

A Review of Children's Music Education

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Abstract

This study reviews children's music education to highlight its multifaceted impact on cognitive, emotional and aesthetic development. It underscores music as a vital component of early childhood education to foster creativity, social adaptation and psychological well-being. A review methodology was employed to focus on peer-reviewed publications from 2021 to 2024. The findings reveal that interactive teaching methods such as the Orff and Montessori approaches enhance children's engagement and developmental outcomes. Additionally, the integration of technology, including multimedia platforms has modernised pedagogical practices, while gamified materials have been shown to enrich children's emotional connections to music. This study also emphasises the crucial role of teachers as facilitators of holistic growth. Professional development programs for educators have demonstrated a substantial impact on improving the effectiveness of music education. However, the review identifies persistent challenges, including socio-economic disparities that limit access to music education for disadvantaged children and the limited impact of short-term interventions, which are insufficient to achieve lasting developmental benefits. These findings highlight the need for inclusive strategies and sustained and long-term music programs to ensure equitable opportunities for all children. The implications of this study extend beyond individual development because music education also contributes to broader societal goals. By promoting equity and fostering a deeper appreciation for artistic and cultural values, music education serves as a transformative tool that enriches both personal and community growth. This review provides a strong foundation for shaping future educational policies and practices to ensure that music continues to play a central role in early childhood development. Future research is encouraged to explore scalable technological solutions, such as AI-driven learning tools and interactive platforms, as well as strategies to ensure equitable access to music education for underserved populations. These advancements will help further unlock the potential of music education to inspire and nurture future generations.

Keywords: Children's Music Education, Early Childhood Music Education, Review

Introduction

Music education is a fundamental component of early childhood development, offering numerous cognitive, emotional, and social benefits. In today's rapidly evolving educational landscape, the need to explore effective pedagogical approaches in music education has become increasingly significant. With the growing recognition of arts-based learning in fostering creativity and critical thinking, understanding the impact of structured music programs on children's growth is essential. The significance of this study lies in its ability to inform educators, parents, and policymakers about the transformative power of music in early education. By identifying effective teaching methods, the study can contribute to the development of curricula that enhance children's learning experiences and personal growth. Additionally, as the world becomes more technologically advanced, integrating music education with digital tools and interactive methodologies could enhance its effectiveness. The exploration of children's music education is particularly beneficial for educators aiming to refine their instructional techniques, parents seeking to support their children's holistic development, and researchers interested in examining the intersection between music and cognitive advancement. This study provided a comprehensive understanding of the utility and effectiveness of music education, ensuring that children are equipped with the skills necessary for both academic and personal success.

Music education has been recognised as a critical factor in supporting children's cognitive and psychological development. Past studies consistently demonstrated that integrating music into educational content not only enhanced children's enthusiasm and engagement but also stimulated active and creative thinking (Han, 2022; Shi, 2021). Following that, Shi (2021) elaborated that interactive teaching strategies, including questioning, discussions, and demonstrations were effective in nurturing children's interest in music. By engaging with the narratives within music, children cultivate imagination, performance abilities, self-expression and a deeper interest in musical exploration (Han, 2022). Furthermore, music education was found to have a positive influence on children's psychological well-being. It could offer therapeutic and developmental benefits (Han, 2022).

In addition, music also plays a vital role in fostering the aesthetic development of preschool-aged children. Early exposure to high-quality music education helps children build resilience and maintain a positive psychological outlook when they confront with life's challenges (Yu et al., 2023). By integrating rhythm, lyrics and melody, music conveys values of truth, goodness and beauty. Also, it allows children to experience and internalise these abstract concepts (Lin, 2018). Such experiences contribute significantly to their capacity for aesthetic appreciation and emotional growth.

Next, teachers hold a pivotal role in shaping children's experiences with music education. They could influence children's ability to perceive, create and appreciate music while simultaneously cultivating their aesthetic sensibilities (Kell, 2019). For instance, in China, "The Guidelines for Kindergarten Education in China" emphasises the necessity for teachers to enrich children's aesthetic experiences. It encourages freedom of expression and creativity in music (Chinese Ministry of Education, 2006). Therefore, effective music teaching

requires teachers to adapt their guidance to align with children's developmental stages and individual needs. Thereby, it could optimise the educational process (Yu, 2019).

A variety of well-established musical strategies, such as the Orff, Dalcroze, Kodály and Montessori are widely employed in music education. These strategies prioritise children's intrinsic musical experiences and integrated diverse activities, including rhythm exercises, bodily movement and singing (Zou, 2021). Among these, the Montessori emphasises the creation of an environment rooted in love and respect. It promotes the holistic development of children through enhanced musical perception and engagement (Wu, 2019).

Then, the evaluation of music education emerges as a crucial element in assessing its effectiveness and refining teaching approaches to optimise outcomes. Continuous evaluation facilitates the improvement of teaching practices by monitoring individual development and ensuring overall educational quality (Huang & Zhang, 2021). Additionally, the selection of appropriate musical materials is shown to significantly influence the success of teaching. Incorporating diverse and gamified materials not only increase children's interest and facilitate their understanding of musical concepts but also foster positive emotional connections and enrich their musical expressions (Gao, 2021).

Eventually, this review demonstrates several critical dimensions of children's music education, including its related past studies, research purposes and insights drawn from the findings. Therefore, the research questions are:

- i) What previous studies have explored music education for children?
- ii) What are the specific research aims of these studies?
- iii) What insights can be drawn from the findings?

These findings could provide valuable foundations for further research and practical applications in advancing music education for children.

