as a vehicle for cultural expression and artistic innovation. What truly sets game music apart is its interactivity, its ability to respond dynamically to player behavior and game state changes. Unlike film music, which follows a fixed narrative sequence, game music must adapt to the unpredictable nature of gameplay (Collins, 2008). This interactivity is achieved through modular composition and adaptive audio systems. For traditional musical symbols, this interactivity poses both challenges and opportunities: it requires symbols to be flexible enough to integrate into

dynamic musical structures while allowing innovative combinations that reflect the game's interactive nature.

Review of related studies

Theoretical foundations

The theoretical framework of this study is built on three interconnected bodies of literature: traditional Chinese musical aesthetics, musical semiotics, and comparative musicology. Traditional Chinese Musical Aesthetics provides a theoretical basis for understanding the aesthetic values and cultural connotations of traditional musical symbols. Core theories include "the theory of artistic conception," "the theory of vitality and charm," and "the unity of emptiness and reality." These ideas emphasize that traditional music aims to create a realm of meaning that integrates emotion, scene, and cultural implication. Musical Semiotics provides a methodological framework for analyzing how traditional musical symbols generate meaning in game contexts. Building on structural semiotics, musical semiotics focuses on the relationship between musical signs and their interpretations. The contextual nature of meaning implies that musical symbols acquire significance through their relationship to other symbols, the cultural background of the listener, and the situational context of performance (Drabkin, 1992). Comparative Musicology offers a cross-cultural and cross-contextual perspective on the use of traditional musical symbols. It aims to understand musical diversity by comparing musical systems from different cultures and historical periods (Kartomi, 1990). This theory provides a basis for understanding why different game types may adopt different traditional musical symbols. For instance, historical games set in imperial China are more likely to use court music elements, while folk custom games may draw on regional folk music traditions.

Classification of research veins

Existing research related to traditional musical symbols in game music can be divided into three main strands. The first strand is Traditional Music Ontology Research, which focuses on the inherent characteristics of traditional Chinese music, including temperament, instrumental techniques, and structural forms. This research uses rigorous musicological methods to study the "musical essence" of traditional music. However, this strand focuses primarily on the musical properties of symbols, with little attention to their functional and cultural roles in game contexts. The second strand is Game Music Research, which explores the role of music in enhancing game experiences, with a focus on functionality and player response (Collins, 2008; Zagal et al., 2005). This research draws on methods from psychology, computer science, and media studies to investigate how music affects player immersion, emotion, and behavior. However, it pays little attention to the cultural and musical characteristics of traditional symbols, treating them as generic "sound elements." The third strand is Traditional Symbol Media Application Research, which focuses on the use of traditional cultural symbols in media, including games, films, and television. This research draws on cultural studies and communication theory to explore how symbols are used to convey cultural identity and facilitate cross-cultural communication (Yuan, 2024). However, it lacks professional musicological analysis, focusing primarily on the "symbolic meaning" of elements rather than their musical properties.

Theoretical integration and research gap analysis

To systematically clarify the core elements of existing research and the targeted solutions of this study, theoretical foundations, research strands, core limitations, and corresponding solutions are integrated into a unified framework (*Table 1*). To further visualize the application of core concepts and theoretical foundations in game music, *Table 2* summarizes the multi-dimensional attributes of traditional musical symbols and their typical application cases across game types.

