

Everyone can Improvise: Pedagogical Approaches to Music Improvisation in Early Childhood Education



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Abstract

Group music improvisation with young children is a creative process in which music emerges spontaneously during performance, with participants collaborating in real time (MacGlone, 2019). Despite its potential to enhance musical skills, creativity and collaboration (Sawyer, 2007), its application in early childhood education (ECE) is under-researched, particularly in terms of its pedagogical implications.

The research explores children's creative musical expression and communication during collaborative improvisation in ECE, emphasising the multisensory and multimodal aspects and using Activity Theory (AT) (Engeström, 1987) as a framework for reflection. As part of the Everyone Can Improvise (ECI) project, two music experts and a kindergarten educational rehabilitation specialist carried out various improvisation activities with 25 children over a period of three months.

In addition to the ECEC ethnographic methods used to explore the children's cultures, experiences, feelings, voices and activities (Köngäs & Määttä, 2023), arts-based methods for research with children provided valuable insights into the children's lived experiences (Cahnmann-Taylor & Siegesmund, 2017; Clark, 2017; Thomson & Hall, 2019). In addition to qualitatively analysing the data collected via the checklist, the information was further explored through a systematic coding process using thematic deductive analysis (Braun & Clarke, 2006).

Storytelling was identified as a primary tool and mode of expression in a multimodal approach to improvisation that integrates different forms of communication and facilitates the process. It provides a structure for exploration while fostering creativity, leadership, collaboration and social skills. As a common reference point, storytelling encourages creative musical play and strengthens connection and communication between children and adults.

Key words:

Activity Theory; children's collaborative musical improvisation; early childhood education and care; multisensory and multimodal musical expression; thematic deductive analysis

Introduction

Improvisation is a fundamental aspect of life that reflects our ability to deal with everyday uncertainties and challenges through intuitive, spontaneous action. Emphasising its unpredictable and adaptive nature highlights the essential role of improvisation in human existence and underlines its importance in the way we cope with and respond to life's complexities (Steinsholt & Sommerro, 2006).

In an educational context, improvisation emphasises active engagement, spontaneity and interactive learning (Hickey, 2015; Linson, 2014). From a music education perspective, improvisation has educational value as it promotes the development of musical skills, personal growth, reflective and critical thinking, creativity and the ability to collaborate. Sawyer (2007) describes the role of improvisation in music education and argues that it should be considered a central part of the discipline due to both its musical and broader pedagogical importance. He emphasises four key learning outcomes: a deep understanding of musical concepts, the ability to integrate knowledge through spontaneous music making, the ability to adapt to immediate change, and the development of collaborative skills. This is consistent with a perspective that emphasises how the structure of improvised music evolves in real time through socially negotiated interaction based on negotiation rather than following a prescribed form (Lewis, 2014).

Engaging with the concept of improvisation can be challenging as it can be understood in different ways and is open to different interpretations (Wilson & MacDonald, 2017). For adults, it is necessary to find a common point of reference to not only encourage children's creative musical play, but to actively share and converse with them about it. However, the inherent ambiguity of music (Cross, 2005) and improvisation (MacDonald et al., 2012) presents a challenge in creating this common ground. In order to find common ground with children, common interests such as a theme, activity or favourite things such as a story, character, song or game need to be identified to facilitate connection and communication. In this sense, Johansen et al (2019) emphasise the importance of teachers in defining musical activities in early childhood education and shaping the modes of expression available to children. However, this process can be challenging due to the often-overlooked power dynamics between children and adults that can influence children's improvisational behaviour (Wassrin, 2019). Such connections also help children to express feelings more easily, build confidence and create opportunities to introduce new activities.

In addition to the growing research interest in the characteristics of group improvisation with children, creativity and collaboration have been identified as key characteristics, even at a young age (Sawyer, 2003, 2007; Wassrin, 2019). Johansen et al. (2019) emphasise the distinctiveness of improvisation pedagogy in ECE contexts, highlighting the central role of kindergarten teachers or caregivers in defining what constitutes a musical activity and thus in shaping the modes of expression available to children. This challenge arises in part from a tendency to overlook the power dynamics between children and adults in society, which has led researchers in the field of music education to underestimate how such dynamics might shape the reported actions in

children's improvisations (Wassrin, 2019).

