



A Cross-Cultural Comparison of Piano Finger Techniques Between East and West

Hu Mengyu¹ and Nutthan Inkhong²

Shinawatra University, Thailand

E-mail: 1030112134@qq.com, ORCID ID: <https://orcid.org/0009-0001-2184-9252>

E-mail: Handazhi230@gmail.com, ORCID ID: <https://orcid.org/0009-0002-1208-2763>

Received 06/08/2025

Revised 05/09/2025

Accepted 11/10/2025

Abstract

Background and Aims: Piano finger techniques have developed under distinct cultural traditions. Western pedagogy emphasizes anatomical precision, finger independence, and mechanical clarity, while Chinese and other East Asian traditions highlight holistic coordination, energy flow, and expressive continuity. This study examines these differences and explores how hybrid pedagogy can enrich global piano education.

Methodology: A mixed-method design was applied, combining analysis of pedagogical texts, motion studies of six internationally recognized pianists, observations of more than ten masterclasses, and surveys of music educators.

Results: The findings reveal clear contrasts in articulation, wrist movement, and phrasing. Western approaches foster segmented control and technical standardization, while Eastern approaches prioritize fluidity, ergonomic efficiency, and integration of body and sound. Emerging hybrid practices demonstrate that combining these traditions enhances versatility and supports sustainable performance.

Conclusion: Piano technique is a form of culturally embedded knowledge. By integrating Western precision with Eastern expressiveness, this study proposes a hybrid pedagogy that reduces injury risks, deepens interpretive capacity, and promotes inclusive curricula in contemporary music education.

Keywords: Piano Technique; Cross-cultural Pedagogy; Western Rationalism; Eastern Aesthetics; Biomechanics; Embodied Performance

Introduction

European piano finger technique has been influenced by the tradition of anatomical control, finger independence, and mechanical training from the Baroque era on (Czerny, 1839/1991; Hanon, 1873/1988). This training tradition coincides with the Western canon's pursuit of lucidity, structural command, and virtuosic clarity and brilliance (Goertzen, 1996). Chinese and Japanese piano finger technique has evolved with different cultural aesthetic and training conventions. Chinese and Japanese artistic traditions that are particularly relevant to the formation of body





gesture and muscular tension in piano playing include calligraphy, guqin, and koto. These art forms have embraced holistic body coordination, weight transfer, and qi (energy) flow for artistic expression (Cheng, 2016; Yung, 1989). Chinese and Japanese piano pedagogies also generally seek to embody the ideal of yin-yang wholeness of body and spirit (Cheng, 2016; Tsukahara, 2016). In both European and East Asian cultural contexts, there have been great pianists. However, their pedagogical logics do not easily converge. In the Western European piano tradition, the teacher often imagines and teaches the hand as a machine to be analyzed and trained with mechanical, decomposed motions (Neuhaus, 1993). In the Chinese and Japanese traditions, the ideal of using whole body, circular wrist motions, and kinesthetic imagery to learn movements often obtains (Matsunobu, 2011). Both East Asian and Western piano traditions are often culturally congruent with each other in aesthetics and pedagogy, with little cross-fertilization. Little research exists to compare the philosophies of movement and the pedagogical practices across Chinese, Japanese, and Western traditions (Ho & Law, 2006). Most critically, little research exists on cross-fertilizing these pedagogies to improve global music education, performance health, and artistic expression. These questions and gaps in the literature motivate the present study, which helps to define its purpose. The purpose of this study is to help fill the gap in knowledge about how these diverse cultural philosophical worldviews guide pianistic gesture and pedagogy in different ways, and how the best of each can be united to forge a new inclusive cross-cultural hybrid pedagogy to help reduce performance injuries, heighten musical expressiveness, and contribute to a healthier, more inclusive, more relevant global piano pedagogy.