Literature Review

This section elaborates the related literature review in this study. It covers children's music education and early childhood music education.

Children's Music Education

To initiate, children's music education is an essential aspect of the broader music education spectrum. It integrates singing, speech, music and movement within playful and interactive activities. As Ilari (2020) observed, this form of education yields a wide array of developmental benefits for children, including enhanced social skills, emotional self-regulation, cognitive abilities and improvements in physical and mental health. By engaging with music in such dynamic ways, children experience both individual growth and social enrichment.

Past studies have provided compelling evidence regarding the profound impact of music education on children's cognitive development and mental health. First of all, Jaschke et al. (2018) demonstrated that sustained involvement in music education enhances children's cognitive functions in inhibition and planning. These executive functions are foundational to academic success. They suggest that music education exerts an indirect yet crucial influence on academic performance by strengthening such cognitive capacities.

In addition to cognitive development, music education also plays a critical role in promoting mental health and emotional stability. Phan and Matsui (2022) revealed the positive impact of music education on psychological well-being. Emotional intelligence emerged as a central mediating factor in this process. It enables students to better regulate their emotions and develop resilience. Hence, these past findings position music education as more than an artistic pursuit. It is a multifaceted tool that drives holistic student development, encompassing intellectual, emotional and psychological growth.

Furthermore, music education serves as a medium for emotional and aesthetic experiences, fostering an appreciation of beauty through musical works. Shaheen (2018) characterised it as a pathway to connecting with the artistic and emotional essence of music. Moreover, Tursunbaevna (2021) explained that aesthetic perception in music enables children to experience emotional resonance while cultivating an appreciation for the elements of musical beauty, such as melody, rhythm, harmony, and timbre in singing and performance. Additionally, Navbakhor (2020) observed that children's music often mirrors vibrant, lively emotions drawn from their daily lives and coupled with attitudes of joy and praise. Rather than relying on direct reasoning, music education employs evocative artistic imagery to evoke emotions, inspire creativity, and convey educational values. An example of music's educational influence is provided by Liu (2022), who analysed the song "One Penny". In this piece, the moral lesson of returning a penny is not delivered through explicit instructions but rather through a narrative infused with innocence, melodious tunes and joyful emotions. It effectively demonstrates how music can impart values in a manner that is emotionally engaging and educationally impactful. These findings affirm music education's unique ability to intertwine emotional, cognitive, and moral learning, solidifying its role as a vital component of holistic child development.

For Asian country such as China, children's music education is recognised as a fundamental component in enhancing students' overall quality and promoting comprehensive quality education. Camlin and Lisboa (2021) and Yang (2019) highlighted its pivotal role in cultivating versatile talents who can contribute meaningfully to society. The significance of music education has gained widespread recognition within China's policies and societal norms. The government emphasises its role as a cornerstone of national development (Yang, 2022). This prioritisation reflects the growing understanding of music education as not merely an artistic pursuit but a strategic investment in human capital.

In addition, Chinese scholars demonstrate the dual role of music educators as both knowledge transmitters and facilitators of students' musical potential and holistic growth (Bai, 2016). The methodologies, attitudes and expertise of music teachers play a decisive role in shaping students' musical interests and long-term development. Consequently, there is a strong emphasis on cultivating highly skilled and knowledgeable music educators in China (Ding, 2023). Teachers are tasked not only with leading music activities but also with planning and implementing them in a way that maximises student engagement and learning outcomes (Hao, 2023). Hence, Han (2022) suggested that teachers lacking confidence in their musical teaching abilities should pursue professional development opportunities, such as attending workshops or seeking guidance from experienced educators to enhance their skills and teaching effectiveness.

Moreover, past studies have indicated that music teachers in China should go beyond the mere transmission of musical knowledge and skills. Xiang (2021) argued that teachers should embrace and value children's spontaneous musical creations, such as impromptu songs and movements because these contribute to their musical exploration and expression. Zhang (2023) further noted that the integration of new media technologies in music education has transformed the traditional learning environment. It could enrich children's audio-visual experiences, foster independent learning and reshape their aesthetic appreciation of music. This technological shift necessitates that music teachers not only teach traditional music theory but also adopt innovative teaching methods and incorporate modern teaching materials to remain relevant and effective.

On the other hand, the progress and application of music education in Western nations as examined by and Ilari (2020) highlighted its multifaceted importance. Music education has emerged as a key tool in fostering children's comprehensive development. It contributes to cognitive growth, mental health improvements, social responsibility and adaptability to modern educational methodology (Kędzia, 2022). These findings not only provide a scientific basis for the implementation of music education but also serve as crucial references for shaping educational policies and curriculum development. Moreover, the role of music education in advancing social justice and environmental consciousness has gained prominence. Camlin and Lisboa (2021) emphasised this aspect. However, Tao (2023) advocated for incorporating themes of ecological and social justice into music education frameworks. By engaging children in ecological aesthetic experiences, music education fosters a sense of environmental responsibility and active social engagement, nurturing global citizenship and social accountability.

The impact of the COVID-19 pandemic on music education in the UK has been a significant area of study. Simjee et al. (2021) reported that the pandemic led to a substantial shift towards online music education. It profoundly affected the content, assessment strategies and teacher training processes. While this transition posed challenges, it also presented opportunities for innovation and growth in music education practices. Thus, it paved the way for its future evolution. Similarly, the progress of music education in Asian countries, as explored by Camlin and Lisboa (2021) reflects a complex and dynamic landscape. In nations such as China, Japan, and Ukraine, music education is valued for its ability to cultivate moral and aesthetic sensibilities. Jing and Lu (2019) highlighted its contribution to the holistic development of students. On the contrary, Harasim et al. (2021) observed the reciprocal influence of East Asian cultural values and aesthetics on the refinement of Western classical music. These findings suggest that music education in Asia transcends technical and theoretical instruction, shaping individual moral and aesthetic perspectives.

