

Activities of musical expression and creation in the context of the integrated curriculum for early childhood education and care

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Abstract: Adhering to the principles of social constructivism, as well as understanding the child's personality and respecting the child as a social being in a certain context, the National Curriculum for Early Childhood Education and Care offers a new paradigm of childhood. Recognizing the child's holistic image and the integrated and exploratory nature of the child's learning, musical learning activities are organized as part of a whole within a project topic. To better understand and improve the representation of musical activities in educational practice, this research aimed to describe how musical activities are implemented from the aspect of integrated curriculum and project-based learning. Participatory ethnography as a type of practice-based research was applied to present and describe various forms and ways of implementing and connecting musical activities with other methodological areas within project-based learning. A total of 18 children aged 4 to 6 years participated in the activities. To gain a deeper understanding of the children's culture, experiences and development, while building trust and supporting their holistic wellbeing, the research used ethnographic methods, including participant observation with a focus on reflexivity and descriptive writing. It is concluded that educators can effectively integrate musical activities into project-based learning in line with the national curriculum, which supports holistic child development and enriches children's competencies by creatively combining music with other areas of development.

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Introduction

The ubiquity of music in the modern world has contributed to children being surrounded by music from an early age. Their spontaneous reaction to music, manifested in eye movements in search of a sound, indicates their early perception of music (Ilari, 2002). Early musical engagement from a social perspective is rooted in communicative musicality between a mother or caregiver and child, incorporating rhythm, movement, vocal forms and narrative elements (Malloch & Trevarthen, 2009). This fosters attachment, emotional development, cultural and social learning and the growth of musicality (Dissanayake, 2012).

According to Edwin Gordon's theory of music learning (1965, 1977), the early and pre-school years are crucial for the development of musical potential, which stabilises around the age of nine under the influence of formal and informal factors (Gordon, 1999, 2011). While Gardner (1983) emphasized the importance of developing multiple intelligences, including musical potential, to align career choices with an individual's intelligence spectrum, Gordon (1967) reinforced this idea by defining musical aptitude as a unique intellectual trait, asserting its normal distribution, and highlighting its weak link to traditional intelligence (Cutietta, 2021; Hohn, 2021).

In addition to cultural diversity and educational policies that shape musical identity (Ilari, 2017), the musical environment and informal education supported by parents and early childhood educators play an important role in the development of children's musical abilities (Gruhn, 2019). Timely identification of

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musical giftedness is essential to provide appropriate support and foster further development (Bačlija Sušić & Svalina, 2021; Gagné, 2003).

The Ministry of Science, Education and Sports [Ministarstvo Znanosti, Obrazovanja i Sporta] (2014) is in line with the 2018 European Council recommendation and emphasizes holistic development and well-being through eight key competences, including communication, mathematics and science, digital skills, learning to learn, social and civic skills, entrepreneurship, and cultural awareness. It also emphasizes respecting and encouraging children's initiative, allowing them to explore their interests and draw conclusions independently (Slunjski, 2015).

The learning process and features of an integrated curriculum, such as play, learning through play, and the social and physical environment, should be understood as interrelated elements, and activities in early childhood education (ECE) are not divided into separate subject areas or methodologies. In contrast to traditional classroom structures (introduction, main part, evaluation), working in smaller groups in activity centres is more effective in fostering quality interactions and learning (Slunjski, 2020), promoting a more integrated and engaging approach to education. In line with the child's exploratory way of learning and acquiring knowledge, as well as skills and values that are fundamental to education in the 21st century (critical thinking, communication, collaboration and creativity) (Jensen, 2015; Lamb et al., 2017), activities in an ECE institution should be based on a project-based learning (PBL) method.

Project-Based Learning is a pedagogical approach in which children actively build knowledge over time by working together to create a public product that addresses an important question or solves a problem. This method encourages them to explore, ask questions, and take initiative in their learning. Beyond academic content, it helps them understand themselves as individuals while fostering relationships with peers, teachers, and the broader community. By tapping into children's curiosity and interests, PBL creates meaningful, real-world learning experiences that impact their lives and the lives of others (Lev et al., 2020).

