

# A Constructivist Approach to Design Effective Music-Specific Professional Development Strategies for Kindergarten Educators in China: A Qualitative Study

Jie Zhao<sup>1</sup>, Nor Fauzian Kassim<sup>2</sup>, Fauziah Md Jaafar<sup>3</sup>

## Abstract

*Music-Specific Professional Development (MSPD) is essential to study the impact of active learning techniques and collaborative approach in Chinese kindergarten music educators. Music education is a critical component of early childhood development, which calls for increased participation in MSPD to foster constructivist approach in redefining the strategies to achieve maximum student related outcomes. A qualitative approach using thematic analysis of data from peer reviewed scholarly articles have been undertaken. Major findings emphasize on implementation of blended learning programs, professional learning communities and integration of ICT and artificial intelligence to enhance increased participation in MSPD programs. Teacher perceive MSPD as an effective tool to improve overall wellbeing and cognitive abilities in children, but are limited by lack of resources and enough training. Future research is required to discover broader implications on music pedagogy.*

**Keywords:** *Constructivist Approach, Music-Specific Professional Development (MSPD), Effective Tool, Kindergarten Educators.*

## Introduction

Professional development (PD) for Kindergarten Educators has gained traction in research domains due to its potential to enhance teaching effectiveness. It can also lend support to child development in a holistic manner (Sancar et al., 2021). It points out effective music education in early childhood settings that encourages some foundational learning in terms of creativity, socio-emotional skills, and self-expression. However, delivering music instruction in early education environments presents unique challenges, often because educators may lack specialized training or confidence in music pedagogy. In China, kindergarten educators of early childhood learning face barriers such as limited resource access, variation in the quality of training, and constraints imposed by existing teaching curricula (Spruce et al., 2021). In light of these challenges, having an understanding of the way collaborative professional development works can be a vital source of empowerment for music educators in Chinese kindergarten. A qualitative approach is adopted in this study to investigate the influence of collaborative professional development efforts on the professional growth, commitment, and self-efficacy of these music educators in China. Based on the perspectives from social constructivist theories, such as those of Bandura (self-efficacy framework) and Vygotsky (social interaction in learning), this research has explored collaborative practices such as peer feedback, reflective sessions, and mentorships that contribute to the skills and confidence of teachers in music pedagogy. The role of Professional Learning Communities and government-backed programs for professional development is also considered in this study. It aims to provide a structured and collaborative environment for these educators to learn best teaching practices and develop suitable competencies for teaching music. Thematic analysis has been used to capture the essence of existing literature on the theoretical approaches. It will help professional development in the context of teaching music teaching skills to kindergarten educators in China. It will help address the needs of music educators in China involved in early childhood education. Overall, technical skills and supportive communities will assist in developing confidence and commitment to the education of music in early learning environments. Collaboration opportunities will boost social communication skills for these music educators and enhance their professional relevance.

---

<sup>1</sup> School of Education (SOE), College of Arts & Sciences, Universiti Utara Malaysia, Email: zhaojie\_5621@163.com, (Corresponding Author)

<sup>2</sup> School of Education (SOE), College of Arts & Sciences, Universiti Utara Malaysia, Email: nor.fauzian@uum.edu.my

<sup>3</sup> School of Education (SOE), College of Arts & Sciences, Universiti Utara Malaysia, Email: mjfauziah@uum.edu.my

## Literature Review

### *Early Childhood and Music Exposure*

Early childhood is a critical developmental stage that shows maximum response to music and expands the motor, cognitive, and social skillsets that are required for the fundamentals of holistic growth. A large part of memory, expression of emotions, and linguistic development is contributed majorly by music education in early childhood (Alam & Mohanty, 2023). The scholarly studies indicate that children tend to show increased participation in musical activities early in life which becomes beneficial to them across interdisciplinary domains. Thus, effective incorporation of musical development not only allows collaborative opportunities for children but also helps in building self-confidence. For this teacher should design strategies to involve students in empathy demonstration activities, taking, and listening (Sutela et al., 2020). This makes a child fit for collaborative problem solving, which marks the success of musical teaching in teachers. Moreover, musical teaching involves taking note of rhythmic activities that enhance control and coordination, while singing helps in learning new languages and increases awareness of phonemics. In this context, neurological studies validate the degree of effectiveness of musical activities in altering brain functions (Frischen et al., 2021). This is a very critical step in development as the development of language, and all the parts of the brain involved in processing auditory signals, motor skills, and executive actions are directly related to enhanced cognitive abilities.

### *Constructivist Theory*

Originating from Piaget and Vygotsky's groundwork the Constructivist theory highlights learning as a context-specific process that situated learning as an active process. Rather than just passive reception of information, this approach highlights that educators must actively engage in imparting knowledge, a way in which they get professionally developed. To relate to the professional context, the teachers must use real-life examples that emphasize the need for PD activities to be collaborative and reflexive (Hınız & Yavuz, 2024). In recent studies, the constructivist-informed PD programs facilitate more significant alterations in teaching beliefs and practices, encouraging educators to explore and imbibe practices through critical reflection and discussion with peers. Music educators particularly benefit from the PD framework due to the reflective and iterative essence of instruction in music education (Vanoostveen et al., 2019). This is directly linked to the principles of constructivist learning. In order to apply student-centric teaching techniques in their classrooms, the music teacher needs to take part in constructivist PD, to gain a critical understanding of the application of pedagogical strategies and improvise the incorporation of the same. This constructivist PD in music education demonstrates an interplay between theoretical concepts and practical experience which enable teachers to foster supportive environments that trigger critical thinking and creativity among learners.

### *Music-Specific Professional Development*

Music-specific professional development (MSPD) is customized to the unique requirements and pedagogical strategies of music education. MSPD emphasizes the details of music teaching by focusing on instrument techniques, and improvisation of auditory skills. According to recent research, educators learn from their personal experiences in music education to enhance their professional growth by mastering specialized teaching strategies (Concina, 2023). Thus, MSPD sessions expectedly integrate performance aspects, feedback, and observation to create an immersive context where teachers research unique and innovative methods of teaching while strengthening competency in music education. In other words, MSPD is impactful in furtherance of pedagogical transformation in music classrooms, particularly owing to the unmasking of alternative methodologies such as Kodaly, Dalcroz, and Orff (Juntunen & Sutela, 2023). These methodologies add to specificities in experiential learning, where students are actively engaged through moving, listening, and creating music. Thus, educators can share and empower students with strategies that are deep-rooted in MSPD programs in collaborative settings where gaining insights from one another's experiences is promoted. Additionally, MSPD promotes the use of technology whereby educators can compose, analyze, and modify instructions via digital tools (Upitis & Brook, 2017). In this way, by

incorporating music-specific PD into mainstream professional development curriculum, the unique needs of diverse learners in music education are readily addressed.