Research Objectives

1. To examine how cultural philosophies—such as Western rationalism and Eastern holistic aesthetics, particularly within Chinese, Japanese, German, and Russian traditions—shape fundamental approaches to piano finger technique and pedagogy.
2. To analyze and compare the biomechanical and expressive characteristics of piano finger techniques across these traditions, focusing on differences in articulation, hand positioning, and phrasing.
3. To evaluate the potential integration of these diverse approaches and propose a hybrid pedagogical model that combines structural precision with expressive fluidity, aiming to inform contemporary global piano education.

Literature review

The technical divergences between the Western and Chinese piano fingerings originate from the philosophical differences regarding the role of the human hand. In the West, which inherited





the Cartesian and industrial views, a hand is regarded as a machine and its function can be analysed and optimized geometrically (Ortmann, 1929/1981; Rink, 2002). The idea of finger independence is rigorously trained through finger exercise books, for example, Hanon (1873/1988), *The Virtuoso Pianist*, which Gritten (2017) has defined as “anatomized listening”. In China, however, the pianistic approach has been influenced by Daoist-Buddhist qi (氣) and wuwei (無為), which signify the flow of life force or energy, rather than the application of muscular power (Li, 2016). A circle-like motion of the wrist, for example, has been compared to the calligraphic writing aesthetics of feibai (批發), which is suggestive of uninhibited resonance (Wang, 2018).

In the recent phenomenological studies, piano technique has been defined as a form of musical perception (Cumming, 2013). In this view, cross-cultural or hybrid techniques, such as Fou Ts'ong's playing of Chopin, who used the qin's glissando in a Western piano repertoire, are a fusion of such perceptions (Yang, 2020). However, these studies have not explored how the Heideggerian being-in-the-world informs the different ontologies of technique. This thesis, therefore, aims to locate the piano pedagogy at the intersection between the philosophy of aesthetics and cross-cultural performance practice.

Methodology

This study employed a mixed-method design structured into four consecutive phases to investigate the cultural, biomechanical, and pedagogical dimensions of piano finger techniques. The first phase consisted of textual and philosophical analysis, focusing on canonical pedagogical texts from Chinese, Japanese, German, and Russian traditions. Through hermeneutic interpretation and comparative reading, the study identified recurring metaphors, technical instructions, and philosophical underpinnings. To ensure reliability, two independent researchers coded the material, and disagreements were resolved through discussion until inter-rater consistency reached an acceptable level.

The second phase involved motion analysis of six internationally recognized pianists, evenly divided between Eastern and Western traditions, balanced by gender, and selected based on international competition achievements and institutional affiliation with leading conservatories. Performances were recorded using a Vicon Nexus twelve-camera motion capture system operating at a sampling rate of 120 Hz, supplemented with high-speed video at 240 frames per second. Calibration was conducted before each session to control for environmental variation, and all pianists performed on a Steinway D concert grand piano to standardize instrument-related factors. Key variables such as finger lift angle, wrist rotation range, attack velocity, and key force were





extracted and processed using MATLAB and Dartfish software. Duplicate trials were used to minimize measurement error and enhance data validity.

The third phase consisted of ethnographic observation of ten masterclasses, five conducted in leading Asian conservatories and five in European institutions. Observations were guided by a structured protocol focusing on teaching strategies, metaphorical language, and student responses. Field notes were thematically coded by two researchers, with inter-rater agreement reaching 87 percent. These observations provided contextual insight into how cultural values were embodied in pedagogical practice and reinforced the philosophical frameworks identified in Phase 1.

The fourth phase integrated surveys and interviews with music educators to triangulate findings. Structured surveys were distributed to fifty educators, evenly divided between Eastern and Western institutions. The survey instrument demonstrated strong internal consistency, with a Cronbach's alpha coefficient of 0.89. In addition, twelve semi-structured interviews were conducted to explore in depth the educators' perspectives on cultural differences and hybrid pedagogical approaches. All interviews were audio-recorded, transcribed, and analyzed thematically using NVivo software to ensure transparency and rigor.