In studies with 9- and 10-year-old children, Larsson and Öhman (2018) and Larsson (2019) found that teachers provided a 'framework' for music making, for example by asking children to invent a story and express it through improvisation, while encouraging mutual support and avoiding judgement.

The categorisation of emergent musical features in improvisation varies depending on the pedagogical approach or educational goal. Two general approaches are model-based (Kratus, 1991; Beegle, 2010; Whitcomb, 2010), where teachers follow certain rules and conventions of a genre or method, and process-based, where teachers design activities based on participants' contributions (Burnard, 2002; Kanellopoulos, 2007; Larsson & Öhman, 2018; Larsson, 2019). In addition, a distinction is made between 'structured', teacher-led improvisation and 'free', child-led improvisation (Larsson and Georgii-Hemming, 2018).

MacGlone (2019) describes how conceptual tools and workshop roles are developed through music improvisation with young children. He defines group music improvisation as a process in which some or all of the content emerges spontaneously during the performance, with participants actively collaborating and shaping the music in real time. In an action research study of improvisation with preschool children aimed at developing their musical creativity and sensitivity, activities included descriptive prompts (“What does a hedgehog sound like?”, “Are the drums good for rainbow sounds?”), open-ended prompts (“Just play.”) and the use of graphic symbols as a starting point for improvisation. Some situations illustrate a conflict of desire and power within the group and highlight the challenges the children face when they have to reconcile their own needs with those of others due to unresolved power dynamics. The children's ideas were developed into a shared repertoire of improvisations linked to stories such as “Princesses in a Bouncy Castle” and “Star Music”. Musical roles explore how children describe personal and interpersonal actions through their musical choices during improvisation (MacGlone, 2019). To broaden the horizons of musical improvisation pedagogy within structured musical play in the ECE context, two key constructs within ECE are highlighted: Creative Musical Agency (CMA) and Socio-Musical Aptitude (S-MA) (MacGlone, Wilson & MacDonald, 2021). CMA is demonstrated when a child independently develops and performs new musical material during a group improvisation, while S-MA is demonstrated when a child develops a musical response during a group improvisation that relates to and references another child's musical idea. By considering these constructs in the context of early childhood musical improvisation, this study aims to investigate how structured and unstructured musical activities promote children's creative and social musical engagement.

Multimodal Approaches to Music Education

Effective teaching involves all modalities, which is particularly possible in music due to its inherently multimodal nature. Considering the musical experience as a multimodal form of communication, music not only includes text, photographs, animations, colours, movements and other sounds that express ideological discourses in society, but also combines different information such as sheet music, gestures, lyrics and metadata (Way & McKerrell, 2017). By understanding and harnessing students' individual modal strengths, music lessons can provide rich sensory stimulation to enhance the overall learning experience (Scott-Kassner & Kassner, 2006).

Musical concepts are most effectively taught through discovery (Bruner, 1966), with activities such as improvisation, composition or musical tasks that encourage children to think while listening, performing or creating thus providing opportunities for exploration. Approaches such as Orff Schulwerk, Kodály, Dalcroze Eurhythmics, Suzuki and the method of Croatian educator Elly Bašić all emphasise the importance of rich musical experiences that lead children to understanding before formal learning begins (Bačlija Sušić, 2017). This approach is based on the idea that experiential learning through play, movement, listening and creativity develops children's sensitivity to music and fosters their creativity (Bačlija Sušić & Brebrić, 2022). Accordingly, their communicative behaviour in creative music workshops has been characterised as multimodal (Wassrin, 2016, 2019).

Children combine actions (such as movement, storytelling and singing) in a way that emphasises the central role of ECE teachers in defining what counts as musical activity, taking into account the different modes of expression available to children (Johansen et al., 2019). In this context, some authors emphasise that the combination of activities such as movement, storytelling and singing can be at odds with ritualised musical activities in a circle, which often require children to remain seated and can be limiting for children with developmental needs or difficulties (Young, 2006; Wassrin, 2019). Appropriate interventions tailored to children's needs by ECE teachers enhance children's musical experiences and reflect the quality of the process through higher levels of children's engagement and well-being (Bačlija Sušić, Fišer Sedinčić & Cvrtila, 2022).