#### *Research Aim and Objectives*

*This study aims to evaluate the constructivist approach to music-specific professional development for kindergarten teachers in China, with special focus on strategies that facilitate professional growth via active and collaborative learning.*

#### *Research Questions*

RQ1: Which constructivist strategies are highly impactful in promotion of music education skillset among Chinese kindergarten educators?

RQ2: How do collaborative initiatives improvise music specific professional development of kindergarten music educators in China?

RQ3: What is the role of active learning techniques on music specific professional growth of Chinese kindergarten music educators?

RQ4: What is the perception of Chinese Kindergarten educators on the effectiveness of constructivist-based professional development in music education?

#### *Methodology: Qualitative Study*

The impact of the constructivist-based approach on music-specific professional development of Chinese kindergarten educators is explored in this study by using a qualitative approach. To be precise, document analysis was employed to extract themes from peer-reviewed scholarly articles. The underpinning reasons behind active learning techniques and collaborative approaches for enhancement of the outcomes are investigated in Chinese kindergarten educators. The articles have been scrutinized from reputed databases such as Web of Science, Google Scholar and PubMed. These articles serve as secondary sources of information which are related to the contextual concepts, and can be analyzed for favorable outcomes in this investigation.

#### *Research Design*

The depth and precision of the articles reflect the potential impact of music-specific PD techniques on the teaching attitudes of educators, given the recent trend of introducing music to children in early childhood. Thus, the thematic analysis aids in the identification, reporting, and critical analysis of themes sharing similarities within qualitative data (Braun & Clarke, 2019). This broadens the prospect of the data to offer appropriate answers to the research questions. Hence the overall relevance of the topic is established post familiarization of data, thematic analysis, and approval of each identified theme from empirical evidence to produce a report. Hence this approach can be considered flexible enough to adapt and blend within a range of qualitative data to evaluate the effectiveness of constructivist-based music-specific PD in Chinese Kindergarten educators.

#### *Data Collection Methods*

Peer-reviewed articles were used as secondary sources to extract the data instilled in scholarly articles. 957 articles were identified in electronic academic databases. This suggested that the information is highly credible and reliable as it offered peer-reviewed data that reflect on the themes of a constructivist approach to music-specific PD. Keywords such as "music-specific professional development", "Chinese Kindergarten Educators", " Kindergarten educator in China", "professional development"; "professional growth", and "collaborative approach " were used to run the search on the listed databases using the Boolean Operators AND /OR for obtaining appropriate results. This made the search results highly specific and filtered.

### *Exclusion/ Inclusion Criteria*

The literature selection process consisted of a set of inclusion/exclusion criteria. Thus, criteria involved the required elements necessary to conduct high-quality and specific research. Scholarly articles published in English were only included to have a wider outreach among diverse linguistic abilities in readers. Additionally, only articles that were published recently within the last 5 years were included so that the timeliness and relevance of the data analysis remained intact (Kraus et al., 2022). Only full text articles were included, particularly to escape any redundancy of data and insufficient information. Moreover, the reviewed articles are related exclusively to Chinese kindergarten educators and music-specific professional development to preserve the authenticity of the investigation. In contrast, any source that was published 5 years ago in some other language than English, containing only abstracts as well as not adhering to the research-specific topics containing duplicate information were discarded.

### *Data Extraction*

The qualitative data on music-specific PD in kindergarten educators in China was identified manually in peer-reviewed scholarly articles. This data was organized in a table and categorized into authors, study title, study design, participants, key findings, and relevance with the research. The similarities between the patterns of data were identified and color-coded for clarity of interpretation. In this way, the recurring themes of commonness were identified in the findings, and a systematic comparison was drawn across a wide range of diverse studies to validate the reliability of the themes.

### *Synthesis of Findings and Scientific Evaluation*

The emerging themes were identified from the findings in 20 research articles that provided a nuanced comprehension of how collaborative initiatives and active learning techniques based on a constructivist approach helped to develop music-specific professional development among kindergarten educators in China. This can explain the enhancement of their professional attitude and implementation of musical teaching strategies in early childhood classrooms, which can facilitate the overall development of a child.

The credibility and quality of the identified literature were ensured by using Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) Guidelines (refer figure 1). This acted like a highly valuable framework to generate transparent, trustworthy, and improvised literature based on the key findings. Additionally, the Critical Appraisal Skills Programme (CASP) was used for the examination of credibility pertaining to secondary data used for the formulation of research questions in this study (Costa et al., 2024). The strategies that were adapted provided a better understanding of the heterogeneity of the research findings for consistent educational outcomes.