To continue, past studies also indicate the significant impact of music education on mental health and cognitive development. For example, Wang et al. (2022) demonstrated its positive effects on college students' mental health, with emotional intelligence acting as a moderating factor. Similarly, Jaschke et al. (2018) revealed that sustained engagement in music education enhances children's cognitive skill. These studies position music education as more than an artistic pursuit. They highlight its substantial contributions to psychological well-being and cognitive development.

Policy changes in Asian countries further reflect the integration of music education into broader societal and educational frameworks. Kitayama (2021) identified that recent shifts aimed at aligning with global educational standards. They presented a dual challenge for teachers who must balance traditional and Western musical forms. Rajabov (2021) also linked the quality of the educational environment, including music education with broader societal outcomes. This accentuates the importance of music education in globalisation, cultural identity and its potential influence on social and environmental policies.

Following that, the role of teachers in children's music education has also been extensively explored. Western scholars such as Hodijah and Kurniawati (2021) stressed the critical importance of teachers in fostering children's musical abilities. Then, Kupers and van Dijk (2020) investigated the relationship between teacher-student interactions and children's musical creativity. He demonstrated that such dynamics significantly enhance creative outcomes. Using an open-ended music creation test, the study highlighted the pivotal role of interactive teaching in fostering creativity in children. Similarly, Zulfadli and Zakaria (2022) examined the effects of pedagogical approaches and found that instructional and visual aids not only support cognitive development but also enhance children's learning behaviours and emotional regulation. Music education thus emerges as a powerful tool for fostering creativity, self-discipline, and emotional growth in children.

Further research has emphasised the need for teacher development to improve the effectiveness of children's music education. Ibbotson and See (2021) highlighted the initiatives of the UK Department for Education and the Economic and Social Research Council. The initiatives focused on enhancing teachers' skills in Kodály pedagogy. Providing training to generalist teachers in music education significantly improves their self-efficacy, teaching abilities and the learning confidence and musical development of their students. In short, these studies reaffirm the critical role of music education in shaping not only individual cognitive and emotional capacities but also broader societal and cultural values. Consequently, they show the continued relevance and transformative potential in educational contexts worldwide.

Early Childhood Music Education

This section provides a comprehensive analysis of early childhood music education. It details its historical evolution, core principles and primary objectives. Furthermore, it offers a comparative perspective on the current state of early childhood music education globally, with a focus on its practices and developments in Asian, such as China.

In China, early childhood music education targets children aged 0 to 6. It involves holistic musical learning through participation in diverse activities, such as singing, movement, games, dance, appreciation and rhythmic exercises (Ding & Zou, 2021). As Tang (2021) highlighted, the objectives of this educational domain are multifaceted. It aims to impart foundational music knowledge and skills, nurture musical aptitude, evoke emotional experiences, foster aesthetic appreciation and contribute to intellectual development. These goals reflect an integrative approach that seeks to develop children's cognitive, emotional and creative capacities through music.

Following that, this emphasis on music education is deeply rooted in China's historical and cultural traditions. Historically, music has played a central role in nurturing children's moral, emotional and intellectual growth (Dou, 2022). In addition, Zhang (2017) noted that early music education in China represents a confluence of Chinese cultural ethos, political priorities and Western influences. Contemporary societal and economic advancements have further accelerated the evolution of early childhood music education in China. Modern pedagogical approaches have significantly enriched and systematised music education (Dong, 2020). Wang (2022) observed the integration of popular and Western musical elements into preschool curricula. It aligns with a framework that steadfastly upholds traditional Chinese values and cultural identity. Today, preschool music education in China bridges traditional musical forms, such as folk dance and indigenous instruments with Western educational techniques. Hence, it provides children with a diverse and holistic musical learning experience (Yuan, 2021).

The overarching goals of early childhood music education in China include fostering children's enthusiasm for music, stimulating their creative thinking and equipping them with essential music knowledge and skills. Swaminathan (2020) indicated that early music training has been shown to significantly enhance both musical and language abilities. It demonstrates the interconnectedness of these developmental domains. This aligns with the global philosophy of early childhood music education. It aims to provide children with a comprehensive musical foundation (Wu, 2021). Li and Huang (2017) further highlighted that Chen Heqin's child-centred approach to music education remains a guiding principle in China. Thus, it advocates for a pragmatic academic focus that prioritises truth and practical application in both learning and teaching.

In addition, past studies showed the importance of employing diverse teaching methods in early childhood music education. To exemplify, Chen (2020) identified techniques such as heuristic teaching, cooperative learning and personalised guidance as critical factors that influence children's musical performance and learning outcomes. The study also examined the positive impact of preschool children's participation in music performances. It noted that such experiences enhance their musical skills, expressive abilities and emotional development. To conclude, these findings illustrate the multidimensional role of early childhood music education in fostering not only musical aptitude but also broader cognitive, emotional and social growth in young learners.

Globally, extensive research has highlighted the critical importance of early childhood music education in fostering children's emotional, intellectual and social development. Historical perspectives have consistently recognised music as a vital tool for nurturing these aspects. It is supported by Bakola et al. (2019). Over time, the principles and objectives of music education have become increasingly well-defined and universally acknowledged in education. Hence, they reflect its growing significance in shaping well-rounded learners.