In order to support musical creativity in early childhood, adults should reflect on their engagement with children's creative musical play, as understanding this play is key to improving improvisation pedagogy. Leaders of musical activities play a crucial role as facilitators who effectively support and encourage children's creative development (MacGlone, Wilson & MacDonald, 2021). In terms of improvisation and creativity in general, adults often have more opportunities to connect with children through various artistic and multimodal forms of expression, such as storytelling. Therefore, in view of the potential of storytelling as a multidisciplinary tool with great pedagogical value that can be used in university classrooms as well as in early childhood and primary education (Arteaga Checa, Zagalaz Sánchez, & Cepero González, 1999), many authors have emphasised the importance of storytelling through music in teaching and in the development of professional skills (Rodríguez Lorenzo, 2016; Menéndez Valdeolmillos, 2020). Storytelling is always linked to a message, just like music, which in a way conveys a message. In the context of music education, storytelling therefore serves both as a teaching strategy and as a motivational tool (Bačlija Sušić, 2017; Horvat Vukelja & Heisenger, 2019).

Building on Vygotsky's model of mediated action, Activity Theory (AT) provides a framework for understanding how tools, rules and social structures shape human interaction (Engeström, 1987, 2001). In early childhood education, AT helps analyse the multimodal and multisensory nature of music improvisation and offers insights into pedagogical and social dynamics (MacGlone, 2019, 2020, 2022). The framework also explores physical and symbolic tools as mediating artefacts in practice. The use of Activity Theory (AT) in early childhood education settings (MacGlone, 2019, 2020, 2022) enhances understanding and interaction, emphasising its multisensory and multimodal nature. As a reflexive tool, AT provides deeper insights into the complexity of the social and organisational practices of music improvisation in ECE.

As for the limited use of musical improvisation as a form of creative musical expression by children in ECE (Bačlija Sušić, 2023), this remains a relatively unexplored area for this age group. The aim of this research is to gain insights into children's creative musical expression and communication during collaborative improvisation in ECE, emphasising the multisensory and multimodal nature of improvisation and using Activity Theory (AT) as a reflexive framework to enhance pedagogy. The following research questions were defined in accordance with the research problem and aim

- 1. What are the most common modes and forms of expression and communication in ECE improvisation from a multimodal perspective?
- 2. Which mediating artefacts can facilitate improvisation in the ECE context by providing guidelines, rules and structure?

Method

Participants

A group of 25 children from a single kindergarten group participated in the study, supervised by two music experts in collaboration with an educational rehabilitation specialist and a kindergarten teacher. The activities were conducted and monitored over a period of 3 months by two music experts in collaboration with a kindergarten educational rehabilitation specialist.

Instrument

In addition to the video-based participant observation, notes were taken alongside the video recordings. A checklist based on the AT framework was developed for the first analysis. A checklist based on the Attribution Theory (AT) framework covering subject, object, rules, division of labour and modes of expression was used to analyse the data. In line with the research aim and research questions, we focused on exploring the role of both physical and symbolic tools as mediating artefacts and the different modes of expression used in improvisation activities with children.

Research Design

ECEC ethnographic methods were used to explore the children's cultures, experiences, feelings, voices and activities in order to promote their development and well-being (Köngäs and Määttä, 20-23). In parallel, arts-based practice - an established research method for working with children (Hickey-Moody 2011, 2013, 2015; Leavy 2015; Thomson 2009) - provided valuable insights into children's lived experiences and their connections to education, community and culture (Cahnmann-Taylor and Siegesmund 2017; Clark 2017; Thomson and Hall 2019). In practice, these approaches also enhance children's multimodal literacies (Wolfe and Flewitt, 2010), enabling them to articulate and shape their identities and relationships to the world. These methods provide greater material agency to experiences and perspectives that are often challenging to articulate or represent (Kidd, 2009; Nunn, 2017), making them particularly valuable in the ECE context.

To enable a deeper qualitative analysis of the data collected using the checklist, the information was further analysed through a systematic coding process using thematic deductive analysis (Braun & Clarke, 2006), which was based on the AT theoretical framework that initially helped to structure the data. This flexible approach, informed by the theoretical or analytical interests of the researcher, allowed for more detailed analysis and a more nuanced understanding of particular aspects of the data (Braun & Clarke, 2006; King, 2004). A checklist based on the Attribution Theory (AT) framework was used to analyse the data, covering subject, object, rules, division of labour and modes of expression. In line with the research aim and questions, the focus was on exploring the role of both physical and symbolic tools as mediating artefacts and the different modes of expression used in improvisation activities with children.