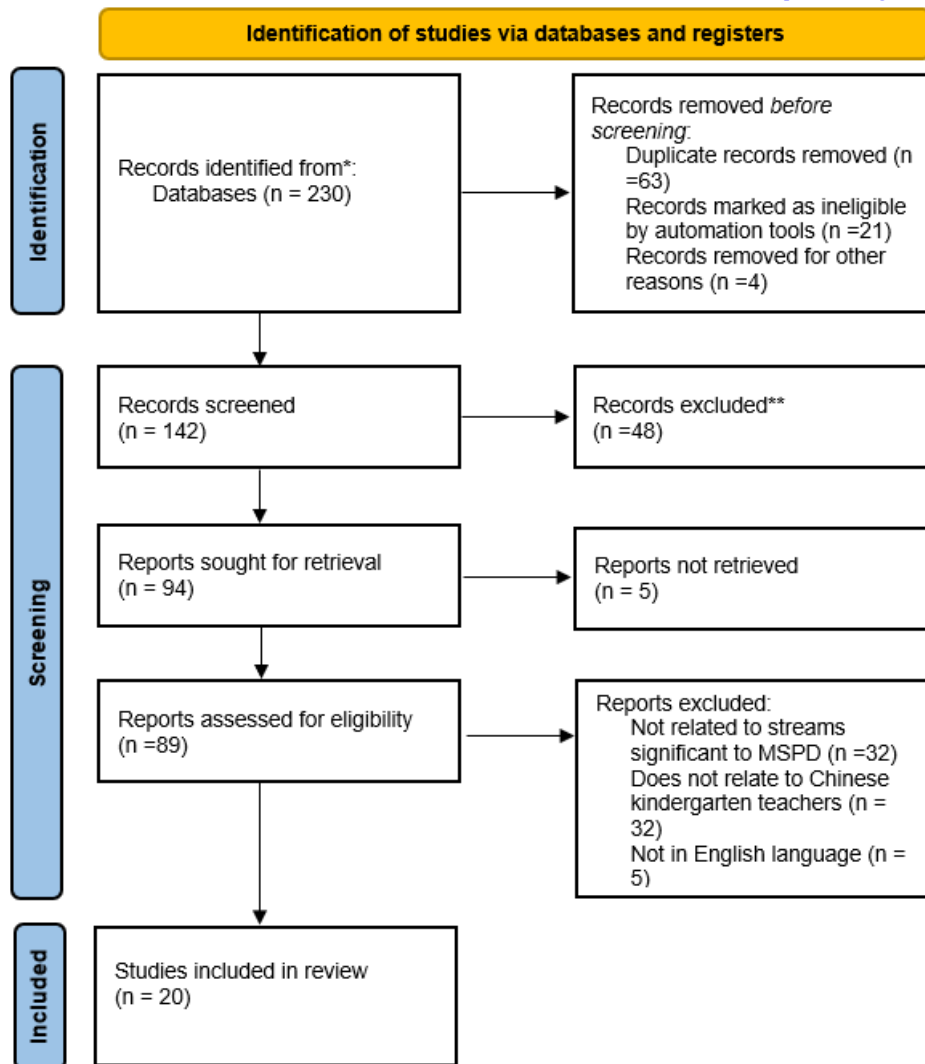


Figure 1. PRISMA Chart

*Ethical Considerations and Outcomes*

The proprietary data was acknowledged by proper citations provided to adhere to the ethical recognition of previous research. The data extracted from the studies were not comprised in terms of data selection and disclosure, neither had they been manipulated to fit into the study. The accuracy of reported data was preserved by maintaining the precision of citations. Additionally, all the essential ethical guidelines warranting the validity of secondary data and its outcomes had been confirmed in this research.

**Results**

This research uncovered 20 relevant peer-reviewed articles for finding answers to the research questions formulated against the research objective. In Table 1, the aim of the research, research design, sample size, key findings, and implications for research have been noted down. Based on this detailed investigation, four emergent themes have been detected namely- Constructivist strategies in music education, collaborative initiatives in professional development, active learning techniques and professional growth as well as perceptions of constructive PD effectiveness. These themes were tabulated as shown in Figure 2 with the corresponding research articles they have been identified from. This gives a detailed insight into the identified patterns from the comprehensive dataset, representing the basis of this investigation.

**Table 1. Summary of the Identified Patterns Based on This Study**

Author and year	Study Aim	Study Design	Sample Size	Key findings	Research Implications	Emerging themes
Cruywagen & Potgieter, (2020)	To implement the Picciano's Blending with purpose multimodal model into the undergraduate music education module	Case study	N = 45, (22 students from first year ME students 23 students from	Blended learning is the suitable teaching model in mastering newer approaches to teaching and learning music.	A student-centred approach is fostered by constructivism whereby educators develop strategies to improve on active learning.	Active learning techniques and professional growth
Anderson & Willingham (2020)	To investigate the processes involved in collaborative music making in various domains	Systematic Literature Review	N =	Music making is fostered by all age groups in the society	Informal and non-formal modes of teaching advocated by constructivism theories are the most effective methods in music teaching for comprehensive development of the student	Active learning techniques and professional growth
(Biasutti et al., 2019)	To examine the impact of three-year collaborative online coursework on the behaviours of music educators	Mixed method research	N= 24 educators	Participants of the online course developed goal-oriented curriculum planning and student centric approaches in teaching music.	Constructivist approach in designing curriculums for music educators, that have a positive impact on their teaching attitude	Collaborative initiatives in professional development
(Vasil et al., 2019)	To investigate the strategies effective for music educators to plan non formal	Systematic Literature review	N =	Integration of popular music pedagogy aids music educators to impart 21 <sup>st</sup>	PMPs provide a choice for music educators to adopt a non-formal approach of	Constructivism in music education

	teaching courses			century skills in students	teaching to facilitate problem solving and collaborative learning.	
(Wong et al., 2024)	To examine the preference for MSPD in Hong Kong teachers and differential levels of teaching experiences	Qualitative analysis	N = 1019 teachers	Teaching experience is an essential criterion in determining the preference of MSPD in pre-school teachers	Beginner pre-school educators mostly prefer further professional development programs to seek growth in teaching practices	Constructivism in music education
Ibbotson, & See, 2021)	To evaluate the impact of collaborative partnership education plan on teaching non-specialist teachers via Kodály-inspired intervention to preach music.	Mixed method approach	54 teachers (and 1492 students, 5–6 years old),	Mentor training and teacher support enhances the musicality in pupils' early childhood	Kodály-inspired intervention improve the musical outcomes in early childhood by delivering MSPD	Perception of constructive professional development effectiveness
(Chung, 2021).	To examine how self-perceived confidence and competence is affected by music specific education program for in-service educators	Mixed method approach	N = 32 in-service early childhood educators	Reflective sessions on emotional challenges, peer feedback and verbal encouragement are integral in enhancing the professional growth of early-childhood educators	Collaborative practices improve the self-efficacy of kindergarten educators which is crucial for MSPD.	Constructivism in music education.
(Keung et al., 2020)	To examine the relationships between professional learning communities,	Qualitative survey	N= 2120 teachers	Professional communities are effective in mediating collaborative	By incorporating music education in PLC frameworks, kindergarten	Perception of constructive professional development effectiveness

	leadership practices, and efficacy beliefs of teachers to facilitate overall development in kindergarten children.			approach in educators	leaders can improve music learning competencies	
(Bautista et al., 2024)	To promote cost effective, sustainable and scalable strategies for professionally enhancing teachers involved in musical development in early childhood education (ECE) settings	Systematic literature review	N =	ECE educators are urged to participate in online/offline government or education ministry funded programs providing training on MSPD	Pairing the trained MSPD educators with untrained peers helps in enhanced professional growth that increase opportunities for musical awareness in early childhood classrooms	Perception of constructive professional development effectiveness
(Bautista & Ho 2022)	To test the preparedness of kindergarten educators in music and movement	Qualitative study	N= 1019 Kindergarten educators	Teachers with low prior experience lacked expertise in playing a musical instrument for at least 2 years	Hong Kong educators show relatively increased self confidence in preaching music and movement in ECE settings, without any prior training owing to their cultural values	Active learning techniques and professional growth
(Zhang et al., 2024)	To develop a self-assessment scale aligned with Chinese ECE professional standards	A multiphase quantitative study	N= 1030 Kindergarten teachers	Self-assessment scales can act as an effective tool in improving teaching models in ECE classrooms.	Knowledge, practice and disposition is critical to constructivism-based pedagogy, which emphasizes learners to reflect on	Collaborative learning in professional development