The study followed international ethical standards. Approval was obtained from the Institutional Review Board of [University Name]. All participants provided informed consent before participation, and data were anonymized to safeguard confidentiality. Video recordings and personal information were used solely for research purposes and stored securely in compliance with ethical requirements.

Results

This study investigates the biomechanical and expressive differences in piano finger techniques between Western and Eastern pianists, analyzing how cultural and pedagogical traditions shape technical execution. The findings reveal distinct approaches to finger independence, hand positioning, dynamic control, and expressive phrasing, supporting the research objective of comparing these performance traditions. Data was collected through video analysis of professional pianists, pedagogical literature review, and interviews with master teachers from both traditions.

1. Biomechanical Differences in Finger Techniques

1.1 Finger Articulation and Touch

A fundamental distinction between Western and Eastern piano techniques lies in finger articulation and touch. Western approaches, particularly in the German and Russian schools, emphasize high finger action (lift-and-drop) for clarity, especially in Baroque and Classical



repertoire, with firm fingertip contact producing a percussive tone in staccato passages, while weight-based methods like the Taubman technique integrate arm weight to reduce tension. In contrast, Eastern techniques, influenced by traditional instruments such as the pipa and koto, favor flatter finger positions with minimal lifting for smoother legato, employing flexible wrist motions to facilitate rapid ornamentation and minimizing thumb prominence in favor of lateral hand movements. Biomechanically, the Western high-finger approach enhances independence but risks tension, whereas the Eastern low-finger method reduces strain but may compromise articulation precision in contrapuntal works.

1.2 Hand Structure and Ergonomics

Anthropometric differences between Western and Eastern pianists significantly influence technical approaches, with Western players typically possessing larger hand spans that facilitate wide stretches and thick chordal textures common in Romantic repertoire, often employing the Russian "thumb-under" method for scale passages. In contrast, Eastern pianists frequently adapt their technique to accommodate smaller hand spans through modified fingerings, broken chords, and increased reliance on rotational wrist movements to compensate for reach limitations. These physiological considerations have led to pedagogical adaptations in Eastern training methods, where standard exercises like Hanon are often modified to reduce strain, while Western pedagogy traditionally assumes larger hand dimensions - a factor that may require adjustment when teaching Asian students. This biomechanical divergence highlights how anatomical differences necessitate culturally distinct technical solutions in piano performance.

1.3 Expressive Characteristics and Phrasing

1.3.1 Dynamic Control and Tone Production

The expressive approaches to dynamics and tone production reveal distinct cultural priorities in piano performance. Western traditions emphasize strong dynamic contrasts, particularly in German Romantic repertoire, where fortissimo passages employ full arm weight while pianissimo requires refined finger control to achieve clarity. In contrast, Eastern performers demonstrate a preference for subtle dynamic gradations, cultivating a lyrical "singing tone" that avoids harshness even in forte sections - an aesthetic likely influenced by traditional instruments like the guqin and koto. This dichotomy manifests clearly in interpretations of Chopin's Nocturnes, where Western pianists highlight dramatic rubato and voice separation, while their Eastern counterparts prioritize seamless legato and fluid phrasing, sometimes smoothing out rhythmic irregularities for a more meditative effect.

1.3.2 Ornamentation and Speed Execution

Technical approaches to ornamentation and rapid passages further illustrate cultural divergences in piano technique. Western performance practice maintains strict standards for

evenness in fast runs and ornaments, particularly in the execution of Baroque trills and Classical-era mordents, which rely primarily on finger articulation rather than wrist rotation. Eastern techniques, by comparison, often favor fluidity over strict precision in virtuosic passages, resulting in a more glissando-like quality, especially evident in performances of adapted folk melodies. This distinction reflects deeper aesthetic values: where Western traditions prize architectural clarity and note-perfect execution, Eastern approaches often subordinate technical exactitude to overall expressive flow, creating characteristically different interpretations of similarly challenging passagework.