***Table 1**. Theoretical integration, research limitations and solution framework.*

Core elements	Specific Content	Existing Limitations	Solutions Proposed by This Study
Theoretical Foundations	Traditional Chinese Musical Aesthetics (artistic conception, emptiness-reality unity); Musical Semiotics (signifier-signified-significance, contextual meaning); Comparative Musicology (cultural context-shaping, cross-cultural adaptation)	Lack of integration between musical ontology and cultural meaning; No connection between static aesthetic theories and game interactivity; Insufficient linkage between cross-cultural theories and practical symbol application	Construct an interdisciplinary theoretical framework integrating "ontological properties-cultural meaning-interactive adaptation"; Explore adaptation mechanisms for traditional aesthetics in game contexts; Summarize symbol application patterns based on cultural context theory
Research Strands	Traditional Music Ontology Research (temperament, techniques, forms); Game Music Research (player immersion, interactivity, functionality); Traditional Symbol Media Application Research (cultural communication, identity expression)	Traditional Music Research: Ignores game functionality and cultural context; Game Music Research: Treats symbols as generic sound elements, lacks musical depth; Traditional Symbol Media Application Research: Lacks professional musicological analysis	Integrate musicological methods (score/acoustic analysis) with game design research; Develop a four-dimensional symbol classification system (temperament-instrument-form-genre); Establish a "musical property-cultural meaning" linkage analysis framework
Key Research Gaps	Theoretical Gap: Lack of systematic ontological classification; Methodological Gap: Underutilization of professional musicological methods; Content Gap: Insufficient research on aesthetic transformation and interactivity	Binary classification fails to capture symbol complexity; Most studies rely on cultural/media methods, neglecting musical logic; No guidance for balancing cultural authenticity and interactive design	Propose a multi-dimensional classification system with clear operational indicators; Adopt qualitative research design (musicological analysis + semiotic interpretation); Explore three transformation mechanisms (aesthetic adaptation, functional coordination, cultural resonance)

***Table 2**. Multi-dimensional attributes and typical application cases of traditional musical symbols.*

Symbol Dimension	Core Attributes	Operational Indicators	Typical Game Type Applications
Ontological Properties	Temperament	Pentatonic/septatonic scale, Gong/Shang/Jiao/Zhi/Yu modes	Ancient-style games: Pentatonic scale (Gong mode); Historical games: Septatonic scale (Gong mode)
	Instruments	Guqin (harmonics), guzheng (sweeping), bianzhong (chiming), xiao (breathy timbre)	Xianxia games: Guqin + xiao (ethereal atmosphere); Historical games: Bianzhong + sheng (imperial ritual sense)
	Form	Yuefu form, guchui form, modular segment structure, guqin form, folk tune form	Folk custom games: Yuefu form (lyrical narrative); Combat/Action games: Modular guchui form (dynamic adaptation); Ancient-style games: Guqin form (elegant expression)
	Genre	Court music, folk music, literati music, religious music	Historical games: Court music (imperial power expression); Folk custom games: Jiangnan folk music (regional identity); Xianxia games: Religious music (mysterious sense)
Cultural-Aesthetic Meanings	Cultural Connotation	National identity, regional characteristics, historical context	Global-oriented games: Pentatonic scale + guzheng (Chinese cultural symbol); Folk custom games: Hakka folk songs (local cultural expression)
	Aesthetic Value	Elegance, solemnity, ethereality, warmth	Literati-themed games: Guqin solo (elegance); Xianxia games: Xiao + ambient sound (ethereality)

Interactive Adaptation	Functional Coordination	Narrative support, gameplay feedback, emotional guidance	Exploration scenes: Soft guzheng melody (tranquility); Combat scenes: Fast drum rhythm (tension)
	Technical Realization	Modular composition, adaptive triggering, dynamic mixing	Open-world games: Modular folk music segments (player movement-triggered); Combat games: Adaptive drum pattern changes (attack sequence-linked)

Theoretical gap: Lack of a systematic ontological classification system

Existing research lacks a systematic classification system for traditional musical symbols in game music that integrates both musical properties and cultural meanings. Most studies adopt a binary classification of "instruments" or "melodies", which fails to capture the complexity of traditional musical symbols. For example, the "court sense" conveyed by traditional symbols in historical games is not merely the result of using a specific instrument (like bianzhong) but the combination of temperament (septatonic scale), form (guchui form), and genre (court music). Additionally, no existing framework connects the ontological characteristics of symbols to their aesthetic and cultural meanings. Traditional Music Ontology Research focuses on musical properties but ignores cultural meaning, while Traditional Symbol Media Application Research emphasizes cultural meaning but overlooks musical properties. This disconnect leads to a superficial understanding of how symbols work in games, as it fails to explain why certain combinations of musical elements are more effective in conveying cultural and aesthetic meanings than others. For example, a game that uses a guzheng (instrument) but misapplies the pentatonic scale (temperament) may fail to evoke the intended "Oriental aesthetic" because the musical properties are inconsistent with the cultural meaning.