					active learner centric MSPD	
ZiXuan & Devarajoo, (2021)	To highlight the improved methods for teaching piano skills in preschool education majors in China	Systematic Literature Review	N = 30 research articles	Teaching methods can be enhanced to by incorporating Dalcroze process in early childhood pedagogy	Teaching student centred learning in kindergarten educators has a positive impact on perception of rhythm, expression and emotion and hearing	Constructivism in music education
(Sungurtekin, 2021)	To examine the perception of educators on enhancing imagination and creativity in primary music education	Qualitative research method	N = 17 teachers	Besides singing and moving, creative listening is preferred by music educators as an effective creative pedagogy criterion for enhancing the music teaching instructions	Teachers perceive constructivist MSPD as an essential training program to improve creative development in students	Collaborative initiatives in professional development
(Ho Weatherly, & Weatherly, 2024)	To suggest some strategies to develop music- and movement-based curricula for educator preparedness in ECE settings.	Qualitative Research	N =	The Lighthouse Framework promotes constructivist-based curriculum to foster enhanced learning in pre-service early childhood educators	Teachers gain real time feedback from such collaborative strategies that allow them to facilitate music and movement-based learning.	Collaborative initiatives in professional development
(Yu et al., 2023)	To examine the role of artificial intelligence in music education	Systematic literature review	N = 55 articles	Application of artificial intelligence has greatly improved the teaching methods of kindergarten educators in	Though developments in composition can be facilitated by constructivist approach, it can be a	Constructivism in music education

				music education	challenge in domains such as music which require hands on experience	
(Li et al., 2022)	To examine the PD in early childhood educators	Case study	N = 1 Chinese early childhood educator	Conceptual PlayWorld model is an impactful intervention to promote play based activities in Kindergarten classrooms	Teachers demand training in reflective practices to successfully deploy play based activities in ECE settings, which can potentially be linked MSPD.	Perception of constructivist PD effectiveness
(To et al., 2023)	To establish the relationship between teacher commitment and professional learning communities	Qualitative approach	N = 2106 educators belonging from 153 Hong Kong kindergartens	Principal leadership exercises a positive reinforcement on commitment of teachers to create opportunities for environment	Professional learning communities are established as a collaborative approach for professional development for kindergarten music educators.	Collaborative initiatives in professional development
Yang & Hong, (2022)	To examine the reasons behind limited access to ICT in ECE classrooms in China	Qualitative Analysis	N = 15 preschool educators serving varied age groups.	ICT implementation in professional development of preschool educators in ECE settings in China is challenged due to lack of training	Peer discussion and critical reflection can be a mode of implementation and integration of ICT which is limited in MSPD	Collaborative initiatives in professional development
(Bautista & Ho, 2021)	To explore the requirements for music specific professional development in kindergarten	Qualitative analysis	N = 71 Hong Kong kindergarten educators responsible for training	Music and movement professional development programs are self-perceived necessities of Chinese kindergarten	Kindergarten educators in China are intrinsically motivated to the knowledge of music and movement by	Perception of constructivist PD effectiveness

	educators, and the reasons for lack of literacy on the same.		K1-3 children aged 3-6 years	music educators	peer observation and feedback, when the facilitators are capable of explaining both the content and the pedagogy.	
(Yan & Wang, 2024)	To compare and investigate the musical abilities of both public and private kindergarten educators in China	Qualitative study	N = 5 kindergarten schools in China	Teachers with prior experience of music skillsets in college and expertise in playing instruments are capable of implementation of active learning techniques in both public and private ECE classrooms	Active learning techniques in MSPD involve appreciation towards musicmaking skills of students, praising student participation, songs and experimentation.	Perception of constructive professional development effectiveness

Table 2. Identified Themes and Scholarly Articles

<i>Research Themes</i>	<i>Research Papers</i>
<i>Constructivism in music education</i>	Cruywagen & Potgieter, (2020)  Biasutti et al., 2019; Vasil et al., 2019; Ibbotson, & See, 2021; Ho Weatherly, & Weatherly, 2024
<i>Collaborative learning in professional development</i>	Chung, 2021; Keung et al., 2020; Bautista et al., 2024; To et al., 2023; Yang & Hong, 2022; Bautista & Ho, 2021
<i>Active learning techniques and professional growth</i>	Anderson & Willingham, 2020; ZiXuan and Devarajoo, 2021; Sungurtekin, 2021; Yu et al., 2023; Yan & Wang, 2024
<i>Perception of constructive professional development effectiveness</i>	Wong et al., 2024; Bautista & Ho 2022, Zhang et al., 2024; Li et al., 2022; Bautista & Ho, 2021

Based on the research design of the scholarly articles reviewed in this investigation, five broad categories have been identified. After analyzing a total of 20 articles, the research findings indicate commonness in data which uncovers the four abovementioned themes. 2 out of 20 articles are case studies, which focus on the Conceptual PlayWorld model and Picciano's Multimodal Model as essential tools for a constructivist approach to learning (Cruywagen & Potgieter, 2020; Li et al., 2022). This emphasizes the relevance of active learning techniques, that are applicable under MSPD curriculums for Chinese Kindergarten music educators. 3 studies following the mixed method approach reflect on the improvement of confidence in educators to employ the active learning skills learned in MSPD sessions (Biasutti et al., 2019; Ibbotson & See, 2021; Chung, 2021). This implies that MSPD requires extensive skill acquisition for implementation in early childhood classrooms. Additionally, 8 out of 20 qualitative studies assert the impact of professional learning communities (PLCs), the experiences of teachers, and the role of cultural values in full-fledged acceptance of MSPD courses (Wong et al., 2024, Keung et al., 2020; Sungurtekin, 2021; Ho et al., 2024; Yang & Hong, 2022; Bautista & Ho, 2021; To et al., 2023; Yan & Wang, 2024). In these studies, informal modes of learning, collaborative learning, and constructivist principles emerge as the major themes for improving music teaching among Chinese early childhood educators. Aligned with the findings derived from these papers, technological interventions such as the use of popular music pedagogy (PMP) and artificial intelligence might be considered exclusive teaching strategies in constructivist pedagogy (Anderson & Willingham, 2020; Vasil et al., 2019; ZiXuan & Devarajoo, 2021; Bautista et al., 2024, Yu et al., 2023). These results were evident in 5 systematic reviews used for this research paper, which ultimately indicate that MSPD is essential to promoting problem-solving, creativity, and 21st-century skills. However, 1 out of 20 articles is a quantitative study by Zhang et al. (2024) which refers to self-assessment tool development as effective programs aligned with constructivist programs. These programs reflect the data-driven approaches that are aimed at improvement of teaching techniques. Thus, goal-oriented curriculums can be planned post-MSPD for Chinese Kindergarten educators to foster student-centered learning. These findings suggest that professional development based on constructivist approaches can help bridge the gap