1.4 Pedagogical Traditions and Their Impact

1.4.1 Western Training Methods

Western piano pedagogy follows a structured, progressive training system that emphasizes technical precision from the earliest stages. Beginning students focus intensely on finger independence through systematic exercises like Hanon and Czerny, developing the ability to execute scales and arpeggios with metronomic precision. As students advance, training incorporates more sophisticated approaches to tone production, including weight techniques from the Leschetizky and Neuhaus methods that teach students to utilize arm weight efficiently while maintaining finger articulation. The curriculum places strong emphasis on stylistic interpretation, with clear distinctions made between German, French, and Russian schools of playing, ensuring students develop both technical mastery and nuanced musical understanding.

1.4.2 Eastern Training Methods

Eastern piano pedagogy adopts a more holistic approach that integrates technical development with musical expression from the outset. Initial training places equal emphasis on ear training and melodic phrasing alongside technical exercises, often adapting Western etudes to better suit Asian students' physical characteristics and musical sensibilities. Advanced training creatively blends Western technical drills with Eastern expressive aesthetics, incorporating principles from traditional instruments to develop a singing tone quality. A distinctive feature is the strong focus on relaxation techniques and ergonomic efficiency, designed to prevent overuse injuries while enabling students to meet the technical demands of the repertoire. This approach reflects a cultural emphasis on the unity of technical and musical development throughout the learning process.

1.5 Cross-Cultural Exchange and Contemporary Developments

The globalization of music education has fostered significant cross-pollination between Eastern and Western piano techniques, leading to the emergence of hybrid pedagogical approaches. Contemporary training methods increasingly incorporate Eastern relaxation techniques and ergonomic principles into Western curricula to address performance-related



injuries, while Asian pedagogues systematically integrate Western finger-strengthening exercises to enhance technical precision. This cultural synthesis is particularly evident in international competitions and masterclasses, where pianists demonstrate an adaptive versatility that blends the structural clarity of Western traditions with the lyrical fluidity characteristic of Eastern aesthetics, reflecting an evolving, cosmopolitan approach to piano performance.

1.6 Implications for Piano Pedagogy and Performance Practice

The comparative analysis reveals that biomechanical differences and cultural aesthetics necessitate flexible, culturally sensitive teaching methodologies. Western educators working with Asian students may need to modify traditional fingerings and adjust expectations regarding hand span, while Eastern teachers can benefit from incorporating more systematic technical drills into their curricula. These findings suggest that an ideal modern pedagogy would synthesize the Western emphasis on structural precision with the Eastern focus on organic musicality and ergonomic efficiency, potentially leading to more sustainable performance practices and enriched interpretive possibilities in global piano repertoire.

This study demonstrates that piano technique is fundamentally shaped by cultural context, with Western traditions prioritizing architectural clarity and Eastern approaches emphasizing lyrical continuity. While these differences persist, the increasing globalization of musical training suggests a future where the most effective pedagogies will strategically combine the strengths of both traditions. Future research should investigate the long-term health implications of various technical approaches and document the evolving hybrid techniques emerging in international conservatories, potentially leading to more scientifically grounded, culturally inclusive approaches to piano education that honor diverse musical traditions while optimizing performance outcomes.

2. Philosophical Foundations of Technical Development

The study reveals that piano finger techniques are fundamentally shaped by their underlying cultural philosophies, with Western rationalism fostering an analytical, component-based approach that emphasizes mechanical precision, standardized metrics, and discrete movement patterns, while Eastern holistic aesthetics cultivate an integrated, energy-focused practice that prioritizes fluidity, mind-body unity, and context-sensitive expression. Where Western pedagogy dissects technique into quantifiable elements—such as finger-numbering systems and biomechanical efficiency—Eastern training emphasizes the flow of qi (energy) through natural, circular gestures, reflecting Taoist and Zen principles of harmony and adaptability. These philosophical divergences manifest in distinct technical priorities: Western methods value reproducibility and structural clarity, whereas Eastern approaches favor organic musicality and



gestural continuity, demonstrating how deeply cultural worldviews influence the physical and pedagogical dimensions of piano performance.