Methodological gap: Underutilization of professional musicological methods

Few studies use professional musicological methods to analyze traditional musical symbols in game music. Instead, most rely on cultural or media research methods, which focus on the "external effects" of symbols rather than their "internal musical logic." Professional musicological methods, such as score analysis, acoustic measurement, and musical form analysis, are essential for understanding the ontological characteristics of symbols and their role in aesthetic expression.

Content gap: Insufficient research on aesthetic transformation and interactivity

Little research explores how traditional musical aesthetic thoughts, such as "the theory of artistic conception" and "the unity of emptiness and reality"; are transformed and adapted to the interactive nature of game music. Traditional Chinese musical aesthetics is rooted in static forms like guqin solos and folk songs, which are designed for passive listening. Game music, by contrast, is interactive, requiring symbols to adapt to dynamic gameplay and player behavior. Existing research does not explain how traditional aesthetic principles can be translated into interactive musical systems. For example, it is unclear how to maintain the "ethereal" quality of Xianxia game music, rooted in the Taoist aesthetic of "emptiness", while making the music responsive to player actions like exploration and combat. Additionally, few studies explore the transformation paths of traditional aesthetic thoughts in digital media, such as how "harmony in diversity" (he er butong) is reflected in the integration of traditional and

modern musical elements. This gap limits the practical value of existing research, as it cannot provide clear guidance for game composers on how to effectively integrate traditional aesthetic principles into interactive music design.

Cross-fisciplinary dialogue and research trends

The study of traditional musical symbols in game music is an interdisciplinary endeavor that requires dialogue between musicology, game design, and cultural studies. One notable research trend is the focus on cultural authenticity and adaptation in global media (Robertson, 2025; Eklund et al., 2019; Hevia, 2016). Successful adaptation requires a balance between cultural authenticity and global appeal. Another trend is the use of digital technologies in research, such as AI-driven music analysis and player experience tracking. A third trend is the emphasis on practical application and industry collaboration. Despite these positive trends, there remains a need for more systematic and in-depth research that addresses the theoretical, methodological, and content gaps identified in this review.

Materials and Methods

This study adopts a qualitative research design integrating musicological analysis, semiotic interpretation, and comparative analysis to explore the ontological construction, aesthetic logic, and interactive adaptation of traditional Chinese musical cultural symbols in Chinese game music. Guided by musicological and aesthetic perspectives, the research focuses on three core objectives: establishing a multi-dimensional classification system for these symbols, analyzing their aesthetic expression patterns across different game genres, and identifying the transformation mechanisms of traditional musical aesthetics in interactive contexts. The research scope is limited to 34 Chinese games released between 2018 and 2025. "Chinese games" refer to those independently developed or co-developed by Chinese game companies, with the core creative team from China and explicit integration of traditional Chinese cultural themes. The samples were selected based on three criteria: cultural representation (explicit integration of traditional Chinese musical elements), market influence, and genre diversity (covering ancient-style, historical, Xianxia fantasy, and folk custom genres). Representative works include Genshin Impact, The Legend of Sword and Fairy VII, Naraka: Bladepoint, Romance of the Three Kingdoms: Strategy Edition, Black Myth: WuKong, and Justice Online. From the soundtracks of these games, 48 core traditional musical symbol samples were identified through systematic collection, screening, and expert verification.