in effective music teaching. The emergent themes can be incorporated within sustainable models and scalable strategies for effective learning outcomes for early childhood learners and the professional growth of Chinese kindergarten educators.

## Discussion

*RQ1: Which constructivist strategies are highly impactful in the promotion of music education skills among Chinese kindergarten educators?*

Constructivist strategies such as movement-based framework, collaborative learning, blended learning, and music-specific pedagogy can enhance PD in music education for kindergarten educators in China. Aligned with Piaget's "learning by doing", and Vygotsky's social learning theory, facilitating movement-based learning becomes a necessary skill set for early childhood educators as children engage in hands-on learning by physically interacting with their learning stimulus (Cerovac & Keane, 2024). This supports the Lighthouse framework which emphasizes rhythmic expressions as a part of kinesthetic learning (Ho & Weatherly, 2024). This inculcated culturally relevant practices in resonance with traditional Chinese practices. Contrastingly, teacher-led instructions might be preferred over free movement and improvisation as proposed by standardized curriculums in China, by applying Bernstein's pedagogic discourse theory (Chiang & Thurston, 2022). To bridge the gap between traditional and updated pedagogical approaches, collaborative online PD programs can help Chinese kindergarten teachers co-develop and share methodologies that transcend geographical limitations. As promoted by the zones of proximal development by Vygotsky's social constructivism, peer feedback, and collaborative engagement foster self-confidence and enhance the urge for implementation in Chinese kindergarten educators (Jie et al., 2020). This concept suggests that face-to-face interactions solidify self-efficacy in kindergarten tutors who undergo music-specific professional development.

Though supported by Bandura's self-efficacy theory, a lack of tangible feedback and physical engagement over online platforms might not be applicable in the case of musical domains (Hussain et al., 2022). However, blended learning can be used to solve this issue whereby Piagetian self-guided exploration can be used to combine personal interaction and digital services to induce flexibility in learning amongst early childhood educators. Therefore, blended learning is a strategy that sounds like the ideal constructivist approach, though being challenged by Vasil et al. (2019) who focus on sensory, direct experiences for learning in young children that are compromised by blended learning to some extent. This is why the Kodaly method fosters active learning by enhancing cognitive development and constructivist models as proposed by Piaget's theories. Familiarity with young Chinese learners can be emphasized by Kodaly methods whereby folk-based melodies and cultural relevance are applicable to draw implications from the learner's real-life situations (Ibbotson & See, 2021). This shows that the inclusion of social and cultural contexts within constructivist strategies aids in maximum outcomes in professional success for educators in early childhood classrooms. Thus, the pedagogical approach for developing constructivist-based strategies for PD in Chinese kindergarten educators needs to be aligned with the musical identity of Chinese learners with more spaces for localized adaptation.

*How do collaborative initiatives improvise music-specific professional development of kindergarten music educators in China?*

Collaborative initiatives are crucial in fostering the acquisition of skills, self-efficacy, and dedication toward music education. According to the study by Bautista and Ho (2021), educators operating in preschools are expected to show growth in music teaching competencies whereby they can confront emotional challenges, share their experiences, and provide feedback to their peers. This implies that self-confidence is boosted via social modeling as well as highlighting the role of mastering experiences. In a study according to Mawang (2024), collaborative learning has been considered an ideal method to foster improved perception of music, and increased engagement among learners. This fact can be utilized for teacher to adopt music teaching strategies in a collaborative setting. For instance: Chinese music educators based in rural areas must collaborate with regional artists and local music makers to inculcate the essence of Chinese traditional music in learners. These collaborative approaches can be incorporated in the MSPD curriculum for Chinese

kindergarten educators for better learning outcomes (Yu & Leung, 2019). Thus, for imparting musical skills, one must incorporate collaborative practices in MSPD where they learn how to provide constructive feedback and manage classrooms by active reinforcement of commitment towards music education.

In this context, Professional Learning Communities have promoted opportunities for collaborative skill development. This was primarily to exchange best practices, strengthen teaching skills and strategies, as well as enhance self-efficacy, all of which are critical for Music Specific PD (MSPD) (Keung et al., 2020). This suggests that PLCs support constructivist-based approaches, which validate Piaget's principal value of learning by doing. Therefore, teachers develop collective professional identity, alongside nurturing musical skills through active participation. Moreover, mentors who have prior experiences in PD programs are to be paired with novice educators who can imbibe professional skills through social learning as outlined in Vygotsky's social constructivism (Tasos, 2024). This mentorship both online and offline allows kindergarten educators to break the stereotype of a centralized Chinese curriculum and gain confidence and a thorough understanding of effective strategies to implement music education in early childhood classrooms. Additionally, most of the collaborative PD initiatives in China are promoted by government-funded programs (Yang & Rao, 2021). These programs foster both online and offline teaching models for enhancing the accessibility and engagement in music education practices. In contrast, implementation of ICT within MSPD is limited by inadequate availability of resources and minimum awareness of training. Yong and Hong (2022) state that reflective sessions and feedback from peers are impactful in ICT and facilitate professional development in musical domains but are highly constrained by a lack of technical expertise and resource gaps. On this note, Piaget's perspectives differ from reliance on ICT and solely focus on sensory engagement crucial for music education (DeRobertis, 2021). Therefore, kindergarten music educators gain internal motivation by receiving collaborative support in upskilling mentoring practices, through a comprehensive understanding of the various perspectives that could be functional in training children, especially between 3-6 years of age.