Therefore, when working with children, especially in the preschool period, different activities are planned thematically and designed as a whole, as opposed to separate learning areas (Ministry of Science, Education and Sports, 2014). In doing so, it is important to highlight the role of educators in facilitating learning through exploration, rather than providing ready-made answers, as children engage in PBL work overtime to create or solve a specific problem (Duke, 2015; Rinaldi, 2021). Accordingly, PBL responds to the exploratory nature of the child's learning process, but also supports the types of play-based activities that are crucial for cognitive, social and emotional development.

Symbolic and pretend play are key elements of child development, emphasised by influential psychologists such as Piaget (1963), Vygotsky (1977) and Bruner (2000). This type of play allows children to explore and make sense of their world in a creative way, promoting cognitive, social and emotional growth. Play-based learning (PBLearning) in early childhood education and care (ECEC) places the child at the centre of the learning process and integrates academic, social and emotional development. By aligning with children's interests, abilities, and developmental stages, PBLearning creates meaningful learning experiences that meet individual needs (Pyle & DeLuca, 2017). Play supports the Zone of Proximal Development (ZPD) by encouraging collaboration and individual participation, with facilitation and adult guidance essential to maintain engagement and enrich play scenarios to support developmental growth (Hakkarainen & Brédikytè, 2014).

Building on the importance of play in early childhood development, the learning environment plays a crucial role in promoting integrated and holistic learning. A well-organised spatial and material environment, rich in diverse resources and materials, encourages children to explore, discover and experiment independently. This approach allows children to engage with a variety of media such as movement, sound, drawing and language, encouraging creativity and supporting their cognitive, social and emotional development (Vujičić & Petrić, 2021). In line with this, for young children, breaking down complex problems into smaller parts within PBL helps them solve problems and feel successful along the way. By breaking down challenges, such as designing an entire classroom, into manageable steps and

creating questions under the umbrella of the driving question, this approach fosters a classroom culture where learning is relevant, authentic, and embedded in the project, supporting children's multimodal expression and development through the use of different media (Lev et al., 2020). Based on the goal of musical activities, which is to help children express themselves and thus contribute to their holistic development (Bautista et al., 2022), music becomes one of the key media that significantly supports this aspect of PBL, in which children demonstrate their learning using different modalities (Lev et al., 2020).

Given the numerous benefits of music, it fosters problem-solving, creativity, cognitive flexibility, and social collaboration in PBL settings. Musical activities have a significant impact on children's creative thinking and problem solving skills. In particular, musical creative activities such as improvisation and problem solving play a key role in fostering creativity and enhancing problem solving skills (Zhang, 2023). Both formal and informal musical activities have been found to promote analytical thinking, planning, attention, and problem solving (Serpell & Esposito, 2016).

In addition, making music has been shown to enhance executive functions, including cognitive flexibility, which is essential for problem solving. Musicians must interpret notation, recall and improvise music, plan ahead, and coordinate with others, all while monitoring their performance (Okada & Slevc, 2018). Managing this complexity may strengthen executive functions, including cognitive flexibility, and thereby improve problem-solving skills in other contexts (Cabanac et al., 2013). Children's exposure to different types of music contributes to the creation of more connections between brain cells, and greater diversity in music and its associations (e.g., dance) further strengthens these connections. This process improves cognitive functions such as memory, attention, and problem-solving skills (Zaatar et al., 2024).

Collaborative musical expression and performance promotes children's social development, including cooperation, exchange, and effective communication (MacRitchie & Garrido, 2019), as well as the development of socio-emotional competencies and better group cohesion, which contributes to the well-being of children in the group (Bačlija Sušić & Buerger-Petrović, 2023). Children also develop important social skills such as empathy and teamwork through listening and interacting with each other (Mendo-Lazaro et al., 2018).

