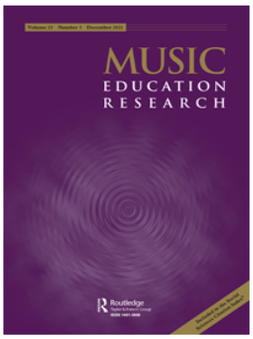

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The significance of music in early childhood education and care of toddlers in Finland: an extensive observational study

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ABSTRACT

The present study investigated the role of music education in early childhood education and care (ECEC) in relation to the daily activities of children ages one to three, i.e. *toddlers* ($N = 918$) in Finnish ECEC units ($N = 327$). A total of 23,142 random observations were conducted. The observations focused on children's involvement, emotional expressions, social orientations and interaction with their immediate caregiver. An independently conducted survey was used to evaluate music emphasis in groups to which the observers did not have access. The data consist of the analysis of teachers' self-evaluations concerning the role music plays in daily activities and developmental orientations of toddlers in ECEC. The connections between the large-scale observations and independently measured music emphasis are discussed in the Results section. The results of the study highlight the importance of music in ECEC pedagogy for toddlers. 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.

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Music education; early childhood music education; involvement; socio-emotional learning; learning environment

Introduction

The purpose of the present study is to examine the role of music education in Finnish early childhood education and care (ECEC) among children ages one to three (hereafter *toddlers*). Additionally, we investigate how music education links to children's everyday activities and developmental orientations in ECEC.

In the Finnish educational system, the ages of early childhood education are from infant to seven years. Although the school starting age is flexible, most children begin formal education at the age of seven, after having attended pre-primary education at the age of six. The Ministry of Education and Culture and the Finnish National Agency for Education (FNAE) regulate both early childhood and pre-primary education under the Act on Early Childhood Education and Care, the National Core Curriculum for Early Childhood Education and Care (FNAE 2018) and the National Core Curriculum for Pre-primary Education (FNAE 2014). The purpose of the national ECEC is to ensure

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equal opportunities to holistic growth, development and learning for every child. On the basis of the national curricula, public (84%) and private ECEC units devise the local ECEC curricula. In addition to the national and local curricula, ECEC units also devise an individual plan for every child.

Finnish early childhood education aims to offer children versatile learning experiences in different areas of learning, such as (1) *Rich world of languages*, (2) *Diverse forms of expression*, (3) *Me and our community*, (4) *Exploring and integrating with my environment*, and (5) *I grow, move and develop* (FNAE 2018, 40–46). Early childhood music education is a part of the diverse forms of expression in ECEC curriculum where children's interests, areas of learning and transversal skills are combined to support children's learning. The concept of transversal competence encompasses knowledge, skills, values, attitudes and will. Transversal competences in the Finnish ECEC include *thinking and learning*, *cultural competence*, *interaction and self-expression*, *taking care of oneself and managing daily life*, *multiliteracy and competence in information and communication technology*, and *participation and involvement* (FNAE 2018, 22–25). These all are important skills for the future in an increasingly diverse world, where children's varying linguistic and cultural backgrounds and capabilities need equally to be taken into account. This article introduces the role of early childhood music education in the Finnish early childhood education system and evaluates its connection to the development of toddlers.

Music in the Finnish national core curriculum for early childhood education

The *diverse forms of expression* learning area aims 'to support development of children's musical, visual as well as verbal and physical expression in a goal-oriented manner as well as to familiarize them with their cultural heritage and different forms of art' (FNAE 2018, 42). ECEC offers children opportunities to diversely engage in the arts, music and other areas of culture. Different forms of expression activate children's creative thinking, emotional expressions and play (Reunamo et al. 2013, 2014, 2016; Nikkola, Reunamo, and Ruokonen 2020). Cultural experiences are also important for development of children's identity. According to Fredrikson's (1994, 2005) ethnographical studies in Finnish ECEC units, children's musical enculturation starts in a very early age.