*What is the role of active learning techniques on music specific professional growth of Chinese kindergarten music educators?*

Active learning techniques play a vital role in the MSPD of Chinese kindergarten music educators. Engagement through participatory music-making in the context of communities is a groundbreaking skill for teachers intending to implement community-based music activities to bridge the intergenerational gap. The social and relational aspects of music can be integrated with broader developmental goals that aim for a constructivist approach to active learning (Sungurtekin, 2021). These techniques train educators to cultivate interest in rhythms, harmony, and emotional engagement with music to propagate the same within kindergarten pupils. Thus, active learning techniques such as singing, music improvisation and composition, and rhythmic movements help in creating a supportive environment that facilitates mutual learning (Juntunen, 2020). Thus, hands-on sessions in early childhood classrooms imply that music education is not simply an auditory experience but also aligns with constructivist theories by modifying the perception of how educators encourage students' participation.

Another critical component of active learning in MSPD involves student-centered learning and creativity. According to ZiXuan and Devarajoo (2021), students with prior training in active learning techniques provide structured opportunities for exploring music from the perspective of a child that involves the Dalcroze technique. This indicates that such MSPD-trained educators have expertise in eurythmics or physical embodiment of sound, and recognizing and generating musical chords and melodies based on memory. Therefore, such qualities foster improved motor and coordination skills, cognitive development, and increased confidence in students who are instructed since early childhood by tutors exposed to MSPD. This method thus aligns with the kinaesthetic abilities and auditory elements advocated by Bodrova and Leong (2024). Moreover, creative listening is an essential element required for a deeper understanding of constructive pedagogy. For Chinese kindergarten educators, developing aural skills, guiding children to observe variations in music encouraging them to express these annotations by bodily movements is a major milestone in teaching models upheld by MSPD. Thus, the emotive qualities of children are a key manifestation of impactful MSPD in early childhood settings, driven by nonformal or informal modes of instruction (Anderson & Willingham, 2020).

To enhance the impact of MSPD on teachers willing to engage in active learning techniques, artificial intelligence (AI) can be incorporated within instructional modes, as a range of tools to provide real-time feedback to teachers in response to virtual rhythm and pitch training exercises. In China, where accessibility to digital resources for education is on the rise, teachers should emphasize on AI-supplemented recognition of pitch, timing, and accuracy in rhythm. Though AI has the potential to scaffold the rules of traditional standardized Chinese curriculums, it comes with some challenges. Yan and Wang (2024) find it necessary for teachers to possess a pre-acquired skill set for certain music pedagogies, that facilitate experiential learning; without which implementation of AI can go uncontrolled. This can backfire causing a loss of creativity and active learning instead, increasing the dependability on automated responses for problem solving. This will delimit the opportunities for scaling MSPD programs among kindergarten educators. Therefore, active learning techniques adopted by Chinese kindergarten educators not only suggest empowerment of teachers within a constructivist framework, but also ensure comprehensive developmental benefits for young children in early childhood settings.

*What is the perception of Chinese Kindergarten educators on the effectiveness of constructivist-based professional development in music education?*

Chinese Kindergarten educators perceive constructivist-based PD as a key learning model for maximum music-related outcomes in kindergarten learners. The constructivist approach advocated by Piaget aligns with the value of music and movement PD. In the studies by Bautista and Ho (2021), play-based activities are emphasized rather than traditional classroom techniques to create an environment where instructions are not mandatory. Rather than providing with a set of rules, just guidance is enough to navigate the students through solving problems (Danniels & Pyle, 2023). This can be only possible if an educator is aware of the significance of reflective skills and a collaborative approach in MSPD. Chinese music teachers with no prior experience with PD in the domain of music either in college or in early schooling have confidence in the implementation of the same in their teaching practices due to the Confucian culture for overall well-being (Bautista & Ho, 2022). This denotes that self-efficacy in Chinese kindergarten educators is required to be nurtured via peer-supported learning while they still struggle to gain relevance within a centralized education system.

However, the absence of a formal structure and clear guidelines in assessment criteria has led to reduced participation from teachers, who feel apprehensive about fully integrating constructivist learning models (Wong et al., 2024). Thus, autonomy in applying exploratory techniques is perceived as a threat to informal classrooms. Moreover Li et al. (2022) highlights the dilemma of Chinese kindergarten educators in the implementation of constructivist PD, as lack of pedagogy and context collectively creates confusion and further structural challenges in a diverse classroom. These findings underscore the need for a more defined support system within PD frameworks to help educators navigate constructivist methods effectively in early childhood music education.

## Conclusion

This study underscores the role and perceived effectiveness of constructivist-based professional development models to foster music education competencies among Chinese kindergarten educators. The findings indicate that educators highly value collaborative and active learning approaches, which contribute to their self-efficacy and confidence in delivering music instruction effectively. The use of constructivist approaches such as the Lighthouse framework and the Kodály-inspired methods were found to resonate with Chinese educators pedagogically and culturally. It provided them with hands-on learning pathways to align with Vygotsky's and Bandura's theories. Nonetheless, the centralized education system presents certain challenges, highlighting the need for a more flexible and supportive environment that fosters music education within a framework of holistic child development.

## Limitations

The reliance on qualitative data sources in the study might lead to subjective bias in information collected. The ability to generalise results is limited because of its focus on Chinese early education environments in

music. The variations in professional learning communities and access to professional development programs might not be valid for all Chinese regions. This can be because of the difference in resource availability and administrative variations. Some additional factors such as policy effects or cultural constraints might interfere with the implementation of the educational approaches. This area needs to be examined further in details.

### Recommendations for Future Studies

Given the findings, the overall interpretations of the paper, certain directions for future studies have been recommended.

- For example, avenues for enhancing the understanding of constructivist-based professional development efficiency for music educators in early childhood learning environments.
- The studies focusing on involving a larger sample size with quantitative methodologies can provide objective measures of the influence of the professional development approaches for the skills and outcomes of the teachers.
- To focus on sustained effect of music pedagogy, longitudinal studies can be undertaken so that effects of constructivist-based approaches on skills and efficacy of teachers can be understood.
- Studies can also focus on researching on under-explored areas so that the efficacy of professional development approaches has a wider reach. In such instances, the use of targeted support is useful in minimizing the gap in educational equity.
- Beyond these, studies exploring the integration of technology into learning and teaching methods can add value to research knowledge. This would require insights into the policy-based support needed and the structural changes essential in highlighting the changes for early education curricula.