Distinct geographical regions exhibit varying philosophies and practices in early childhood music education. European countries often incorporate traditional folk music into their teaching methods. They emphasise cultural heritage and communal participation. In contrast, American approaches tend to prioritise music creation and performance. They encourage individual expression and creativity (Mabingo, 2019). Despite these differences,

there is a global consensus on the essential role of music education in promoting the holistic development of young children. This shared understanding has influenced educational policy-making and strategic initiatives worldwide (Nogaj, 2020).

Moreover, research has demonstrated the developmental benefits of engaging children in music activities from an early age. For instance, integrating music with games has been shown to ignite a deeper interest in music and enhance engagement (Putkinen et al., 2019). Next, the quality and accessibility of music education are critical factors in shaping public policy. Hodges (2022) argued for the importance of expanding access to music education for all children. It has universal value. Similarly, educational strategies increasingly focus on the role of interaction and feedback in music learning. Lee-Cultura et al. (2022) highlighted how these elements enhance the learning experience. They promote both skill development and emotional connection to music.

In conclusion, early childhood music education is deeply rooted in ancient traditions while continuing to evolve as an internationally recognised and researched field. The consistent refinement of pedagogical practices coupled with ongoing research demonstrate its immense potential to enrich the lives of children worldwide. As access to high-quality music education expands, its role in fostering holistic child development is likely to grow. Therefore, it offers a promising future for this transformative discipline.

Methodology

To address the research questions, this study adopted a systematic approach to selecting suitable past studies for review. The initial phase involved utilising Google Scholar with keywords such as "children music education," "child music education," "preschool music education," and "early childhood music education." This search yielded 17,900 publications since 2021, an unmanageable volume. Consequently, the researchers turned to a second database, Scopus, which initially produced 125 publications. To maintain focus on the most recent studies, only publications from 2021 onwards were considered, narrowing the selection to 50 publications.

The researchers further refined their selection by focusing exclusively on articles, reducing the total to 38 publications. By analysing abstracts for keywords such as "early childhood music education," "music education," "music," and "preschool education," 26 relevant publications were identified. Limiting the review to studies published in English reduced the number to 23 publications. Finally, due to open-access considerations, 10 publications were selected for the final review. The final stretch of keywords included: TITLE-ABS-KEY ("children music education" OR "child music education" OR "preschool music education" OR "early childhood music education") AND PUBYEAR > 2020 AND PUBYEAR < 2025 AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (EXACTKEYWORD , "Early Childhood Music Education") OR LIMIT-TO (EXACTKEYWORD , "Music Education") OR LIMIT-TO (EXACTKEYWORD , "Music") OR LIMIT-TO (EXACTKEYWORD , "Preschool Education")) AND (LIMIT-TO (LANGUAGE , "English")) AND (LIMIT-TO (OA , "all")). A flowchart is attached below for better understanding.

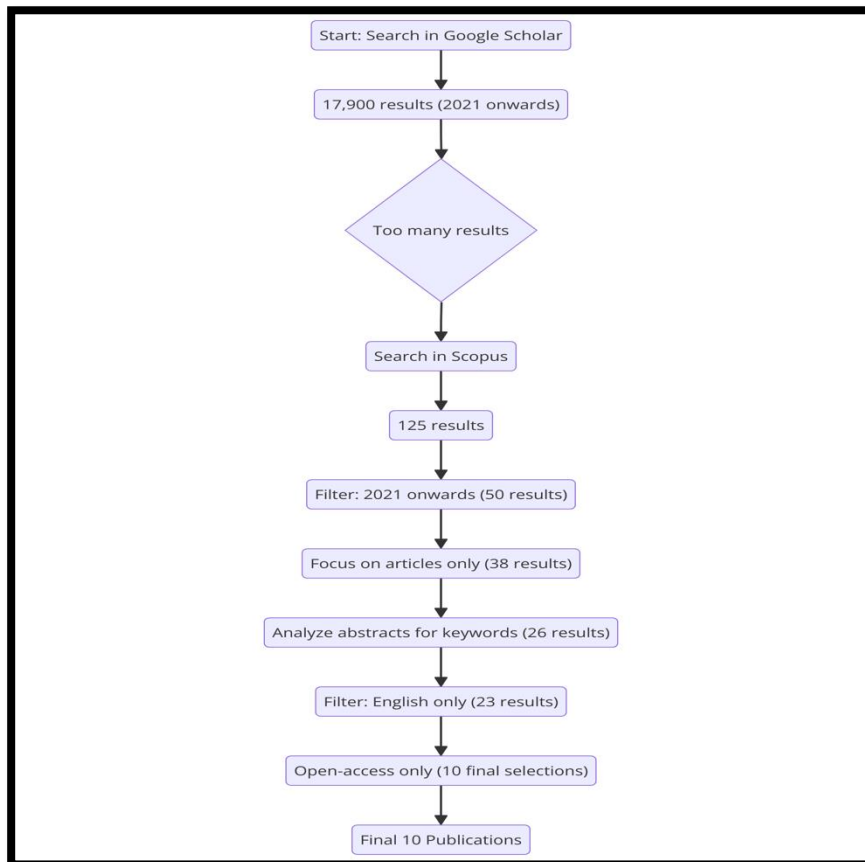


Figure 1 Research Methodology Flowchart

Results

The findings are presented in alignment with each research question to ensure a structured and focused analysis of the study outcomes.

Research Question One: What previous studies have explored music education for children?

A total of ten publications related to early childhood music education were selected for review. The table summarises these publications.