The aims of Finnish ECEC (FNAE 2018) music education is to provide children with musical experiences and strengthen their interest in and relationship with music. Most children are naturally interested in exploring sounds and sound sources (Acker 2020; Adamson et al. 2019; Custodero 2005; Pitt 2020; Powell and Somerville 2020; Voyajolu and Ockelford 2016; Trevarthen et al. 2018). They are guided to observe the sound environment to develop their capabilities for understanding basic musical concepts such as volume, duration, tone colour, pitch and form through playful pedagogic experiences. Children sing songs, enjoy nursery rhymes and experiment with body percussion and musical instruments, as well as listen and dance to music. According to the national curriculum (FNAE 2018) children should 'gather experiences of basic beat, rhythm in words and making music with their bodies'. Children are also encouraged to express their emotions and activate their imagination through music and spontaneous songs. Music is also integrated in all creative activities, e.g. visual arts, bodily or verbal expression, dance and drama. Moreover, music is a form of communal wellbeing (Marsh 2017; Nome 2020); children are gathered together to sing and create small-scale musical performances, which generates joy and strengthens their musical self-confidence (Welch et al. 2014; Koops 2017; Koops and Tate 2020).

Music education in early childhood learning and development

Music engages children in an inspiring way. Artistic expression is like a personal platform, which every child uses to make diverse perceptions, feel, and engage in creative thinking either visibly or audibly. Toddlers explore the world and learning environments in multisensory ways. The cultural learning environment offers children a wide range of tools and materials, inspiration and aesthetic

orientation to explore and learn (Juntunen 2020; Powell and Somerville 2020; Peñalba, Martínez-Álvarez, and Schiavio 2020; Suthers 2001).

According to Lindeberg-Piiroinen and Ruokonen (2017), music education with small children includes both spontaneous and pre-planned activities. The main aim of musical expression in early childhood education is to create musical moments and experiences for children and strengthen their interest in creating a unique relationship with music. Through playful music education sessions, children's ability to perceive music as well as the duration, level and tone of sound and dynamics develop step by step. The basic elements in learning music are listening, singing, rhyming, moving and body percussion and playing other musical instruments. Children are encouraged to use their imagination and to express their thoughts and feelings evoked by music, e.g. nonverbally through dancing, drawing or verbally by singing or telling a story. Children also like to practice small-scale musical performances for their guardians and other children. The joy of making music together is also highly important to them (Lindeberg-Piiroinen and Ruokonen 2017).

Research concerning music education in early years indicates that music is salient for child development. Early musical interactions and children's body movements in free play situations stimulate the process of interaction between melodic schemes. The communicative interaction through singing with children before they start to speak or sing themselves are also highlighted in these studies (Fredrikson 2005; Louhivuori 2005; Young 2005a; Marjanen 2009). According to Marjanen (2009), music education has a strong connection to interaction and emotions of mothers and babies shared in musical communication during their musical play interaction.

Young (2005a, 2005b) observed that the most effective interaction with toddlers needed encouragement to improvise and use nonverbal, multimodal and many dimensional abstractions of shape and rhythm. Babies and toddlers engage in many types of playful behaviour and create sounds which can be described as 'musical'. Musical communication can be observed in spontaneous vocalizations, rhythmic movements, creative play with sound-making objects and moving and vocalising in response to live or recorded music. She found that a multisensory and holistic approach was most effective with toddlers. Also Pitt (2020) found that playful interaction with sounds improved toddlers' communication competences even if they had communication difficulties.

Dumont et al. (2017) conducted a meta-analysis of four studies concerning the influence of music education interventions in early childhood and pre-primary school on children's social skills. Three of the studies suggested that music education has a positive influence on social skills (Ritblatt et al. 2013; Kirschner and Tomasello 2010; Schellenberg et al. 2015).

There are some studies pertaining to pre-primary and primary school children that indicate positive connections between music education and emotional development. According to Schellenberg and Mankarious (2012), 7- and 8-year-old children who received music education demonstrated significantly higher test scores for emotion comprehension (TEC) than those who did not receive music education. Furthermore, some connections between music education and empathy development have been observed (Kalliopuska and Ruokonen 1993; Rabinowitch, Cross, and Burnard 2013), and some studies indicate that music motivates children to move (Meyns et al. 2019). Derri et al. (2001) found that a music and movement programme significantly improved the quality of certain, more complex locomotor skills of four- to six-year-old children. However, further research is necessary before drawing conclusions about the influence of music education on children's emotional development, especially concerning toddlers.