Ethical Considerations

The ethical considerations for this study followed established standards for educational research. Written parental consent was obtained and participants were fully informed about the purpose and procedures of the study. Participation was voluntary and data were anonymised to protect confidentiality and privacy. The study was approved by the Ethical Research Committee of the Faculty of Teacher Education at the University of Zagreb.

Data Analysis: Defining Codes and Categories

Based on a deductive analysis, the checklist and the categories of physical and symbolic tools according to AT, which were aligned with the defined research questions, served as a starting point. After familiarisation with the data, the initial findings of the physical and symbolic tools were organised into codes as modes of expressions from the checklist, leading to the identification of new themes and categories that emerged from the data (Table 1). As coding is an ongoing and organic process, it was necessary to re-code the dataset, especially when some themes did not contain enough data or were too diverse, requiring them to be merged or split into separate themes (Braun & Clarke, 2006). To ensure that the selected themes or categories were unique and broad enough to capture related ideas across multiple text segments, the data were refined and condensed into themes that reflected the content of the important topics (Attride-Stirling, 2001). This iterative process ensures that the themes are coherent and at the same time can be clearly distinguished from each other. This ultimately allows researchers to gain a clear understanding of the themes, their relationships and the overarching narrative they reveal about the data (Braun & Clarke, 2006).

The thematic analysis, guided by the physical and symbolic tools (AT) checklist, was expanded with additional details from notes and recordings and grouped into codes and categories/themes that emerged from the data (Table 1).

Table 1 *Results of Thematic Analysis: Codes and Categories*

Title of improvisation activity	Physical tools	Symbolic tools	Code	Category/Theme
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1. INTRODUCTION AND "MUSICAL STORY"	Body percussion (BP), Movement (M)	Storytelling (ST), Musical game (MG), Counting rhymes (CR), "Musical Suits" from story (MS), Sound improv (SI)	BP, M, ST, MG, CR, MS, SI	Multimodal story-based musical activities
2. "AT THE BOTTOM OF THE SEA"	BP, Orff instruments (OI), Orff instruments improvisation (OII), (M)	ST, Song (S), CR, MS, Song story (SS)	BP, OI, OII, ST, S, CR, M, SS	Story and song as mediators in creative musical expression/improvisation
3. "IN THE ANTHILL"	OI, Sound improvisation (SI)	ST, CR, Role selection (RS) and leadership (RSL),	ST, OII, RS, RSL, SI, CR, SS	Story-driven collaborative role playing and leadership in musical improvisation
4. VOCAL IMPROVISATIONS	Voice improvisation (VI), Voice exploration and improvisation (VII)	Kandinsky painting and children's drawings as visual stimuli (VS)	VI, VII, VS	Vocal improvisation as a multisensory and multimodal mode of expression
5. IMPROVISATIONS ON THE RECORDER	Recorder (Recorder improv - RI), VII, M	Story and association (SA), SS, RSL	RI, SA, RSL, M	Story, association and leadership in recorder improvisation

Following the stages of data analysis described by Braun & Clarke (2006), the original data from the checklist were refined into codes and categories/themes. The following codes were defined based on the data presented in Table 1: Body percussion (BP), Movement (M), Storytelling (ST), Musical game (MG), Counting rhymes (CR), "Musical Suits" from Story (MS), Orff instruments (OI), Song (S), Song story (SS), OI improvisation (OII), Sound improvisation (SI), Role selection (RS) and leadership (RSL), Voice improvisation (VI), Voice exploration and improvisation (VII), Visual stimuli (VS), Recorder improvisation (RI), Story and association (SA).

Based on the aforementioned codes, the following categories/themes were defined, representing broader thematic groups of the data: *Multimodal story-based musical activities*, *Story and song as mediators in creative musical expression/improvisation*, *Story-driven collaborative role-playing and leadership in musical improvisation*, *Vocal improvisation as a multisensory and multimodal form of expression*, and *Story, association and leadership in recorder improvisation*.

Considering that themes should be specific yet broad enough to encompass related ideas from multiple text segments (Attride-Stirling, 2001), while being concise, coherent and clearly distinguishable (Braun & Clarke, 2006), two main themes were identified after reviewing the themes obtained: *Multimodal and multisensory approaches as a basis for musical improvisation and creative expression*, and *Storytelling as a mediating tool for the framework of collaborative musical improvisation*.