Table 1

Related Previous Studies

No.	Author(s)	Year	Title	Journal	Scopus Citation
1.	Gong	2022	Application of Multimedia Human-Computer Interaction Technology in Preschool Children Drama Education	Advances in Multimedia	5
2.	Ruokonen et al.	2021	The significance of music in early childhood education and care of toddlers in Finland: an extensive observational study	Music Education Research	6
3.	Rufino et al.	2024	Musical instrument classifier for early childhood percussion instruments	PLoS ONE	0
4.	Angi	2021	Examining the relation between form information and movement in music education: The skeleton dance	Cypriot Journal of Educational Sciences	0
5.	Yue and Shen	2024	Development strategy of early childhood music education industry: An IFS-AHP-SWOT analysis based on dynamic social network	PLoS ONE	2
6.	Wickett and Parker	2024	Collaboration, relationships and fleeting opportunities: growing the future early childhood music education workforce	Music Education Research	0
7.	Thapa and Rodríguez-Quiles	2023	Evaluation of the Early Childhood Music Education project's influence on the development of 3-to 5-year-old children in Andalusia, Spain	British Journal of Music Education	3
8.	Barrett and Zhukov	2024	Enduring impacts of collaborative workplace music mentoring for early childhood generalist teachers, music mentors and students	Music Education Research	0
9.	Ilari et al.	2021	Musical Activities, Prosocial Behaviors, and Executive Function Skills of Kindergarten Children	Music and Science	4
10.	Szűcs	2022	The Relationship between Family Milieu and Music Education	Social Sciences	0

This table presents 10 past studies focused on early childhood music education. To initiate, Gong (2022) examined the integration of multimedia and human-computer interaction technology into preschool drama education. Published in *Advances in Multimedia*, the study has been cited five times. It indicates moderate academic influence. Similarly, Ruokonen et al. (2021) focused on the role of music in early childhood care in Finland. They utilised observational methods. Published in *Music Education Research*, a specialised journal, this study has been cited six times. Hence, it reflects relatively high recognition.

Some past studies focused on technological applications, such as Rufino et al. (2024). They developed a classifier for early childhood percussion instruments. Published in *PLoS ONE*, a multidisciplinary journal, this study remains uncited. It is due to its recent release. In contrast, Angı (2021) investigated the connection between form information and movement in music education using “The Skeleton Dance,” but has not yet been cited. Similarly, it is due to its niche focus or limited visibility in the academic community.

Other research examined broader strategies and psychological outcomes. For instance, Yue and Shen (2024) explored the development of the early childhood music education industry through advanced analysis frameworks. Published in *PLoS ONE*, it has received two citations. It indicates emerging recognition. Similarly, Ilari et al. (2021) investigated the relationship between musical activities, prosocial behaviour and executive functions in kindergarten children. Published in *Music and Science*, it has been cited four times. Thus, it reflects moderate academic impact.

Several papers focused on collaboration, pedagogy and social contexts. Wickett and Parker (2024) analysed collaboration and workforce development in early childhood music education, while Barrett and Zhukov (2024) discussed the long-term effects of collaborative music mentoring on teachers and students. Both papers were published in *Music Education Research* but remain uncited. Again, it is due to their recent publication. Szűcs (2022), on the other hand, explored the relationship between family environment and music education. Its publication in *Social Sciences* suggests an interdisciplinary perspective, although it remains uncited.

Key observations from the table include the diverse focus areas of early childhood music education research, ranging from technological integration and pedagogical methods to psychological and industry-related outcomes. Citation counts vary significantly, with some studies gaining moderate recognition and others remaining uncited, possibly due to niche topics or recency. Journals like *Music Education Research* feature prominently. It accentuates the centrality to this field of study.

Research Question Two: What are the specific research aims of these studies?

The researchers identified the research aims of the 10 selected studies on early childhood music education. A table summarising these research aims is presented below, accompanied by elaborations that provide deeper insights into the focus areas and objectives of each study.

Table 2

Research Aims

No.	Author(s)	Year	Research Aim
1.	Gong	2022	Proposed the application of multimedia human-computer interaction technology in preschool children's drama education
2.	Ruokonen et al.	2021	Investigated the role of music education in early childhood education and care in relation to the daily activities of children ages one to three
3.	Rufino et al.	2024	Presented a musical instrument classifier for detecting tambourines, maracas and castanets, instruments that are often used in <i>early childhood music education</i> . Generated a dataset with diverse instruments (e.g., brand, materials, construction) played in different locations with varying background noise and play styles. Conducted sensitivity analyses to optimize feature selection, windowing time, and model selection.
4.	Angı	2021	Examined the musical characteristics of The Skeleton Dance, the first cartoon of the series, and the relationship between form structure and movement.
5.	Yue and Shen	2024	Proposed an analytical method based on dynamic social networks in conjunction with Intuitionistic Fuzzy Sets, Analytic Hierarchy Process, and Strengths, Weaknesses, Opportunities, and Threats analysis,
6.	Wickett and Parker	2024	Mapped the Soundwaves narrative
7.	Thapa and Rodríguez-Quiles	2023	Investigated the influence of the <i>Early Childhood Music Education</i> project on general aspects of child development.
8.	Barrett and Zhukov	2024	Documented the enduring impacts of a workplace music mentoring programme for generalist classroom teachers in early childhood school settings in Australia.
9.	Ilari et al.	2021	Investigated the role of a 5-week music program on prosocial behaviors (instrumental helping and sharing) and executive function skills (cognitive flexibility and working memory/inhibition control) of 103 kindergarten children from two public schools in a large urban center in the United States, serving predominantly Latinx children from underserved communities
10.	Szűcs	2022	Examined what patterns facilitated <i>children's music education</i> and whether there were objectively justifiable differences in the socioeconomic status of music students and non-musical students