Despite the well-acknowledged importance of music for human development, as well as its role in ECEC curricula, research evidence concerning early childhood music education in Finland, and especially toddler pedagogy, is scarce. Ruokonen (2009) studied early childhood student teachers' observational evaluations (N=82) of music education learning environments in Finnish day-care centres during their student teaching period. The results showed that there are great differences in the quality of music education in different day-care centres despite the national ECEC core curriculum and equal policy definition in early childhood education. Personal interest and expertise

were the most important factors in creating high-quality music education in the day-care centre. Tuominiemi's (2020) qualitative study of ten Finnish ECEC teachers' perceptions concerning music education for teachers of toddlers found that the lack of musical skills challenged their adequacy in music education, although music was seen as a natural form of everyday interaction with small children.

Since the research pertaining to music education for toddlers in the Finnish context is scarce, the research concerning early childhood music and pre-primary education and the related benefits in the wider research community are discussed here. Recent brain research has found evidence that a child can learn musical elements at a very early age and remember melodies even before birth (Partanen et al. 2013; Virtala et al. 2013). Music education has a strong positive effect on a child's brain function and transversal learning. In particular, music promotes auditory and spatial perception skills as well as attentional skills (Huotilainen and Putkinen 2008; Hyde et al. 2009; Meyer et al. 2011; Putkinen, Saarikivi, and Tervaniemi 2013; Putkinen, Tervaniemi, and Huotilainen 2013; Putkinen et al. 2014; Virtala 2015). Empirical research shows that music education also helps children develop their language and cognitive skills (Schön, Magne, and Besson 2004; Kraus and White-Schwoch 2020; Dumont et al. 2017; Linnavalli et al. 2018; Linnavalli 2019; Huotilainen and Tervaniemi 2018), which is of utmost importance especially in the case of underprivileged children (Kraus et al. 2014a; Kraus et al. 2014b; Habibi et al. 2018). Music also develops creativity, emotional skills and social behaviour (Gerry, Unrau, and Trainor 2012; Muhonen 2014).

According to Leavers (1994), children are the most creative and exhibit diverse forms of expression when they are at the highest level of involvement, e.g. music is present in an activity and the activity takes place in the zone of proximal development (Vygotsky 1978). Leavers (1994) attests to five levels of child involvement for which he developed the *Leuven Involvement Scale for Young Children (LIS-YC)*. At the first level, the child exhibits a low level of involvement, i.e. the child's activity can be simple, stereotypic, repetitive and passive. The child is absent and displays no energy. At the second level, the child is engaged in an activity, but half of the observed period includes moments of non-activity, in which the child is not concentrating and is staring into space. The child's involvement is not enough to return to the activity. At the third level, the child can be easily distracted but mainly engages in continuous activity. At the fourth level, the child engages in continuous activity with intense moments and the child resumes activity after interruptions. Stimuli from the surrounding environment, however enticing, cannot distract the child from his/her intensive moments of activity. At the fifth level, the child shows sustained, continuous and intense activity revealing the greatest involvement. According to Leavers (1994), not all the signals of involvement need to exist during the observed period, but the intensity of concentration, creativity, energy and persistence at the highest level of involvement must be present for nearly the entire observation period. In addition to Laevers' scale, the present study also utilises children's social orientations to find out their level of autonomy and control in everyday situations in ECEC (Reunamo 2007).

Design of the study

This study utilises data, which are part of a larger study called *Progressive Feedback* (see blogs.helsinki.fi/orientate). Our data consist of the analysis of teachers' self-evaluations concerning the role music plays in daily activities and developmental orientations of toddlers in ECEC. The general ECEC situations of the children's daily activities were observed (including transitions between situations). The observations included children's involvement, emotions and social roles. In the analysis, the evaluation of the importance of music in the group activities was incorporated in each observation ($N = 23{,}142$ observations).