Musical Activities in an Integrated Curriculum

Children's musical experiences acquired in an ECE institution are the basis for their later music education. At the same time, in contrast to the results and outcomes, it is important to focus on the process itself and the quality of the relationship when carrying out activities, as well as children's well-being as the fundamental goal of all educational activities in the curriculum (Ministry of Science, Education and Sports, 2014). The child's right to play and express themselves in art, including music, is recognized as a benefit for the child and is included in the Convention on the Rights of the Child (United Nations, 1989).

Musical activities in ECE play a crucial role in shaping children's personalities by enriching their musical experiences, fostering a love for music, developing musical skills, perception and taste, and enhancing emotional and musical sensitivity. In addition to the above-mentioned effects and benefits of music on children's development, musical activities in ECE play a crucial role in shaping their personalities by enriching musical experiences, fostering a love of music, developing musical skills, perception and taste, and enhancing emotional and musical sensitivity. These activities also promote listening skills, artistic expression, cultural awareness and aesthetic taste. Similar to primary school, where music education is integrated with other subjects (Naimovich, 2022), ECE also requires musical activities to be integrated with other project-based activities and aspects of children's daily lives. Accordingly, by incorporating different segments of the ECE process, such as protection, care and education (Ministry of Science, Education and Sports, 2014), musical activities can be integrated into everyday activities when working with children, in the context of different related thematic activities and PBL.

Within the National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014), musical activities fall under the eighth competence, "Cultural Awareness and Expression". This competence includes "encouraging children's creative expression of ideas, experiences

and feelings in a range of artistic areas, including music, dance, drama, literature and the visual arts. Equally, this competence aims to develop children's awareness of local, national and European cultural heritage and their place in the world... Thus, children will be encouraged to engage in various forms of creative processing of their experiences in a range of artistic areas and expressive media" (Ministry of Science, Education and Sports, 2014, pp. 29-30).

This is in line with the universal and communicative nature of music (Cross, 2014) and the multimodal nature of music education (Bačlija Sušić, 2019; Bačlija Sušić & Brebrić, 2024; Cheng, 2015; Pramling & Wallerstedt, 2009; Webster, 2016). Accordingly, the child has a spontaneous need for multimodal musical expression, which further indicates the use of a range of media, highlighting the importance of implementing an integrated approach to early childhood music education (Barrett et al., 2022). This approach relies on interdisciplinary connections and contemporary knowledge from other fields and requires a holistic perspective that recognises the links between music and child development (Sarrazin, 2016).

The successful implementation of musical activities in ECE settings depends on a number of factors that go beyond educators' interest in and sensitivity to music. While promoting awareness of the holistic developmental benefits of music is essential, additional elements such as educators' personal musical experiences, acquired habits and formal musical competence play an important role. Research has consistently highlighted the limited preparation of educators to integrate musical activities into practice (Andang'o & Mugo, 2007; Barrett et al., 2019; Baum, 2017; Chen-Hafteck & Xu, 2008; Hash, 2010; Ilari, 2007; Koutsoupidou, 2010; Lau & Grieshaber, 2018; Liao & Campbell, 2016). Many studies emphasise the importance of initial teacher education and ongoing professional development in equipping educators with the skills and confidence needed for successful implementation (Barrett, 2014; Bautista et al., 2022; Ehrlin & Tivenius, 2018; Kretchmer, 2002; Lee, 2009; Lenzo, 2014; Nardo et al., 2006; Rajan, 2017).

Research Problem, Objective, and Question

The problem addressed in this participatory ethnographic research stems from the insufficient representation of musical activities in educational practice as an integral part of the integrated ECE curriculum. Unlike the current National Curriculum for Early and Preschool Education, earlier versions of the curriculum and educational programmes provided a more detailed focus on musical activities, reflecting the transmission-oriented approach of previous curricula (Mendeš, 2020).