The first theme emphasises the use of different modalities such as stories, associations, Orff instruments, sounds, songs, counting rhymes, musical games, body percussion, movement and other modalities in combination with sensory input to foster musical creativity and improvisation.

The second theme, *Storytelling as a mediating tool for the framework of collaborative musical improvisation*, highlights the role of storytelling in creating a framework for group musical activities, fostering leadership skills through role-playing and enhancing collaboration during musical improvisation.

Multimodal Story-Based Musical Activities

This category includes various multimodal activities, including Body percussion (BP), Storytelling (ST), Musical games (MG), Counting rhymes (CR) and the "Musical Suits" (MS) approach, which integrate music, movement and narrative elements to promote children's engagement and learning. The children introduced themselves in a circle with body percussion, playing different rhythms on their bodies while saying the syllables of their names. Some shy children did not want to participate. After everyone had introduced themselves, the activity leader remarked that they were "real experts in body percussion" (BP/1).

Through the two brothers as travelling musicians and main characters, the children learnt about instruments such as the guitar and the recorder, while through the character of a girl who sang, they learnt that the voice is also an instrument that needs to be cared for and nurtured. "We mustn't shout or scream, because then the voice becomes restless and disappears - what we call 'SHOUTO'". Through the association of a "musical suit", the children were fully involved in the storytelling. Through this interactive experience they developed an awareness of different sounds (SI/1 - creating different sounds inspired by stories - tapping, animal voices), the importance of caring for their instruments and voices, creativity, teamwork and an appreciation of music and performance (ST/1). In the musical game, the children represented trees that a blindfolded child had to avoid in order to reach the goal. The children shouted: "I'm here, I'm here" (MG/1, M/1). To choose the child who would play the main role, the children used a counting rhyme (CR/1).

Story and Song as Mediators in Creative Musical Expression/Improvisation

This category includes the following codes: ST as a stimulus; "musical suits" (MS) as a symbolic tool and leitmotif; body percussion (BP), Orff instrument, improvisation (OII), song as a

symbolic mediator that deepens the theme (S) and a new short story ("song story" - SS) that introduced the activity of learning a new song, and counting rhyme (CR) to choose from. Inspired by the story, a sound improvisation was spontaneously added to describe the night in the story, which served as a prompt for improvisation: "At night no one works, everyone sleeps. Only when you hear the deepest silence can you start to play". One child spontaneously began to snore, which the other children quickly picked up on and laughed as they joined in the sound improvisation (SI/2).

The song was seamlessly integrated into the storytelling through a new short story ("Song Story" - SS/1). For example, the children found the song "Under the Stone a Crab Dwells" particularly interesting and it became an integral part of the activity "At the Bottom of the Sea" (S/1). After using the counting rhyme for selection (CR/2) and improvisation with Orff instruments (OII/1), a new short story was added when the children's concentration began to wane (ST/2). According to the ECE teacher's report, the children were still humming this song long after the activity had finished.

Story-Driven Collaborative Role Play and Leadership in Musical Improvisation

In this category and theme, the children take the initiative to lead the play and choose activities. Storytelling encourages this leadership by motivating children to take on roles and improvise. This process encourages group synchronisation and collaboration as children work together to build on each other's ideas and create shared narratives. Through these activities (Table 1), children not only practise their creativity, but also improve their ability to work and communicate effectively in a group.

For example, the children again suggest their own counting rhymes to divide up the roles, which reinforces their sense of involvement and agency. For example, in the activity "At the Bottom of the Sea", where all the children wanted to play the big rain stick, 'like a real sea', a counting rhyme was again used to allocate roles and choose instruments within the story (CR/ 3). Furthermore, in the activity "In the Anthill", when the facilitator said "We have two xylophones today", the children replied: "I want it, I want it...". After the facilitator asked: "How do we decide?", the children suggested a counting rhyme themselves (CR/4).

In the same activity, the guidance of the gong player in the activity emphasises leadership and collaboration, initially led by the music teacher and later taken over by the children through the symbolic role of the gong player (RSL/1). This combination encourages dynamic group interaction, with the gong player leading the group through the process of group improvisation with Orff instruments (OII/2) and stimulating creativity in the integration of sound, movement (M/2) and singing. The gong player played a central role in guiding the flow of the activity, ensuring that the children worked together effectively as they explored and expressed their musical and creative abilities through the story-inspired improvisation process.