The research questions are:

(1) How does music emphasis differ in children of different ages?

(2) How is music emphasis connected to children's involvement in their daily ECEC activities?
(3) How is music emphasis connected to children's emotional expressions during ECEC activities?
(4) How is music emphasis connected to children's social orientations during ECEC activities?
(5) How is music emphasis connected to the children's interaction with their immediate caregiver?
(6) How is music emphasis connected to the pedagogical learning environment?

Participants

In this study, we concentrate on 1–3-year-old children (toddlers), except in Table 1 when comparing different age groups. Altogether, 918 children in 327 ECEC units participated in the study. The children's age varied between 10 months and 47 months ($M = 33.1$ months, SD = 9.1 months). A total of 48% of the children were girls and 52% boys, 3.1% of the children had special needs and 16.9% of the children had a migrant background. The participating ECEC units were public day-care centres in 13 municipalities in southern Finland. The centres were chosen based on random sampling in the municipalities.

Observation

The observers (≈160) were teachers who volunteered to do the observations as part of their work. They did not observe their own groups; instead, the observations took place in another ECEC unit where the observer did not know the children or teachers. The teachers were given training in observation, which lasted two days, and were able to practise observation in their own groups for approximately two months between the two days of training. The observation days were random and spread over an entire year, excluding the summer months, between September 2017 and May 2019. The observers conducted a random sampling among the groups and picked one group for observation. In each group, the observers then conducted a random sampling of the observed children and picked five children for the observation list. The observations were done using systematic sampling, i.e. each child was observed for one minute and three minutes were used to upload the codes and prepare for the next child in the list. The observation lasted four hours, either 8:00 am–12:00 pm or 12:00–4:00 pm, and included all activities, e.g. eating, teaching, playing and care (naps were omitted from the analysis). The observer did not interfere with the activities, and the children were not to be aware of being observed. The observations constituted group activities, individual activities, children's objects of attention, peer contact, physical activity, involvement (learning potential), emotions, social roles and adult activity. In this article, we concentrate on the indicators of children's wellbeing, involvement (learning), emotions, social relations and interaction with adults.

The involvement scale (1–5) was based on the *Leuven Involvement Scale for Young Children (LIS-YC)* (Leavers 1994; see Introduction), where the degree of children's creative, energetic and sustained activity was measured on the 1–5 Likert scale. Involvement describes the depth of the zone of proximal development (Vygotsky 1978). The reliability of the paired observation (one-way random intragroup correlation) for involvement was .756 (CI .719, .789, $p < .005$). The

Table 1. The importance of music in everyday education by learning environment and age; evaluation given by the caregivers/adults.

	1 year	2 years	3 years	4 years	5 years	6 years	Total
Describes mostly fairly well	47.6%a	43.1%b	57.7%c	73.8%d	80.8%e	84.2%f	69.4%
Describes well	52.4%a	56.9%b	42.3%c	26.2%d	19.2%e	15.8%f	30.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Notes: Each subscript letter denotes a subset of the variable Age in Years, the proportions of which do not differ significantly from each other at the .05 level.

categories of emotion were based on Ekman and Davidson's (1994) categories of observable emotions with minor adaptations (anger, frustration and irritation, fear and anxiety, sadness and depression, joyfulness and cheerfulness, surprise and alertness, neutral state of mind, other emotion). The reliability of the paired observation (kappa) for emotions was 44.1% (CI 39.1%, 49.1%, $p < .0005$).

Social role categories were based on Reunamo's (2007) categories of social orientation (accommodative, participative, dominant, non-social and not defined). The kappa for social orientation was 40.5% (CI 38.1%, 45.3%, $p < .0005$). The immediate caregiver activity categories were based on Reunamo's (2007) categories of pedagogical styles (receptive, participative, goal-oriented, neutral, negative, no adult attention). The kappa for the immediate caregiver activity was 45.8%, (CI .410, .502), $p < .0005$.

Learning environment evaluations

The importance of music in the groups was measured with Reunamo's evaluation model (Fonsen et al. 2020; Rintakorpi and Reunamo 2017). The emphasis of music was evaluated with the statement, 'Music and song are important in our everyday education' on a scale of one (does not describe) to five (describes very well). The reliability of two teachers evaluating music importance separately was .607, (CI .047, .837, $p = .02$).