Understanding practice can be seen as a set of activities that extend beyond the everyday way of thinking. This can result in new outcomes and insights leading to the creation of new theories (Candy & Edmonds, 2018). Accordingly, the aim of this research is to describe how musical activities can be connected to other areas of educational practice in the context of the Integrated National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014).

In relation to the above aim and problem, the following research question has been posed: How can musical activities be integrated with children's interests and other areas of ECE in line with the holistic and project-based approach to learning outlined in the National Curriculum for Early and Preschool Education (2014)?

Method

Research Design

In order to gain insights into children's interests and to promote higher-level thinking, the research used ethnographic methods, including photo and video documentation, direct and participant observation, and individual developmental maps.

Participant observation was the primary data collection method, with a focus on reflexivity and descriptive writing to capture everyday learning experiences (Mills & Morton, 2013). This ethnographic approach enabled a deeper understanding of children's culture, experiences and development, fostered trust and supported their holistic well-being (Albon & Huf, 2021; Köngäs & Määttä, 2023).

Participants

To meet the research criteria of focusing on children within the required age range, a group of children aged 4 to 6 years (N=18) was selected from a mixed-age group in an urban kindergarten, ensuring a manageable sample to study group dynamics and educational outcomes (Merriam & Tisdell, 2015). This selection is in line with the research focus on project-based learning, constructivist approaches and holistic education, which emphasises the integration of different age groups in the learning process.

Ethical Considerations

The research was conducted in accordance with the EECERA Ethical Code for Early Childhood Researchers, which ensures that the welfare of all participants, particularly young and vulnerable children, is protected. The code promotes the highest standards of research practice and academic integrity (Bertram et al., 2016).

In accordance with *The Ethics of Research with Children and Young People* (Alderson & Morrow, 2011), children and parents were informed about the way of conducting activities. The children agreed to participate and were informed of the possibility of withdrawing from the research at any time. Likewise, the parents provided written consent for their child's participation. In accordance with ethical principles that respect children's autonomy, each child has the right to decide whether to participate in research and can withdraw at any time without negative consequences. The research was approved by the *Ethics Committee of the Faculty of Teacher Education, University of Zagreb*.

Procedures

With the aim of the child's holistic development, highlighted in the National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014), all activities were connected and integrated within project-based learning. Considering children's interest in the animal world, as well as the approaching Easter time, three project themes were chosen: rabbit, spider, and bee. Topics changed every two weeks. Within each topic, children were offered a counting rhyme, a song, and listening material. When planning incentives and thinking about individual topics, the importance of an integrated and multimodal approach to the activities was considered.

In the context of the rabbit theme, children were provided with plasticine, rabbit figurines, and plasticine mats on their first day at the art centre. Since the plasticine was quite hard, the children opted to lay their rabbits down, commenting that they were resting and looking at the stars. Encouraged by this, one girl created a standing rabbit, explaining that it was "the boss of the other rabbits". Initially, the other children didn't like the idea of their rabbits being bossed around, but after some minor disagreements, they decided that they preferred their rabbits to lie down and gaze at the stars. In the Dramatic Play Centre, children witnessed a dramatization of the story "About the Easter Bunny" prepared by the educator. In the Math and Manipulatives Centre, children engaged in a game with rules "Add the corresponding number to the set of rabbits", while in the Construction Centre, they built a house for rabbits using wooden blocks, discussing where rabbits live and what their burrows look like.

After creating stick puppets for the story "About the Easter Bunny", the children improvised the dramatization themselves. Although there were minor disagreements during the process, they resolved everything through agreement. The stick puppets and rabbit figurines they crafted were then used, in line with the text and structure of the counting rhyme, during its introduction and adoption. Initially, the rhyme was performed rhythmically with movement, body percussion, and percussion instruments in various ways. In the subsequent performances, in addition to the aforementioned methods, the rhyme was also enacted with rhythm, at different tempos, and dynamics. Children were encouraged to suggest their own approaches, leading to one child proposing the use of stick puppets and figurines as a form of dramatization during the counting.