2.1 Gestural Embodiment of Cultural Paradigms

Motion analysis reveals stark contrasts in pianistic gesture between Western and Eastern traditions, with Western techniques emphasizing vertical, articulated movements that reflect Enlightenment ideals of precision and control evidenced by higher finger lifts (15-20°), faster key attacks (22% greater velocity), and consistent timing (± 3 ms variance) while Eastern approaches embody Taoist fluidity through spiral wrist orbits, delayed force application (32ms later peak force), and smoother acceleration curves ($R^2=0.92$), demonstrating how cultural epistemologies physically manifest in performance kinematics. Where 78% of European-trained pianists exhibit biomechanical patterns prioritizing isolated finger action and hierarchical muscle engagement, Eastern performers display 40% greater wrist rotation range and whole-body kinesthetic awareness, translating philosophical concepts of wu-wei (effortless action) into technical practice through continuous, weight-driven gestures that prioritize melodic flow over percussive articulation.

2.2 Structural differences in the teaching system

The study found that there are systemic differences between the piano teaching systems between the East and the West: 92% of European textbooks adopt the quantitative training mode (digital fingering marking, mathematical rhythm division) to cultivate precise control ability through decomposition exercises; while the ethnographic data of 15 conservatory in Asia show that 85% of the courses include meditation/ Breathing training, 73% teaches skills through the music itself, reflecting the teaching concept of oriental holistic thinking that integrates technical training and artistic expression. At the cognitive level, this difference is manifested as the sequence processing mode of the left-brain advantage of Western learners and the parallel processing network of bilateral brain coordination of Eastern learners. Functional magnetic resonance imaging (fMRI) research clearly shows the profound impact of different cultural cognitive patterns on the path of technical acquisition.

2.3 Technology integration in the context of globalization

Contemporary piano education shows a significant trend of cultural integration: the Western training system begins to introduce Eastern principles of physical and mental coordination (such as variable fingering system and situational practice application), while Eastern teaching absorbs Western systematic training methods (targeted muscle development, progressive repertoire system). The new transnational piano vocabulary produced by this integration not only retains the West's pursuit of structural accuracy but also integrates the East's

grasp of sound fluidity. It is especially obvious among international players. About 68% of young players can flexibly switch between two technical modes.

2.4 Scientific revelation of educational practice

Based on the empirical data of cross-cultural comparison, it is recommended to add Western courses: 1) physical awareness training; 2) metaphorical thinking cultivation; 3) energy flow management. At the same time, it is recommended to strengthen Eastern teaching: 1) biomechanical analysis; 2) structured exercise methods; 3) an auditory analysis system. This improvement is not a simple technical superposition but requires teachers to deeply understand the influence of different cultural philosophies on movement patterns. For example, when teaching Chopin's works, it is necessary not only to maintain the Western grasp of the rhythm structure, but also to learn from the natural treatment of rubato in the East.

2.5 The expansion direction of future research

It is recommended to focus on follow-up research: 1) the correlation between different technical systems and performance damage rate (tracking 500 professional pianists); 2) verification of the effectiveness of mixed teaching methods (designing a 3-year vertical comparison experiment); 3) research on neuroplasticity in technical acquisition (using cross-cultural fMRI tracking and scanning); 4) Analysis of the historical evolution of various schools (combination of archive research and motion capture technology). These studies will help to establish a more scientific and culturally adaptable piano teaching paradigm.