Ethics

The Ethical Review Board in the Humanities and Social and Behavioural Sciences at the University of Helsinki evaluated the research instruments and conduct in the study. The participating municipalities gave their consent for the research, and the children's guardians gave consent for their children to participate in the research. The names of the groups, children or ECEC units were not collected. Children's physical integrity was not violated, and the research procedures did not affect the groups' activities in any way.

Results

The adults of the observed groups evaluated their learning environment from one to five on the Likert scale. The evaluated item concerning music was 'Music and singing are an important part of everyday education'. In Table 1, the evaluations are given separately for each age group.

As we can see in Table 1, music is of highest importance when children are between one and three years old. During this period, 40–57% of the responses highly agreed with the item 'Music and singing are an important part of everyday education'. With one- to two-year-olds, in particular, music was evaluated as important in everyday education for more than half of the children. There is a clear threshold between three-year-old and four-year-old children. With children aged four years or older, agreement with the item dropped below 30% and below 20% for five- and six-year-olds. One reason for this is that music was integrated more into the everyday pedagogical work with the toddlersthan with the four- to six-year-olds.

In the following section, we concentrate on the evaluated importance of music education with toddlers in relation to the observed learning, emotions, social relations and adult activities. How is the evaluated importance of music related to independently measured observations?

Children's observed everyday experiences and evaluated music importance

Table 2 presents the results concerning children's observed involvement (learning), emotions and social relations. Also, the activity of the immediate caregiver is analysed and cross-tabulated with the evaluated importance of music. In the groups where music was considered important, there

Table 2. Children's observed involvement (learning), emotions, social relations and the activity of the immediate caregiver cross-tabulated with the evaluated importance of music.

	Music fairly important at most	Music important	Total
Children's observed involvement (learning)			
Simple	7.2%a	8.5%b	7.8%
Frequently interrupted	16.9%a	15.8%b	16.4%
Mostly continuous	32.3%a	30.7%b	31.5%
Mainly continuous	34.7%a	34.2%a	34.4%
Sustained, intense activity	8.9%a	10.9%b	9.9%
Total	100.0%	100.0%	100.0%
Children's observed emotions			
Neutral	45.1%a	43.9%a	44.5%
Surprise, alertness	20.4%a	20.0%a	20.2%
Happiness, satisfaction	18.5%a	20.0%b	19.2%
Joyfulness, cheerfulness	9.9%a	10.5%a	10.2%
Frustration, irritation	3.3%a	3.0%a	3.1%
Other emotion	1.4%a	1.4%a	1.4%
Sadness, depression	1.1%a	0.8%b	1.0%
Fear,anxiety	0.3%a	0.3%a	0.3%
Anger	0.1%a	0.0%b	0.0%
Total	100.0%	100.0%	100.0%
Children's observed social relations			
Adapting	35.6%a	39.0%b	37.2%
Participating	38.5%a	36.5%b	37.5%
Dominating	5.2%a	5.0%a	5.1%
Withdrawing, non-social	16.8%a	16.3%a	16.6%
Other role	3.9%a	3.1%b	3.5%
Total	100.0%	100.0%	100.0%
The activity of the observed child's immediate caregiver			
Receives and accepts	12.5%a	14.5%b	13.5%
Participates	17.5%a	19.5%b	18.5%
Goal-oriented	16.4%a	16.6%a	16.5%
Neutral	28.4%a	25.8%b	27.2%
Negative	0.3%a	0.1%b	0.2%
No adult attention	24.9%a	23.3%b	24.1%
Total	100.0%	100.0%	100.0%

Notes: Each subscript letter denotes a subset of variable Music Importance, the proportions of which do not differ significantly from each other at the .05 level. Above, our focus was on the connections between music emphasis evaluation and independently conducted observation. Next, we will look at how music is connected the pedagogical learning environment characteristics at large. The most positive correlations between music emphasis and other evaluated learning environment characteristics were evaluated with the same instrument.

were statistically significantly more sustained, intense activities that facilitated learning and less simple activity, and frequently interrupted, less continuous activity (cf. Leavers 1994).