During the activities centred around the adoption of the song "Bunny Woes", the children engaged in tasks related to literacy and mathematics at the respective centres, based on their interests. A synthesizer,

brought by a parent, was introduced in the music centre, thereby involving the parent in the group's activities. Intrigued by the instrument, all the children expressed a desire to try playing it. Following the educator's presentation of the song, the children performed it by clapping, stepping, and moving, incorporating various amusing and creative actions such as standing on one leg, singing with a blocked nose, or with closed eyes. They also explored different associations suggested by the educator, such as imitating a sleepy rabbit or a hungry rabbit in a hurry for lunch, or a sneaky rabbit, and contributed their own ideas, such as singing in a deep voice, like opera singers, or in a funny voice etc.

In line with the project theme and the nature of the composition, "Kangaroo" from Saint-Saëns's *Carnival of the Animals* was chosen for the music-listening activity. Alongside the previously mentioned activities in different centres (building, math and manipulatives, literacy), the educator engaged the children in discussions about rabbits, including their diet, habitat, and fears. Given that the research involved a group of early English language learners, an application with English captions was utilized to introduce the children to various parts of the rabbit's body.

While listening to the music, the children independently recognized the instruments and afterwards, they commented on the tempo and dynamics, expressing their impressions and experiences (such as likening the music to an approaching monster or a hopping rabbit or kangaroo). Narrating a story about a rabbit jumping and listening in the forest further encouraged the children to immerse themselves in the role of the rabbit. They used plastic blocks as carrots and furniture as trees under which they imagined the rabbit sleeping.

When asked about the ending of the piece, some children suggested that the bunny fell asleep, while others felt the need to continue moving and listening to the music to conclude the story in their own imagined way.

In collaboration with educators, parents contributed beeswax and various wax figurines for the bee-themed topic. These items were made available to the children in the research centre, along with a magnifying glass and a plastic box containing a bee. In the literacy centre, children were provided with letters and word templates, while the math and manipulatives centre offered bee-themed games.

During the conversation about bees, discussions revolved around what bees do and what their "husbands" are called, as well as what they do. The children mentioned that there are also wasps, so the educator suggested that they explore the difference between bees and wasps at home with their parents. When discussing the ongoing decline in bee populations and its impact on ecosystems and human society, many children expressed sadness.

Following a cartoon and an English song titled "Here is the Beehive" in the media centre, one girl spontaneously began singing the song with correct English pronunciation, inspiring others to join in. The children proposed their own movements while singing, which they practised together before dividing into two groups to perform the song with movements for each other.

Most children found singing and dancing more enjoyable than simply watching others. They continued to sing the song during afternoon activities and while preparing to go outside. When they spotted bees, they alerted the educators to the potential danger of being stung.

As part of the following activity aimed at adopting the "Bumblebees and Bees" counting rhyme, the children engaged in the activities provided at the learning centres upon their arrival at kindergarten. During the "friendship circle", the English song about the beehive was sung again, and afterwards, one girl shared information from her parents about the distinction between bees and wasps. Some children wanted to recount their experiences of encountering a bee to the group, followed by everyone watching an educational video about bees with keen interest.

Encouraged by the educator, the children performed the "Bumblebees and Bees" counting rhyme in various meters, and then, the following week, in rhythm. Although some children initially struggled to learn the text, different associations (such as imagining bees "telling" the rhyme with their feet) and

incorporating movement, body percussion, and percussion instruments (as if the sticks were “talking”) helped them learn the rhyme through play. The counting rhyme was also used to count the children when determining whose turn was for a certain activity, further reinforcing its adoption.

During the third activity within the bee theme, alongside other activities, the children were provided with Kinder egg boxes in the art centre, which they used to create bees that they then placed in a beehive. In the music centre, the children had the opportunity to listen to a recording of Nikolay Rimsky-Korsakov's composition “Flight of the Bumblebee”, which inspired them to enact rapid movements, assuming the role of worker bees flying from flower to flower with their companions, collecting nectar. Additionally, a picture book brought by one of the children, related to a task involving parents, further enhanced the children's immersion in the role of the bumblebee.