This table outlines ten past studies on children's music education. It focuses on their research aims and providing insights into various aspects of the field. These studies explored diverse topics, including technology integration, pedagogical approaches, the developmental impact of music and socio-economic factors. They highlight the breadth of research in early childhood music education. For example, Gong (2022) proposed integrating multimedia human-computer interaction technology into preschool drama education. It emphasises the potential of technological advancements to enrich learning experiences by combining music and drama. Similarly, Ruokonen et al. (2021) examined the role of music in early childhood education, specifically its impact on the daily routines of children aged one to three. It provides valuable insights into how music influences behaviour and learning processes during early development. Other studies, such as Rufino et al. (2024), focused on developing a classifier for commonly used percussion instruments like tambourines and maracas in early childhood music education. They also included generating datasets and conducting sensitivity analyses and demonstrating the use of technology to improve the organisation and assessment of music education resources. Angi (2021) investigated the musical and structural characteristics of *The Skeleton Dance* and its relationship with movement. It offers an enriched understanding of how rhythm and physical expression interact in music education. Then, Yue and Shen (2024) explored the development of the early childhood music education industry through advanced analytical techniques, such as Intuitionistic Fuzzy Sets and SWOT analysis. They presented a strategic framework for enhancing the field by considering social and systemic influences. Also, Wickett and Parker (2024) contributed to this focus by mapping the narrative of "Soundwaves," a thematic initiative aimed at fostering collaboration and innovation in music education.

The developmental impact of music education was another major focus. Thapa and Rodríguez-Quiles (2023) evaluated the Early Childhood Music Education project. They provided empirical evidence of the cognitive, emotional and social benefits of music education for young children. Similarly, Ilari et al. (2021) investigated the effects of a five-week music program on prosocial behaviours and executive functions, such as cognitive flexibility and memory in kindergarten children with a focus on underserved Latinx communities. They highlighted the social and cognitive benefits of music education. Moreover, they emphasised its role in promoting equity and inclusion. Barrett and Zhukov (2024) examined the long-term effects of a workplace music mentoring program for generalist teachers in early childhood settings in Australia. It shows the importance of professional development for educators and its positive ripple effects on educational outcomes. Finally, socio-economic factors were addressed by Szűcs (2022), who explored disparities between music and non-music students. It highlighted how socio-economic factors impact children's access to music education.

This review provides critical insights into the need for greater equity in music education. Collectively, these past studies illustrate key trends in the field. The integration of technology (Gong, 2022; Rufino et al., 2024) highlights its growing role in enhancing teaching methods and resource management. The developmental benefits of music (Ilari et al., 2021; Thapa & Rodríguez-Quiles, 2023) reinforce its value in fostering cognitive, social and emotional growth. Additionally, the focus on empowering educators (Barrett & Zhukov, 2024) and addressing socio-economic disparities (Szűcs, 2022) emphasises the importance of inclusivity and teacher support in advancing early childhood music education. Together, these

PAST studies provide a comprehensive understanding of how music education shapes learning experiences, addresses challenges and fosters equity in educational settings.

Research Question Three: What insights can be drawn from the findings?

This section summarises the findings of 10 past studies on children's music education and synthesises the researchers' insights derived from these findings. A table is presented below to organise the findings and provide elaborations on each study's focus.

Table 3

Findings

No.	Author(s)	Year	Findings
1.	Gong	2022	The application effect of multimedia human-computer interaction technology in preschool children's drama education was good, which can provide better services for preschool children's drama education.
2.	Ruokonen et al.	2021	The children in groups where music/singing was emphasised exhibited more sustained intense activity and less low or interrupted involvement. These groups also exhibited more positive emotions, increased social adaptation and increased social involvement with adults. Special emphasis on music enhanced the pedagogical learning environment.
3.	Rufino et al.	2024	A low feature space is sufficient for the recognition of non-pitched instruments
4.	Angi	2021	The use of cartoon in <i>children's music education</i> in terms of listening, analysis / grouping and application dimensions would be positive and beneficial.
5.	Yue and Shen	2024	Institutions within the <i>early childhood music education</i> industry need to adopt a development strategy that leverages their strengths and opportunities to foster sustainable growth
6.	Wickett and Parker	2024	The study finds that collaborations between universities and arts organizations, such as the Soundwaves project, are dynamic and relational, fostering unique and non-linear learning opportunities. These collaborations resist the influence of neoliberalism, particularly its focus on standardization, individualism, and hierarchical relationships, by creating fleeting and experimental learning experiences that emphasize creativity, play, and horizontal relationships. The study identifies these short-term opportunities as impactful, despite their transient nature, offering students meaningful real-world learning experiences. By incorporating posthuman and critical new materialist perspectives, the research highlights the agency of non-human elements, such as digital tools and objects, in shaping educational practices and challenging traditional approaches. These collaborative and fleeting opportunities contribute significantly to the growth of the Early Childhood Music Education (ECME) workforce, enabling inclusive and