The key findings indicate that the children in the groups where music was important were statistically significantly more often observed to be happy and content in comparison to groups where music was considered less important. At the same time, the children were observed to be statistically significantly less often sad/depressed or angry.

The greatest statistically significant difference was in the children's increased adaptive role in the groups with music emphasis. In the observation, adaptation was defined as open and considerate, but not as influencing social situations. In these groups, the children were observed to be statistically significantly less often in a participative role, which indicates that the children are less often in an open relationship, influencing the situations. At the same time, these children were observed to be statistically significantly less often in other roles during observation. 'Other role' indicates that there is not a clear social situation to be observed. Often in the other role there is a chaotic or undefined situation in which there is no clear role to be observed. Overall, the children's role was more stable and adaptive in the groups with music emphasis.

There were also statistically significantly more observations of the adults receiving/accepting and participating in children's activities in the groups with more music emphasis. Both these activities,

receiving and accepting, indicate an open relationship with the children. On the other hand, there was statistically significantly less neutral and negative adult activity. In the groups with more music emphasis, the children received statistically significantly more adult attention.

Evaluated importance of music in relation to other evaluated characteristics of the pedagogical learning environment

The results concerning the characteristics of the pedagogical learning environment that correlated most positively with the importance of music, as well as the characteristics of the pedagogical learning environment that correlated most negatively with the importance of music are presented in Table 3. The results show that the emphasis on music correlated positively with the good quality of pedagogical learning environment as indicated by thorough planning, considering the environment network and the motor skills of the children. The positive correlations were not merely related to teaching but show a greater quality connection with guardian involvement and the atmosphere during lunch and activities both indoors and outdoors.

We can also see that in the groups where music emphasis was strong, the need for pedagogical leadership in the unit and group was lower, indicating a strong pedagogical culture. In the groups, where the pedagogical work was evaluated to be more about surviving than long-term developing, the joy and wellbeing tended to be missing. Children document their work less and follow rules on their own less. The teamwork should be strengthened and there is less often a planning meeting.

Discussion

Music and singing were considered a more important part of everyday education for toddlers and remarkably less so for the four- to six-year old children. When the evaluated music importance was merged with the independently observed child activity, several statistically significant connections were found. In the groups with music emphasis, there were more both sustained intense activity and less simple and interrupted involvement. This result is in line with previous results where a large

Table 3. Characteristics of the pedagogical learning environment that correlated most positively with the importance of music + Characteristics of the pedagogical learning environment that correlated most negatively with the importance of music.

	Partial* correlation with music importance	Sig. (2-sided)	*N*
Deep and versatile planning describes well the team's work.	0.3	<.0005	23,062
Multidisciplinary and multi-professional cooperation supports children's needs well.	0.26	<.0005	23,142
Children's basic motor skills and mobility are central in our activities.	0.244	<.0005	23,142
There are also plenty of opportunities indoors for physically active play.	0.243	<.0005	23,062
Educators actively develop outdoor activities with children.	0.228	<.0005	23,142
We are constantly working on ways to help parents become more involved in developing activities.	0.219	<.0005	23,024
The child's individual plan is the most important guideline for the whole team.	0.217	<.0005	23,062
The children are clearly satisfied and learn during eating situations.	0.21	<.0005	23,017
Pedagogical leadership should be strengthened in our unit.	−0.153	<.0005	23,142
Pedagogical leadership should be strengthened in our group.	−0.128	<.0005	23,142
The work is more about surviving from day to day than long-term development.	−0.074	<.0005	23,142
Children document their activities extensively.	−0.073	<.0005	23,062
For some reason, joy and wellbeing has somehow been missing in the group.	−0.053	<.0005	23,062
Children follow the rules without adult supervision.	−0.046	<.0005	23,062
Development of the staff's own work should be strengthened in our unit.	−0.04	<.0005	23,142
The group's team has a planning meeting every week.	−0.032	<.0005	23,142

*The correlations are partial correlations controlling children's age.

amount of intermediate involvement may be related to inability to self-regulate involvement as needed according to the task and context (Reunamo and Alijoki 2014; Reunamo and Kyhälä 2016). Music emphasis was related to more varied and versatile engagement in the activities, including both routine relaxed activities and deeply processed energetic activities. Regarding pedagogy, the result is a positive indicator of music being related to enriched, creative and colourful learning experiences.