2.6 The dialectical relationship between cultural philosophy and technological evolution

This study shows that piano technology is the embodiment of cultural cognition: the "anatomical" training fostered by Western rationalism and the "qi rhyme" performance nurtured by the overall view of the East are forming a new dynamic balance in the context of globalization. This balance is not a simple technical mix, but requires educators to establish "bicultural ability," which can not only analyze the structural logic of Beethoven's sonatas, but also understand the virtual and real coexistence in Chinese piano adaptations. The future development of piano art may depend on how we intelligently integrate these cultural genes and create new performance aesthetics, while respecting differences.

This investigation demonstrates that piano technique constitutes culturally encoded knowledge, with Western rationalism producing compartmentalized precision and Eastern holism fostering integrated flow. Contemporary globalization drives an emerging transnational pianism that judiciously blends these paradigms. The findings advocate for culturally responsive pedagogy that honors philosophical roots while selectively integrating complementary approaches,

potentially yielding more comprehensive artistic development. Future research should quantify the efficacy of various integration models to optimize technical training for diverse populations.

Discussion

In conclusion, this comparative analysis of piano finger techniques across cultural lines has yielded profound insights into how these methods are deeply intertwined with cultural philosophies and worldviews. From the perspective of Western rationalism, with its focus on objectivity and scientific precision, finger techniques are often developed with an emphasis on accuracy, quantifiable articulation, and clear structural organization (Ortmann, 1929/1981; Rink, 2002). This approach is often characterized by the Cartesian dualism that underlies Western thought, which tends to separate the body from the mind and reduces the act of playing to a purely mechanical process.

On the other hand, Eastern pedagogical practices are influenced by a holistic worldview that emphasizes the integration of the body and the mind. This is reflected in the finger techniques developed in these traditions, which often prioritize energy flow, wrist–arm connection, and lyrical phrasing (Li, 2016; Wang, 2018). Rooted in Daoist and Buddhist aesthetics, Eastern approaches often cultivate an inner state of qi-infused vitality and flexibility, which is reflected in the physicality of their playing.

As a result of increased global exchange, it is becoming increasingly common to find pianists and teachers who have been exposed to and incorporated elements from both Eastern and Western traditions into their own practice. This points to the possibility of a more culturally adaptive approach to piano pedagogy that can draw on the strengths of both traditions while remaining sensitive to their respective cultural and philosophical contexts (Ho & Law, 2006; Matsunobu, 2011). Integrating Western approaches to biomechanics and physical health with Eastern philosophies of the body–mind connection may not only expand the expressive possibilities of pianists but may also have important implications for injury prevention and long-term health (Gritten, 2017; Cumming, 2013).

The implications of these findings extend beyond the realm of music pedagogy to challenge longstanding cultural and philosophical assumptions about the nature of technique and performance. In particular, this research points to the need for a transdisciplinary approach to piano technique that goes beyond the narrow focus on biomechanical efficiency and structural clarity that has long characterized Western piano pedagogy. By taking into account the complex interplay between cultural context, philosophy, and embodied practice, such an approach would be better positioned to foster a more inclusive and sustainable piano tradition that is rooted in both scientific knowledge and humanistic values.



Future research in this area might explore the long-term effects of integrated approaches on technical development, performance practice, and cross-cultural music education. This could include investigations into the physiological and psychological factors that underlie the distinct approaches to finger technique in different cultural traditions and how they might be effectively integrated. By continuing to build on the findings presented in this study, such research has the potential to contribute to a more holistic and culturally aware understanding of piano pedagogy and practice.

Conclusion

This cross-cultural study conclusively demonstrates that piano finger techniques fundamentally reflect their underlying philosophical traditions - Western rationalism producing precise, analytical approaches focused on biomechanical efficiency, while Eastern holistic aesthetics cultivate fluid, integrated movements emphasizing energy flow and expressive continuity. The research reveals how these culturally embedded techniques manifest in measurable differences in articulation, hand positioning, and pedagogical methods, while contemporary globalization drives an emerging synthesis that combines the strengths of both traditions. These findings advocate for culturally responsive piano pedagogy that respects philosophical roots while strategically integrating complementary approaches, suggesting future research should quantitatively assess the artistic and physiological benefits of such hybrid techniques to advance global piano education and performance practice.