### References

- Anderson, K., & Willingham, L. (2020). Environment, intention and intergenerational music making: Facilitating participatory music making in diverse contexts of community music. *International journal of Community music*, 13(2), 173-85. [10.1386/ijcm\\_00018\\_1](https://doi.org/10.1386/ijcm_00018_1)
- Alam, A., & Mohanty, A. (2023). Music and Its Effect on Mathematical and Reading Abilities of Students: Pedagogy for Twenty-First Century Schools. In *Interdisciplinary Perspectives on Sustainable Development* (pp. 342-346). CRC Press. <https://www.taylorfrancis.com/chapters/edit/10.1201/9781003457619-67/music-effect-mathematical-reading-abilities-students-pedagogy-twenty-first-century-schools-ashraf-alam-atasi-mohanty>
- Bautista, A., & Ho, Y. L. (2021). Music and movement teacher professional development: An interview study with Hong Kong kindergarten teachers. *Australasian Journal of Early Childhood*, 46(3), 276-290. <https://doi.org/10.1177/18369391211014759>
- Bautista, A., & Ho, Y.-L. (2022). Music and movement in Hong Kong kindergartens: teachers' preparation, perceived usefulness, confidence, and readiness. *Revista Electrónica Complutense de Investigación en Educación Musical*, 19, 15-25. <https://dx.doi.org/10.5209/reciem.73976>
- Bautista, A., Yeung, J., McLaren, M. L., & Ilari, B. (2024). Music in early childhood teacher education: Raising awareness of a worrisome reality and proposing strategies to move forward. *Arts Education Policy Review*, 125(3), 139-149. <https://doi.org/10.1080/10632913.2022.2043969>
- Biasutti, M., Frate, S., & Concina, E. (2019). Music teachers' professional development: Assessing a three-year collaborative online course. *Music Education Research*, 21(1), 116-133. <https://doi.org/10.1080/14613808.2018.1534818>
- Bodrova, E., & Leong, D. (2024). Tools of the mind: The Vygotskian approach to early childhood education. Taylor & Francis. [https://books.google.com.au/books?hl=en&lr=&id=PsX5EAAAQBAJ&oi=fnd&pg=PT8&dq=kinesthetic+elements+by+Vygotsky&ots=eH\\_GsFSsFg&sig=HjJ2TG6L3ce\\_iXLmVFnq73nIcqc#v=onepage&q&f=false](https://books.google.com.au/books?hl=en&lr=&id=PsX5EAAAQBAJ&oi=fnd&pg=PT8&dq=kinesthetic+elements+by+Vygotsky&ots=eH_GsFSsFg&sig=HjJ2TG6L3ce_iXLmVFnq73nIcqc#v=onepage&q&f=false)
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative research in sport, exercise and health*, 11(4), 589-597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Costa, W. P. D., Fernandes, M. D. S. V., Memon, A. R., Noll, P. R. E. S., Sousa, M. D. M., and Noll, M. (2024). 'Factors influencing the work of researchers in Scientific Initiation: A systematic review protocol', *Plos one*. 19(1), pp.e0297186. <https://doi.org/10.1371/journal.pone.0297186>