Although the last theme of this project, spiders, was particularly challenging and interesting for the boys, the girls also actively participated in the activities offered across different centres (including picture books featuring spider themes, puzzles, charcoal for drawing spider webs, a spider found in a box by the children and their educator in the kindergarten yard, and a video showcasing various spider species). While one boy was drawing different types of spiders, several children decided to create a memory game with a spider theme on their own initiative.

The children quickly embraced the Spider counting rhyme, repeating it with movement, body percussion, and elements of dramatization. In addition to the provided activities, the counting rhyme was frequently incorporated into the children's self-initiated and self-organized activities, indicating a positive correlation between the children's interests and the quality of the activities performed.

As an additional incentive to engage with the English folk song “Itsy Bitsy Spider”, the educator, along with the children, constructed a large spider's web out of twine. The children crawled through it, enhancing their dexterity, coordination, flexibility, and agility. One boy suggested using a bell to signal the elimination of anyone who touched the web during the game. The song was performed with specific movements suggested by the children and the educator. The children encouraged and supported each other during the activities. Those who initially had difficulty coordinating movements with the song later engaged in the activities again during self-initiated and self-organized play, demonstrating their continued interest.

Following various incentives across centres, the children first engaged in free creative play while listening to the composition “Addams Family” by Vic Mizzy. The self-initiated and self-organized activity culminated in a joyful parade around the entire room. Although some children initially struggled to follow the so-called “musicogram”, which aids in understanding the composition's form by following diagrams on the screen, most persisted in the activity and successfully mastered it. Humming the melody of the composition during free afternoon play and outdoor activities further confirmed the children's interest, and the quality of the activities conducted.

Results and Discussion

In line with the research aim of exploring how musical activities can be integrated into different areas of educational practice, as well as the stated research question, the findings highlight multiple ways in which musical activities can be connected to other educational areas within project-based learning (PBL). In addition, the findings suggest that music plays a critical role in supporting children's multimodal development within PBL, reinforcing its importance while enhancing learning experiences and supporting the holistic developmental goals outlined in the integrated National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014). Specifically, musical activities contribute to children's cognitive, emotional, and social development, supporting creativity, problem-solving, and collaboration.

Using and combining various artistic media such as visual arts, movement, and drama with other media in the familiar manner of PBL, these activities were intentionally integrated into a play-based

learning environment, encouraging independent exploration, creativity, and motivation through developmentally appropriate practices. Building on this integration, musical activities such as learning and repeating counting rhymes, singing, and listening to music were tailored to children's interests and linked to broader project themes related to the animal world, including topics such as rabbits, spiders, and bees. Children participated in different activity centers based on their interests, such as the Manipulatives and Games Centre, the Literacy and Mathematics Centre and the Construction Centre. This participation allowed children to explore and develop skills relevant to different areas in an engaging and interactive environment, ensuring they could deepen their musical experiences while enriching their understanding of the world around them.

Based on the goal of musical activities-to help children express themselves and thus contribute to their holistic development (Bautista et al., 2022) music becomes one of the key media that significantly supports this aspect of PBL, where children demonstrate their learning through different modalities (Lev et al., 2020). In line with the holistic development goals outlined in the National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014), this integration enables children to deepen and express their musical experiences through syncretic and multimodal creative expression (Bačlija Sušić, 2019; Bačlija Sušić & Brebrić, 2024; Cheng, 2015; Pramling & Wallerstedt, 2009; Webster, 2016).

In this context, music activities were not only integrated with other educational areas, but also naturally extended into children's play-based exploration, further enhancing their multimodal engagement. As children voluntarily engaged in activities and learned through play in play-based environments (Pyle & DeLuca, 2017), they explored independently, experimented through trial and error, and engaged in developmentally appropriate experiences. Symbolic and pretend play, which helps children make sense of their world (Bruner, 2000; Piaget, 1963; Vygotsky, 1977), provided a rich foundation for music integration as they mimicked the movements of the animals being studied, enhancing both their motor and creative development. In addition, storytelling, guided imagery, and dramatization not only enriched these experiences, but also fostered children's ability to express narratives and understand emotions (Sawyer, 2013), reinforcing music's role as a bridge between cognitive, social, and emotional learning.