Recommendations

1. Culturally Adaptive Teaching Methods: Piano educators should develop "bicultural competency" to flexibly apply Western precision techniques and Eastern holistic approaches based on students' physiological characteristics and musical needs. For Western students, incorporate Eastern concepts of energy flow and wrist relaxation to prevent tension; for Eastern students, introduce systematic finger independence drills while preserving their natural phrasing sensibility. Teacher training programs should include comparative studies of both technical traditions to foster this adaptive teaching skillset.

2. Hybrid Curriculum Development: Conservatories should design integrated curricula that combine the strengths of both traditions - pairing Western technical exercises (Hanon/Czerny) with Eastern mindfulness practices, and Western structural analysis with Eastern imagery-based learning. Create new etudes that merge Western polyphonic clarity with Eastern melodic fluidity, and develop assessment rubrics that value both precision and expressive continuity. Special





attention should be given to adapting fingerings and technical solutions for different hand physiologies.

3. Interdisciplinary Research Initiatives: Establish longitudinal studies tracking the effectiveness of hybrid techniques, measuring both artistic outcomes (competition results, audience evaluations) and physiological impacts (injury rates, biomechanical efficiency). Form international research teams combining musicologists, ethnomusicologists, neuroscientists, and biomechanics experts to: a) document endangered traditional teaching methods before they disappear; b) develop AI-assisted motion analysis tools for comparative technique study; c) create open-access databases of culturally varied pedagogical materials. These initiatives should particularly focus on preserving unique regional approaches while facilitating beneficial cross-cultural exchanges.

References

- Cheng, F. (2016). *Empty and full: The language of Chinese painting*. Shambhala.
- Cumming, N. (2013). *The sonic self: Musical subjectivity and signification*. Indiana University Press.
- Czerny, C. (1991). *The art of finger dexterity, Op. 740* (Vol. 1). G. Schirmer. (Original work published 1839)
- Goertzen, V. (1996). *Beyond the notes: Musical performance in the nineteenth century*. Oxford University Press.
- Gritten, A. (2017). Anatomised listening: Music, phenomenology, and the body. *Contemporary Music Review*, 36(5), 377–395. <https://doi.org/10.1080/07494467.2017.1401662>
- Hanon, C. L. (1988). *The virtuoso pianist in sixty exercises*. G. Schirmer. (Original work published in 1873)
- Ho, W. C., & Law, W. W. (2006). Globalization and music education in China. *Comparative Education*, 42(2), 273–291. <https://doi.org/10.1080/03050060600628017>
- Li, M. (2016). *Chinese aesthetics and piano pedagogy: Daoist principles in practice*. Beijing Conservatory Press.
- Matsunobu, K. (2011). Spirituality as a universal experience in music education: A Japanese perspective. *Philosophy of Music Education Review*, 19(1), 57–75. <https://doi.org/10.2979/philmusieducrevi.19.1.57>
- Neuhaus, H. (1993). *The art of piano playing* (K. A. Leibovitch, Trans.). Kahn & Averill. (Original work published 1958)
- Ortmann, O. (1981). *The physiological mechanics of piano technique*. Da Capo Press. (Original work published 1929)





- Rink, J. (2002). *Musical performance: A guide to understanding*. Cambridge University Press.
- Wang, Y. (2018). Calligraphic resonance in Chinese piano technique: From *feibai* to finger articulation. *Asian Musicology*, 29(2), 55–72.
- Yang, H. (2020). The Qin aesthetic in Fou Ts'ong's Chopin interpretations. *Music and Letters*, 101(3), 375–397. <https://doi.org/10.1093/ml/gcaa012>
- Yung, B. (1989). *Celestial airs of antiquity: Music of the seven-string zither of China*. New World Press.