Data collection involved two main channels: (a) Musical text data: official scores, transcribed sheet music, and official soundtrack albums; (b) Cultural and aesthetic data: academic documents and expert interviews to confirm the cultural connotations and aesthetic values of symbols. Analytical methods centered on musicological and aesthetic perspectives included: (a) Musicological analysis: examining the ontological properties of symbols through scale/mode identification, melodic contour analysis, and traditional form recognition; (b) Semiotic interpretation: applying the three-level framework (signifier–signified–significance) to explore aesthetic and cultural meaning-making processes (Drabkin, 1992); (c) Thematic and comparative analysis: identifying core aesthetic themes and cross-genre differences through qualitative coding. To ensure research quality, triangulation was adopted by combining musicological analysis,

aesthetic interpretation, and expert consensus. This study acknowledges limitations, including the time frame of game samples, the focus on Chinese cultural contexts, and the reliance on finished soundtracks. Mitigation strategies included rigorous sample selection and cross-validation of aesthetic interpretations through expert consensus.

Results and Discussion

Through the musical content analysis of 34 authentic domestic games, this study identified 48 core traditional Chinese musical cultural symbols, and ultimately established a four-dimensional classification system of "temperament-instrument-form-genre". The core laws and transformation logic of symbol application are summarized as follows.

Core types and application preferences of traditional musical symbols

The research found that the selection of traditional elements in game music presents distinct concentration and type adaptability, with the core laws as follows: (1) Core Symbol Types: In terms of temperament, the pentatonic scale is dominant and the most recognizable traditional temperament element; among instruments, the guzheng, guqin, and suona are the most widely used, adapting to different atmospheres such as lyrical, elegant, and lively respectively; in terms of form, concise Yuefu-style lyrical segments, flexibly switchable modular guchui music, and guqin form are commonly adopted; in terms of genre, literati music and folk music are the main types, covering the needs of most game scenes. (2) Cross-Type Application Differences: Ancient-style games: Prefer instruments such as guqin and guzheng paired with the pentatonic scale, highlighting the aesthetic of "elegant simplicity" and fitting the traditional literati artistic conception; Xianxia (immortal hero fantasy) games: Frequently use instruments such as xiao and hulusi, combined with ethereal free-meter melodies to create a sense of "mysterious transcendence" of fairyland; Historical games: Focus on court instruments such as bianzhong and sheng paired with the heptatonic scale, emphasizing the solemnity of "ritual grandeur" and adapting to historical scenes; Folk custom games: Primarily use folk instruments such as suona and erhu as well as local minor tunes, emphasizing the vivid atmosphere of "regional authenticity" and restoring the characteristics of folk custom scenes. (3) Flexible Adaptation of Symbol Meanings: The same traditional symbol can convey different connotations in different types of games. For example, the pentatonic scale appears elegant in ancient-style games, ethereal in Xianxia games, and simple in folk custom games, adapting to the narrative needs of different games.

Core transformation logic of integrating traditional musical elements into games

To better adapt traditional music to the interactive characteristics of games, the study summarized three practical transformation mechanisms that both retain traditional charm and meet the needs of game experience, consistent with the theoretical predictions: Aesthetic Adaptation (Simplification): Streamline complex traditional musical forms, retain core melodies or segments, or decompose them into flexibly switchable modules to adapt to interactive needs such as game scene switching and gameplay changes. For instance, the music of combat scenes can be decomposed into different segments that transition naturally with the progress of the battle, which not only preserves the core style of traditional music but also fits the game rhythm.

Functional Coordination (Atmosphere Matching): Precisely match the selection of traditional symbols with the game scene atmosphere and gameplay emotion. For example, the suona is used in lively folk custom scenes, the guqin in quiet puzzle-solving scenes, and the combination of big drums and suona in intense combat scenes, enhancing players' sense of scene immersion through music. Cultural Resonance: Prioritize the use of popular traditional elements such as the pentatonic scale, guzheng, and guqin to quickly arouse players' cognition and favor of traditional Chinese culture. Such symbols can convey traditional charm without complex interpretation, making them particularly suitable as carriers of cultural expression in games.