Vocal Improvisation as a Multisensory and Multimodal Mode of Expression

The visual stimulus (VS) for the vocal exploration and improvisation (VII) was a painting by Wassily Kandinsky entitled "Yellow, Red, Blue". The painting (P) became a symbolic tool that encouraged the children to describe the individual elements of the painting with all the sounds that their vocal apparatus could produce. The VS was read to the group and then, when most of the

children felt encouraged and relaxed, individual children volunteered to describe certain parts themselves using VI. This was the first type of VI inspired by the artwork presented.

In the next task, each child was asked to draw their own VS on paper, which was then interpreted as a VI. This task also stimulated their artistic creativity, inspired by the possibilities of their voices. The drawings were very different, and each child made an effort to create a drawing that matched their voice. When the time came for the VI, most of the children confidently presented their drawings and performed their music with their voices in front of the group. Only one girl was hesitant to read her score on her own, but after the suggestion that someone could read along with her, she gained confidence and performed her score with help.

Story, Association and Leadership in Recorder Improvisation

A short story (Song Story - SS/3) about the blackbird who asked a musician to write a song about it inspired the adoption of a new song (The Blackbird Song). The story and song were used to introduce the children to improvisation on the recorder. In a playful way, using stories and associations with birds, the children improvised on the recorder and its various parts, discovering different ways of making sounds while communicating in pairs - mimicking conversations between two birds.

For example, some children spontaneously started to improvise with their voice (Voice exploration and improvisation - VII/2), which underlines their natural need to express themselves through different modalities. They also spontaneously added different movements (M/3) while playing the instruments. Various associative prompts, such as "owls at night", led to group improvisations about different "flocks of birds" in the night. After choosing the main bird through a counting rhyme, one child takes on the role of the leader, who goes back and forth between the groups of "sleeping birds" "at night", wakes them up and interacts with them. As the main bird, the boy T plays a decisive role. He decided on the play signals - one for the individual groups and another for the collective game - and went from group to group to "wake up" the birds and give them signals. He communicated with the groups in a way that encouraged collaboration and creative expression. When T reached a group, he signalled them to play. He gradually involved other groups until a joint improvisation was achieved. In this way, each group has the opportunity to express themselves before coming together to create a shared musical experience. This activity encourages creativity, collaboration and the children's ability to express themselves through different modalities - the recorder as a physical tool, vocal improvisation and movement.

Discussion

Using Activity Theory (AT) as a reflexive tool in early childhood music education (McGlone, 2019, 2020, 2022), this study explores how multimodal and multisensory interactions shape children's engagement in musical improvisation. In the thematic search phase, the initial checklist of physical and symbolic tools was expanded into codes, which in turn were grouped into broader themes, including new themes suggested by the data. Two overarching themes were then defined, taking into account the observed relationships between the main categories.

Analysis of the data on AT-based modes of expression (body percussion, storytelling, story and association, musical suits from the story, musical games, counting rhymes, song, Orff instruments, improvisation with Orff instruments, sound improvisation, role selection and leadership, vocal improvisation, visual stimuli, recorder improvisation) resulted in the following categories/themes:

Multimodal story-based musical activities, Story and song as mediators in creative musical expression/improvisation, Story-driven collaborative role-play and leadership in musical improvisation, Vocal improvisation as a multisensory and multimodal mode of expression and Story, association and leadership in recorder improvisation.

Following a final analysis of the defined themes (Braun & Clarke, 2006), based on the review and refinement of the above categories/themes, two main themes/categories were defined: *Multimodal and multisensory approaches as a basis for musical improvisation and creative expression, and Storytelling as a mediating tool for the framework of collaborative musical improvisation.* The identified categories/themes address the research questions of the study by highlighting storytelling and association as important modes of expression and mediating artefacts that structure and support creative musical improvisation in ECE. These findings also highlight the role of multimodal forms of communication and symbolic tools in shaping musical improvisation. Furthermore, the children's engagement with storytelling and role-playing suggests that these elements serve as effective mediating artefacts in early childhood music education.