- Cerovac, M., & Keane, T. (2024). Early insights into Piaget's cognitive development model through the lens of the Technologies curriculum. *International Journal of Technology and Design Education*, 1-21. <https://link.springer.com/article/10.1007/s10798-024-09906-5>
- Chiang, T. H., & Thurston, A. (2022). Designing enhanced pedagogy based on Basil Bernstein's code theory. *International Journal of Educational Research*, 111, 101914. <https://doi.org/10.1016/j.ijer.2021.101914>
- Chung, F. M. (2021). The impact of music pedagogy education on early childhood teachers' self-efficacy in teaching music: The study of a music teacher education program in Hong Kong. *Asia-Pacific Journal of Research in Early Childhood Education*, 15(2), 63-86. DOI:10.17206/apjrece.2021.15.2.63
- Concina, E. (2023). Effective music teachers and effective music teaching today: A systematic review. *Education Sciences*, 13(2), 107. <https://doi.org/10.3390/educsci13020107>
- Cruywagen, S., & Potgieter, H. (2020). The world we live in: A perspective on blended learning and music education in higher education. TD: *The Journal for Transdisciplinary Research in Southern Africa*, 16(1), 1-9. <https://journals.co.za/doi/abs/10.4102/td.v16i1.696>
- Daniels, E., & Pyle, A. (2023). Inclusive play-based learning: Approaches from enacting kindergarten teachers. *Early Childhood Education Journal*, 51(7), 1169-1179. <https://link.springer.com/article/10.1007/s10643-022-01369-4>
- DeRobertis, E. M. (2021). Piaget and Husserl: Comparisons, contrasts, and challenges for future research. *The Humanistic Psychologist*, 49(4), 496. <https://psycnet.apa.org/fulltext/2020-26459-001.html>
- Frischen, U., Schwarzer, G., & Degé, F. (2021). Music lessons enhance executive functions in 6-to 7-year-old children. *Learning and Instruction*, 74, 101442. <https://doi.org/10.1016/j.learninstruc.2021.101442>
- Ho Weatherly, K. I. C., & Weatherly, C. A. (2024). The Lighthouse Framework: Proposing a Movement-Based Constructivist Framework for Early Childhood Music Education and Pre-Service Education Programs. *Journal of General Music Education*, 37(3), 17-24. <https://doi.org/10.1177/27527646231211906>
- Himz, G., & Yavuz, A. (2024). Real needs, tailored solutions: Developing customized online professional development programs for teachers—A case study. *Journal of Digital Learning in Teacher Education*, 40(2), 97-114. <https://www.tandfonline.com/doi/abs/10.1080/21532974.2024.2325972>
- Hussain, M. S., Khan, S. A., & Bidar, M. C. (2022). Self-efficacy of teachers: A review of the literature. *Multi-Disciplinary Research Journal*, 10(1), 110-116. [https://www.researchgate.net/profile/Md-Hussain-15/publication/358368223\\_SELF-EFFICACY\\_OF\\_TEACHERS\\_A\\_REVIEW\\_OF\\_THE\\_LITERATURE/links/61fe2afca7d76d0f08c01ee4/SELF-EFFICACY-OF-TEACHERS-A-REVIEW-OF-THE-LITERATURE.pdf](https://www.researchgate.net/profile/Md-Hussain-15/publication/358368223_SELF-EFFICACY_OF_TEACHERS_A_REVIEW_OF_THE_LITERATURE/links/61fe2afca7d76d0f08c01ee4/SELF-EFFICACY-OF-TEACHERS-A-REVIEW-OF-THE-LITERATURE.pdf)
- Ibbotson, L., & See, B. H. (2021). Delivering music education training for non-specialist teachers through effective partnership: A Kodály-inspired intervention to improve young children's development outcomes. *Education Sciences*, 11(8), 433. <https://doi.org/10.3390/educsci11080433>
- Jie, Z., Sunze, Y., & Puteh, M. (2020). Research on Teacher's Role of Mobile Pedagogy Guided by the Zone of Proximal Development. In *Proceedings of the 2020 9th International Conference on Educational and Information Technology* (pp. 219-222). <https://doi.org/10.1145/3383923.3383965>
- Juntunen, M. L. (2020). Ways to enhance embodied learning in Dalcroze-inspired music education. *International Journal of Music in Early Childhood*, 15(1), 39-59. DOI: [https://doi.org/10.1386/ijmec\\_00011\\_1](https://doi.org/10.1386/ijmec_00011_1)
- Juntunen, M. L., & Sutela, K. (2023). The effectiveness of music-movement integration for vulnerable groups: A systematic literature review. *Frontiers in Psychology*, 14, 1127654. <https://doi.org/10.3389/fpsyg.2023.1127654>
- Keung, C. P. C., Yin, H., Tam, W. W. Y., Chai, C. S., & Ng, C. K. K. (2020). Kindergarten teachers' perceptions of whole-child development: The roles of leadership practices and professional learning communities. *Educational Management Administration & Leadership*, 48(5), 875-892. <https://doi.org/10.1177/1741143219864941>
- Kraus, S., Breier, M., Lim, W. M., Dabić, M., Kumar, S., Kanbach, D., ... & Ferreira, J. J. (2022). Literature reviews as independent studies: guidelines for academic practice. *Review of Managerial Science*, 16(8), 2577-2595. <https://doi.org/10.1007/s11846-022-00588-8>
- Li, L., Fleer, M., & Yang, N. (2022). Studying teacher professional development: how a Chinese kindergarten teacher brings play practices into the program. *Early years*, 42(1), 104-118. <https://doi.org/10.1080/09575146.2021.2000942>
- Mawang, L. L. (2024). Collaborative learning and persistence in music education: Examining music self-perception as a mediator among adolescent students. *International Journal of Music Education*, 02557614241282088. <https://doi.org/10.1177/02557614241282088>
- Sancar, R., Atal, D., & Deryakulu, D. (2021). A new framework for teachers' professional development. *Teaching and teacher education*, 101, 103305. <https://doi.org/10.1016/j.tate.2021.103305>
- Spruce, G., Marie Stanley, A., & Li, M. (2021). Music teacher professional agency as challenge to music education policy. *Arts Education Policy Review*, 122(1), 65-74. <https://www.tandfonline.com/doi/abs/10.1080/10632913.2020.1756020>
- Sungurtekin, S. (2021). Classroom and Music Teachers' Perceptions about the Development of Imagination and Creativity in Primary Music Education. *Journal of pedagogical research*, 5(3), 164-186. <https://eric.ed.gov/?id=EJ1315117>
- Sutela, K., Juntunen, M. L., & Ojala, J. (2020). Applying music-and-movement to promote agency development in music education: A case study in a special school. *British Journal of Music Education*, 37(1), 71-85. DOI: <https://doi.org/10.1017/S0265051719000184>
- Tasos, T. (2024). Social Constructionism: Critical Analysis from a Vygotskian Perspective. *Rethinking Marxism*, 36(2), 195-223. <https://doi.org/10.1080/08935696.2024.2328667>
- To, K. H., Yin, H., Tam, W. W. Y., & Keung, C. P. C. (2023). Principal leadership practices, professional learning communities, and teacher commitment in Hong Kong kindergartens: A multilevel SEM analysis. *Educational Management Administration & Leadership*, 51(4), 889-911. <https://doi.org/10.1177/17411432211015227>

- Upitis, R., & Brook, J. (2017). How much professional development is enough? Meeting the needs of independent music teachers learning to use a digital tool. *International Journal of Music Education*, 35(1), 93-106. <https://doi.org/10.1177/0255761415619426>
- Vanoostveen, R., Desjardins, F., & Bullock, S. (2019). Professional development learning environments (PDLEs) embedded in a collaborative online learning environment (COLE): Moving towards a new conception of online professional learning. *Education and information technologies*, 24(2), 1863-1900. <https://link.springer.com/article/10.1007/s10639-018-9686-6>
- Vasil, M., Weiss, L., & Powell, B. (2019). Popular music pedagogies: An approach to teaching 21st-century skills. *Journal of Music Teacher Education*, 28(3), 85-95. DOI: 10.1177/1057083718814454
- Wong, J., Bautista, A., Ho, Y. L., & Kong, S. H. (2024). Preschool teachers' music-specific professional development preferences: Does teaching experience matter?. *Research Studies in Music Education*, 46(1), 80-97. <https://doi.org/10.1177/1321103X221139992>
- Yan, K., & Wang, L. (2024). A comparison of teachers' musical abilities between public and private kindergartens in Qingdao, Shandong Province, China. *British Journal of Music Education*, 1-13. doi:10.1017/S0265051724000068
- Yang, T., & Hong, X. (2022). Early childhood teachers' professional learning about ICT implementation in kindergarten curriculum: A qualitative exploratory study in China. *Frontiers in psychology*, 13, 1008372. <https://doi.org/10.3389/fpsyg.2022.1008372>
- Yang, Y., & Rao, N. (2021). Teacher professional development among preschool teachers in rural China. *Journal of Early Childhood Teacher Education*, 42(3), 219-244. <https://doi.org/10.1080/10901027.2020.1726844>
- Yu, X., Ma, N., Zheng, L., Wang, L., & Wang, K. (2023). Developments and applications of artificial intelligence in music education. *Technologies*, 11(2), 42. <https://doi.org/10.3390/technologies11020042>
- Yu, Z., & Leung, B. W. (2019). Music teachers and their implementation of the new Music Curriculum Standards in China. *International Journal of Music Education*, 37(2), 178-197. <https://doi.org/10.1177/0255761418820647>
- Zhang, Q., Wu, W., & Jiang, K. (2024). Standardising professional standards: A self-assessment scale for Chinese kindergarten teachers. *European Journal of Teacher Education*, 47(4), 730-748. <https://doi.org/10.1080/02619768.2022.2124913>
- ZiXuan, L., & Devarajoo, K. (2021). The Strategies of Teaching Basic Piano Courses For Preschool Education Major in China. *International Journal of Infrastructure Research and Management*. 9 (2).