			socially just learning. The study also emphasises the importance of valuing unplanned, invisible educational processes, which allow for dynamic, emergent learning that resists formulaic and instrumentalized practices.
7.	Thapa and Rodríguez-Quiles	2023	<i>Early Childhood Music Education</i> project has a positive impact on the different dimensions,
8.	Barrett and Zhukov	2024	This study identifies participant perceptions of enduring outcomes, enduring effective mentoring, and effective mentor qualities. Two researchers undertook thematic analysis independently and conducted iterative discussions to refine the emerging themes. Enduring outcomes for mentors, teachers and students included: (1) music mentoring as collaborative self-development; (2) identification and realisation of individual and collective goals for music teaching; (3) reflection, feedback and joint planning informing learning; (4) integration of music into daily activities, lesson transitions, school culture; (5) creating a community of music practice in and across schools; and (6) improved classroom climate and enhanced student engagement and positive behaviours. Enduring qualities of effective music teaching included: (7) building teacher confidence and competence for music leadership; (8) observation of expert practice as a learning tool; (9) focused feedback informing lesson planning and implementation; and (10) specialised, collaborative workplace mentoring. Enduring qualities of effective music mentors included sensitivity, responsiveness, situational awareness, flexibility, and subject and pedagogic expertise.
9.	Ilari et al.	2021	The short music program positively influenced children's cognitive flexibility, but not working memory, nor prosocial skills (sharing and helping)
10.	Szűcs	2022	Prove the existence of differences in the socioeconomic status of music and non-music students.

The table summarises ten past studies on early childhood music education. It highlights their key findings across themes such as technology integration, pedagogical strategies, developmental impacts, workforce development, industry growth and socio-economic considerations. One of the major themes explored is the integration of technology into music education. Gong (2022) demonstrated how multimedia human-computer interaction technology can enhance preschool children's drama education by creating engaging learning environments and improving service delivery. Similarly, Rufino et al. (2024) showed that low feature space is sufficient for recognising non-pitched instruments. They illustrated the potential of technology to simplify and optimise music education processes. These findings highlight how advanced tools such as multimedia platforms and instrument recognition systems can make music education more efficient, accessible and engaging.

Next, pedagogical methods were another focus of these studies. Angi (2021) showed that incorporating cartoons into music education enhances children's listening, analysis, grouping and application skills. Ruokonen et al. (2021) found that integrating music and singing into early childhood education sustains student activity, fosters positive emotions and improves social adaptation. These findings suggest that creative and interactive teaching methods, such as using visual media or emphasising singing can deepen engagement, elicit positive emotions and foster better social interaction among young learners.

Following that, the developmental and cognitive impacts of music education were also explored in-depth. Thapa and Rodríguez-Quiles (2023) reported that the Early Childhood Music Education project positively influenced various aspects of children's development, including emotional and social skills. Meanwhile, Ilari et al. (2021) found that short-term music programs improved children's cognitive flexibility but had limited effects on working memory and prosocial behaviours. These studies show the significant but varied developmental benefits of music education, with short-term programs excelling in flexibility and adaptability but requiring long-term interventions to achieve broader outcomes, such as enhanced memory and prosocial skills.

In addition, workforce development and mentoring emerged as critical factors in the effectiveness of music education. Barrett and Zhukov (2024) identified lasting benefits of workplace mentoring for teachers, including increased confidence, competence, classroom engagement and collaboration. They also highlighted essential mentor qualities such as sensitivity, responsiveness and subject expertise. Wickett and Parker (2024) focused on the dynamic and relational nature of collaborations between arts organisations and universities, noting that such partnerships foster inclusivity, creativity and social justice while contributing to workforce development in early childhood music education. These findings highlight the important role of professional development, mentoring and collaborative practices in empowering educators and driving innovation in music education.

Moreover, strategic development and the growth of the music education industry were also emphasised in the findings. Yue and Shen (2024) proposed that early childhood music education institutions adopt strategic approaches that leverage strengths and opportunities to ensure sustainable growth. Wickett and Parker (2024) argued for flexible and non-linear learning opportunities that counteract standardisation while fostering creativity in education. These insights point to the importance of adaptable strategies and innovative planning to support the sustainable growth of music education. Eventually, they enabling early childhood music education to meet evolving societal and educational demands.

Lastly, socio-economic considerations were addressed by Szűcs (2022), who highlighted disparities in access to music education between students from different socio-economic backgrounds. These findings emphasise the significant impact of socio-economic inequalities on children's participation in music education, calling for targeted efforts to promote inclusivity and equal opportunities for all children, regardless of their background.

In conclusion, the findings from these ten past studies indicate the multifaceted benefits of early childhood music education, ranging from cognitive and social development to enriched teaching practices and strategic industry growth. However, challenges such as

socio-economic disparities and the need for sustained interventions remain critical areas for further exploration. Addressing these challenges with innovative pedagogies, strategic planning, and inclusive policies can significantly enhance the effectiveness, accessibility and reach of music education to ensure its continued role as a transformative force in early childhood development. A figure is attached below as a summary.



Figure 2 Insights Drawn

Discussion

First and foremost, the integration of technology into early childhood music education is a recurring theme (Gong, 2022; Rufino et al., 2024). Gong (2022) highlighted the potential of multimedia and human-computer interaction technologies to enhance preschool drama education. It provided an innovative approach to blending music and performance arts. Rufino et al. (2024) extended this focus by developing a classifier for non-pitched percussion instruments. They showcased the potential of digital tools to optimise teaching resources. These findings align with earlier research on technology's role in improving educational delivery and engagement (Yu et al., 2022). However, the application of these technologies remains limited to niche contexts, such as drama education or instrument classification. To maximise their impact, future research should explore broader and more integrated uses of technology across various dimensions of music education, such as collaborative platforms, interactive learning tools and adaptive teaching software.