According to MacGlone's research (2019; 2020; 2022), the improvisation activities performed can be viewed through the lens of the defined categories of Creative Music Agency (CMA) and Socio-Musical Aptitude (S-MA). Through authentic and spontaneous expression in the context of activities tailored to the children's interests and needs, the children developed their ideas and discovered unique modes of expression, which is an example of CMA. In addition, collaborative creation fostered a dynamic, interactive and holistic experience in a creative and engaging environment, reflecting S-MA.

Based on the view that the inherently multimodal nature of music is an effective way to learn by engaging all modalities, music classrooms should provide rich sensory stimulation while understanding students' individual modal strengths, which can further enhance their musical learning experience (Campbell, Scott-Kassner, & Kassner, 2006). For example, in the Multimodal story-based musical activities, children were encouraged to make different sounds (e.g., tapping, animal voices, use of body percussion) through the “musical story” and the symbolism of “musical suits” while emphasising the importance of caring for their instruments and voices, creativity, teamwork, and appreciation of music and performance (ST/1).

Through exploration as musical play, storytelling encouraged children to choose instruments and associate their sounds with the characters in the story. As an additional stimulus to storytelling, which guided the whole activity under the category of 'Story and song as mediators of creative musical expression/improvisation', a song was integrated with which the children became familiar through a new short story (Song story - SS). This story also contributed to the expressive way in which the song was performed (S1, ST2, SS1). Through the storytelling and associations that arise from the story, as well as through the integration of singing, spontaneous counting rhymes for selection (CR/2), spontaneous sound improvisations (SI/1) and improvisations on Orff instruments (OI/1) are created. The children are encouraged to think while listening, performing or creating, while being given opportunities to explore (Campbell, Scott-Kassner, & Kassner, 2006). It is precisely the discovery method (Bruner, 1966) and experiential learning through play, movement, listening and creativity that contribute to the development of children's sensitivity to music, which in turn enhances their creativity (Bačlija Sušić & Brebrić, 2022). Furthermore, by recognising and utilising students' individual modal strengths, music education provides a rich sensory stimulation

that enhances the overall learning experience (Scott-Kassner & Kassner, 2006).

In the Story-driven collaborative role play and leadership in musical improvisation category, inspired by the story "At the Bottom of the Sea", storytelling also motivates children to take on roles and leadership in improvisation, promoting synchronisation and collaboration within the group. The division of roles and selection of instruments using a counting rhyme (CR/3) emphasises the gong player's leadership role in the activity (RSL/1). Initially, the music teacher takes the lead, but then the children take the lead and foster teamwork through the symbolic position of the gong player (RSL/1). Accordingly, it is crucial to emphasise the role of the leader of the musical activity as a facilitator and how their actions effectively support and enhance the children's creative development (MacGlone, Wilson & MacDonald, 2021). By implementing appropriate interventions tailored to children's needs, ECE teachers as leaders of music activities can enhance children's musical experiences and reflect the quality of the process through higher levels of engagement and well-being, which is a fundamental aim of the ECEC curriculum (Bačlija Sušić, Fišer Sedinić & Cvrtila, 2022). This category focuses on developing children's leadership skills through play and improvisation so that they can take responsibility for leading activities, managing group dynamics and creating shared experiences. Through free improvisation, children explored and led play, developing creative skills, confidence and collaboration. For example, unlike using open-ended prompts such as 'Just play' (MacGlone, 2019), cues to initiate play were integrated into the storytelling of the guided activities. For example, in the story "No One Works at Night, Everyone Sleeps", the child playing the role of the owl was given a cue to start playing. At the same time, another child spontaneously began to snore (SI/2). The activities in this category help the children to recognise and develop their leadership skills while promoting group cohesion and creative interaction through the use of Orff instruments as a primary mode of expression.

In contrast to the prescribed form of improvisation (Lewis, 2014), in the vocal improvisation, despite their vocal shyness, the children spontaneously engaged in a vocal improvisation inspired by visual stimuli, followed by an improvisation based on their own drawings (VI/2). Similarly, the recorder was used as a tool for group improvisation (RI) along with the voice as an instrument for improvisation to encourage leadership dynamics, acceptance of the leader's signals and symbolic connections to bird behaviour and daily cycles in nature. A short story served as a prompt to perform the song (SS/3, ST/2), further promoting active engagement, spontaneity, and interactive learning in the improvisation activity (Hickey, 2015; Linson, 2014).