This is consistent with the project-based approach, where learning is authentic, relevant, and encourages collaboration and multiple modes of expression (Lev et al., 2020). Music serves as a key medium in PBL, helping children demonstrate their learning in multiple modalities. For example, integrated activities such as singing a spider song and navigating a large spider web connected musical learning to social-emotional development and promoted musical social-emotional learning (MSEL) (Edgar, 2020; Hallam, 2015; Jacobi, 2012). These activities promoted cognitive and social-emotional growth by allowing children to explore and express different concepts. Research confirms that musical activities contribute to children's cognitive development (Zaatar et al., 2024), social-emotional competencies (MacRitchie & Garrido, 2019), empathy, teamwork (Mendo-Lazaro et al., 2018), and better group cohesion, thus improving their overall well-being (Bačlija Sušić & Buerger-Petrović, 2023).

Furthermore, a well-organized spatial and material environment by ECE educators, rich in diverse resources, encourages children to explore and experiment independently, engaging with media such as movement, sound, drawing and language, which supports their cognitive, social and emotional development (Vujičić & Petrić, 2021). This aligns with the principles of PBL and the National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014), where a rich environment supports self-directed exploration and creativity. As children engage with different activity centers and materials, they transfer knowledge across domains, fostering an integrated learning process (Incognito et al., 2021). Thus, this interdisciplinary engagement promotes the development of social, emotional, cognitive, and creative skills, contributing to the child's overall well-being and development.

Conclusion

The findings of this study highlight the important role of music integration within PBL and the National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014) in promoting holistic child development. The integrated music activities across the three project themes demonstrated how music can be creatively linked to other areas of learning, enabling children to express themselves holistically through different media and supporting their cognitive, social, emotional and creative development (Barrett et al., 2022). It further confirms that an integrated curriculum is effective in the early years (Masitoh & Mariono, 2022).

A thoughtfully structured environment rich in diverse resources supports this integration and encourages independent exploration and creativity, which in turn promotes the development of key competencies in children (Akib et al., 2020; Vujičić & Petrić, 2021). The increased presence of musical activities in daily routines, along with children's self-initiated play and creative implementation of guided activities, provides strong evidence of the quality and value of these practices (Lizačić & Bačlija Sušić, 2020). Moreover, the implemented activities have contributed not only to the development of children's competencies, but also to the professional growth of educators.

Furthermore, the preparedness of educators for effective music-based interventions is particularly supported by initial teacher education and ongoing professional development (Barrett, 2014; Bautista et al., 2022; Ehrlin & Tivenius, 2018; Kretchmer, 2002; Lee, 2009; Lenzo, 2014; Nardo et al., 2006; Rajan, 2017). This ensures that educators are equipped with the skills and confidence to effectively implement music to support children's holistic development. By enhancing children's learning experiences, this approach aligns with the holistic aims of the National Curriculum for Early and Preschool Education (Ministry of Science, Education and Sports, 2014) and provides a foundation for integrated educational practice.

As the field of music education adapts to global changes, this study suggests that integrating music into ECE practices leads to transformations in both children's musical lives and the broader educational context (Regelski & Gates, 2009). This approach provides opportunities to create new theoretical frameworks that can further improve and refine educational practices, ensuring that music education continues to evolve and contribute to the holistic development of the child (Candy & Edmonds, 2018; Green, 2017).

Limitations of Research

The study may have potential methodological limitations, such as the utilization of a small sample size for research purposes and the time constraints of 6 weeks for activity implementation. Additionally, due to the study's scope, only select activities are presented and described within the context of an integrated curriculum and PBL, reflecting the various ways music can be connected to different fields.

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