Next, creative and interactive teaching methods also emerge as a critical theme in early childhood music education. Ruokonen et al. (2021) demonstrated the benefits of integrating music and singing into daily routines. It could foster sustained activity and positive emotions. Also, it could improve social adaptation in children. Similarly, Angı (2021) explored the use of cartoons in music education to enhance children's analytical and application skills. These findings build on earlier studies (Stephenson, 2023) that emphasised the role of creativity in engaging young learners. However, both studies lack a longitudinal perspective, which could provide deeper insights into the long-term effectiveness of these pedagogical approaches. Future studies should focus on examining the sustained impact of such strategies over time and across diverse educational contexts.

Moreover, the developmental benefits of music education are another major focus. Thapa and Rodríguez-Quiles (2023) and Ilari et al. (2021) highlighted its positive effects on emotional, cognitive and social skills. Thapa and Rodríguez-Quiles (2023) reported comprehensive benefits across multiple developmental dimensions, while Ilari et al. (2021) emphasised specific improvements in cognitive flexibility. These findings are consistent with existing literature on the cognitive and emotional advantages of music education (Váradi, 2022). However, Ilari et al. (2021) pointed out the limited effects of short-term music programs on memory and prosocial behaviours. Thus, it raises important questions about the duration and intensity of interventions needed to achieve lasting developmental outcomes. Future research should investigate the optimal duration, frequency and intensity of music education programs to maximise their impact on children's development.

Furthermore, teacher empowerment and collaboration are also critical to the success of early childhood music education. Barrett and Zhukov (2024) identified mentoring as a key factor in boosting teacher confidence, competence and classroom engagement. Similarly, Wickett and Parker (2024) emphasised the transformative potential of partnerships between arts organisations and universities. They foster inclusivity, creativity and sustainable practices. These findings echo earlier studies (Sancar et al., 2021) that indicating the importance of teacher training in improving educational outcomes. However, the limited citations of these recent studies reflect a broader challenge, such as, the translation of workforce development research into actionable policies and practices. Future efforts should focus on bridging this gap by creating scalable mentoring programs and fostering greater collaboration between educators, policymakers and cultural institutions. Subsequently, the issue of socio-economic disparities in music education is also a critical area of focus. Szűcs (2022) highlighted the barriers faced by disadvantaged students in accessing music education opportunities. It reflects similar findings in earlier research (Shaw & Mayo, 2022). However, practical solutions to address these disparities remain underexplored. Strategies such as increased funding for underprivileged schools, community-based music programs and inclusive policies that prioritise access for marginalised groups are essential. Future research should prioritise the development and evaluation of these strategies to promote equity and inclusivity in music education.

In conclusion, the reviewed studies accentuate the transformative potential of early childhood music education in fostering cognitive, emotional and social development, as well as empowering educators and advancing teaching practices. However, they also reveal critical gaps in implementation and inclusivity. Addressing challenges such as socio-economic disparities, the limited impact of short-term programs and the narrow application of technology will be essential for expanding the reach and effectiveness of music education. Future research should integrate innovative pedagogies, strategic planning and inclusive policies to ensure that music education continues to play a pivotal role in early childhood development. By addressing these gaps, the field can unlock its full potential as a transformative and equitable force in education.

Conclusion

The reviewed studies present the multifaceted potential of early childhood music education. They span from technological advancements, pedagogical innovations,

developmental impacts, workforce development and socio-economic considerations. Key findings reveal that integrating technology into music education, such as multimedia tools (Gong, 2022) and musical instrument classifiers (Rufino et al., 2024) could enhance teaching methodologies and resource management. They make music education more engaging and efficient. Similarly, pedagogical strategies, including the incorporation of music and singing into daily routines (Ruokonen et al., 2021) and the use of cartoons to improve analytical skills (Angi, 2021) foster creativity and deepen engagement among young learners. Developmentally, music education has been shown to contribute significantly to emotional, cognitive and social growth (Thapa & Rodríguez-Quiles, 2023; Ilari et al., 2021). These findings highlight the transformative role of music education in early childhood development.

From a policy perspective, the findings stress the importance of strategic planning and investment in music education. Policymakers should prioritise funding for inclusive music programs in underprivileged schools to address socio-economic disparities (Szűcs, 2022). Curriculum developers can utilise insights on technology integration and innovative teaching methods to design adaptive and dynamic music curricula that cater to diverse learning needs. Music teachers require ongoing professional development to effectively implement these strategies. Initiatives such as mentoring programs (Barrett & Zhukov, 2024) and collaborative partnerships between arts organisations and universities (Wickett & Parker, 2024) can empower educators, enhance teaching competence and promote sustainable practices.

Despite these promising findings, the review has several limitations. The exclusive reliance on the Scopus database restricts the breadth of the reviewed literature. It might overlook valuable contributions from other sources. Additionally, the variation in citation counts across studies may not fully reflect their academic or practical significance for recently published works that have had limited time to gain recognition. The focus on English-language publications further limits the inclusion of region-specific studies from non-English-speaking countries, which may offer unique cultural and educational insights.

To overcome these limitations, future research should adopt a broader and more inclusive approach by incorporating multiple databases and non-English studies to capture a wider range of perspectives. Longitudinal studies are also needed to evaluate the sustained impact of music education strategies on cognitive, social and emotional development. Further research should prioritise practical solutions to socio-economic disparities, such as community-based music programs and equitable funding models. Additionally, advancements in technology, such as interactive platforms and AI-driven learning tools should be explored for their scalability and adaptability across diverse educational contexts.

In conclusion, early childhood music education holds transformative potential for fostering holistic development, enhancing teaching practices and promoting inclusivity. By addressing the identified gaps and limitations, the field can evolve to meet the demands of modern education while ensuring equitable access and meaningful outcomes for all children. Through strategic collaboration among policymakers, educators and researchers, music education can continue to serve as a vital and transformative force in shaping future generations.

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