In the groups with more music emphasis, the children were observed to be happy and content more often and sad or depressed less often. The result shows that music was associated with positive feelings promoting children's learning and wellbeing. Children's social roles were more adaptive (open and accommodative) and less participative (open and influencing) in groups with more music. With the lesser amount of undefined social roles, the roles seem to be more accommodative and clearer. The increased happiness with accommodative roles underlines harmonious interaction.

Considering pedagogy, the results are positive. However, a question of whether there should be more child participation in the groups with music emphasis arises. Should there be more participative elements facilitating children's initiative and ideas in the activities? With regard to the other side – the adult in the interaction process – adults were observed to be in more open relationships (receptive or participative) and less in negative relationships with the children than in the other groups. The children had more attention from the adults in comparison to the other groups. It seems that the accommodation was not based on dominance on behalf of the adults; rather, it was based more on open consideration.

Interestingly, in the light of the most recent empirical research literature (Fawcett and Kreutz 2021; Young and Ilari 2018) it is obvious that the participation of the adults while one-year old children are listening to music has an impact on the children's emotional listening behaviour. In this perspective, the interaction between the adults and children in music-related actions also during a usual ECEC setting might be highly valuable and a topic for a further study.

Limitations of the study

The present study is based on large-scale random observations facilitating generalisation to the Finnish population. However, the results may not be the same in different countries and cultures. More research is needed to clarify the connection between children's experiences in early childhood education and music in different cultures with different pedagogical models and practices.

The results are only correlations between music emphasis and early childhood education quality. Concluding that music is the cause of good quality early childhood education and children's positive experiences is not possible. Nor is it possible to separate the various ingredients of music and singing, for instance in terms of music making, music listening, and dancing/moving along with music, because music emphasis was measured with only one statement.

Singing is also one of the most important activities in music education for toddlers due to the connections to development of language skills. However, the correlations between music emphasis and other evaluated learning environment characteristics pinpoint music as a factor in quality education and toddlers' positive experiences. The observers had no access to the learning environment evaluations and the evaluators had no access to the observations, which means that the statistically significant connections are a clear sign of criterion validity. There were no differences between the groups according to the quality of ECEC (National core curriculum was implemented in every ECEC unit) or the education of the teachers, but there are always individual differences concerning the strength and capacity amongst the team to facilitate musical and/or other activities, which cannot be reached in this kind of survey study. Anyway, the sample of this study was sufficient to assume that every day musical activities played a significant role in children's learning and wellbeing. In conclusion, music and singing are integral to quality early childhood education and children's positive learning, emotional, social and adult interaction experiences. The processes of music in the learning environment need further research to help us enrich the wellbeing of the youngest

children at an age when quality is most important. In addition, the reasons why children could be more stable in those groups where music is felt to be more important might be discussed and further studied.

Early childhood teachers, other staff, and guardians need further education and support in implementing early childhood music education in everyday practices. In the current ECEC climate, improvised interaction with musical play and improvised sounds and songs between adults and children are needed. We share the recommendation of Barrett et al. (2019, 2020) whereby in-situ music mentoring could improve teachers' musical skills and positive self-esteem. In their study, which aimed to identify the music beliefs and values of generalist teachers in early childhood education, Barrett, Zhukov, and Welch (2019) found that generalist teachers in early childhood education had positive attitudes toward music overall. This renders enormous potential for further professional learning in music education within this population.

The encouraging results in the present study indicate the benefits of music education for holistic development of the child. Learning and development of each individual child needs constant observation, documentation and evaluation to develop suitable pedagogical solutions and learning environments for the best of every child. Music and play may be one of the best sources of early interaction, learning and wellbeing.

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No potential conflict of interest was reported by the author(s).

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