The results contribute to the understanding of traditional Chinese musical symbols in game music from musicological and aesthetic perspectives, aligning with and extending existing scholarship. First, the validated multi-dimensional classification system addresses the theoretical gap identified in the literature review. By integrating temperament, instrument, form, and genre, this study provides a holistic tool for analyzing traditional musical symbols, echoing semiotic emphasis on coherent meaning construction (Drabkin, 1992). The dominance of pentatonic scales and widely recognized instruments reflects the aesthetic preference for familiar cultural markers deeply rooted in Chinese musical tradition. Second, cross-genre aesthetic patterns reveal the adaptive flexibility of traditional musical aesthetics. Ancient-style games' "elegant simplicity" aligns with classical theories of artistic conception, while historical games' "ritual grandeur" resonates with Confucian aesthetic ideals of harmony and order. Xianxia games' "ethereal transcendence" innovatively extends Taoist aesthetic traditions, demonstrating how traditional aesthetics can be reimagined for fantasy contexts. Folk custom games' "regional authenticity" supports comparative musicology's emphasis on cultural context (Kartomi, 1990). The flexible adaptation of symbol meanings, where the same element conveys different connotations across genres, further confirms the contextual nature of musical meaning-making proposed by musical semiotics (Drabkin, 1992). Third, the identified transformation mechanisms clarify how traditional aesthetics interact with game design. Aesthetic adaptation resolves the tension between traditional complexity and game interactivity, addressing the content gap of how static traditional aesthetics adapt to dynamic media. Functional coordination confirms music's emotional guiding role in games (Collins, 2008), while cultural resonance underscores the symbolic value of traditional music in transmitting cultural identity. Player feedback and expert consensus suggest that retaining core aesthetic features of traditional music is more likely to evoke cultural resonance than superficial imitation of musical symbols. Contextualizing these results within broader scholarship, this study complements existing work on game music aesthetics by focusing on traditional Chinese elements, which have been understudied compared to Western classical or electronic music in game contexts. The findings also respond to the call for culturally specific game audio research, demonstrating how non-Western musical traditions can enrich game aesthetic experiences.

Conclusion

This study systematically explores traditional Chinese musical cultural symbols in game music from musicological and aesthetic perspectives, achieving its three core objectives. The key contributions are threefold: establishing a multi-dimensional classification system, identifying cross-genre aesthetic expression patterns, and

uncovering transformation mechanisms of traditional musical aesthetics in interactive contexts. Summarizing the main findings, traditional musical symbols in game music are not mere decorative elements but active carriers of cultural and aesthetic meaning. Their effectiveness depends on balancing "authenticity" (retaining core musical and aesthetic features) and "adaptability" (adjusting to game interactivity and narrative needs). Cross-genre variations reflect the responsiveness of traditional aesthetics to different narrative themes, while the flexible adaptation of symbol meanings highlights the importance of context in musical expression. The study's practical implications are significant for game audio design: Composers and designers can use the classification system to select symbols aligned with their aesthetic goals, leverage cross-genre patterns to enhance narrative-aesthetic coherence, and apply transformation mechanisms to balance tradition and innovation. Future extensions of this research could include cross-cultural comparative studies on the perception of traditional Chinese musical symbols by overseas players, explore the evolutionary law of symbol application in Chinese game music from 2010 to 2025, and dig into the aesthetic expression of underrepresented genres such as religious music and frontier music. Overall, this study underscores the enduring aesthetic value of traditional Chinese music in contemporary game design. By bridging musicology, aesthetics, and game studies, it demonstrates how traditional cultural heritage can be revitalized through digital media, offering insights for both academic research and practical creation centered on cultural and aesthetic transmission.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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