By providing a framework with examples of storytelling, the activity leader facilitated and encouraged the children to invent and express their stories through musical improvisation. Based on their experiences, the children suggested their own themes and stories and expressed them through improvisation. This approach helped to create a supportive environment where the children could build on each other's ideas without fear of judgement (Larsson and Öhman, 2018; Larsson, 2019; MacGlone, 2019). This is also supported by other research with children aged 9-10 years (Larsson & Öhman, 2018; Larsson, 2019). S

In all the examples mentioned, storytelling was the basic mode of communication and expression, which, in addition to the modes of expression described, also included various forms of musical activities such as musical games, songs and counting rhymes, which additionally contributed to the successful implementation of improvisation activities. Moreover, this type of musical activity, as a form of folk heritage, enriches and deepens the activity and its theme or topic (Zalar, 2020), while

developing children's cultural awareness

Two main themes identified during the final review process, Multimodal and multisensory approaches to musical improvisation and creative expression, and Storytelling as a mediating tool for the framework of collaborative musical improvisation, are in line with the research aim to explore and describe children's creative musical expression and communication in collaborative improvisation activities in the ECE context, emphasising the multisensory and multimodal nature. These two main themes illustrate that storytelling is one of the most common modes of expression and communication within the multimodal approach to ECE improvisation activities. Storytelling provides structure to the whole process and encourages creative expression across different media and modes. As a mediating artefact, it facilitates improvisation in the ECE context by providing rules and guidelines that shape and organise the improvisation activities. The identification of storytelling as an important mediating artefact underlines its pedagogical importance for ECE improvisation. By structuring creative expression and providing implicit rules, storytelling facilitates both individual and collective engagement in music making. These findings contribute to a broader understanding of multimodal learning in ECE and highlight the importance of structured yet flexible pedagogical approaches to improvisation.

Conclusion

According to the results and defined themes, in the field of musical improvisation in early childhood education (ECE), storytelling served as the primary and predominant mediating artefact and mode of expression and communication within a multimodal approach to improvisation. It integrated all other modes of expression, acted as a mediator that facilitated improvisation, allowed children to explore within clear structures, and fostered creativity, leadership, collaboration, and personal and social skills. By combining different modes of expression (both physical and symbolic tools), children's communicative behaviour in creative music sessions can be described as multimodal, with these modes serving as primary forms of communication, facilitating and mediating the communication process (MacGlone, 2019; Wassrin, 2016, 2019). In this process, the role of the teacher shifts from a direct teacher to a facilitator, encouraging children's creative autonomy and allowing them to gradually take control of the improvisation process. These findings directly address the research questions by demonstrating that storytelling acts as both a mediating artefact and a communicative bridge that shapes children's engagement in multimodal musical improvisation.

In addition, the integration of songs, counting rhymes and musical games as symbolic mediators deepens the theme of the activity, broadens the children's focus and engagement, and provides a seamless transition between the different elements of the improvisation. After the teacher/activity leader provided a framework that initially guided the children's creative expression, the children gradually began to suggest their own themes for the improvisation based on their experiences and took charge of the overall activity. This created a supportive environment in which they could collaborate freely and without fear of judgement (Larsson and Öhman, 2018; Larsson, 2019; MacGlone, 2019). This emphasises the important role of the teacher or activity leader and confirms that adult involvement is a methodological challenge when exploring the relationship between play and child development (Hakkarainen & Bredikyte, 2019). Thus, in improvisation and creativity, adults often have more opportunities to engage with children through

various artistic and multimodal forms of expression such as storytelling.

Storytelling is recognised as a valuable pedagogical tool, especially in the teaching and development of professional skills through music, both in university classrooms and in early childhood and primary education (Rodríguez Lorenzo, 2016; Menéndez Valdeolmillos, 2020; Arteaga Checa, Zagalaz Sánchez, & Cepero González, 1999). Engaging with children's voices and imaginations through improvisation with arts-based approaches supports their creative expression and deepens their understanding, filling the research gap in studies of group improvisation with children (MacGlone, 2022).

Therefore, the integration of storytelling through sound and music in early childhood and primary education programmes is crucial (Chao-Fernández, Reis da Silva, & Gillanders, 2023). Finally, storytelling provides valuable experiences for children by immersing them in a magical world, stimulating their imagination and leading them to new knowledge, while providing structure and support in today's information-rich world. When a child is constantly enriched with positive experiences, they develop into well-rounded and quality individuals (Horvat Vukelja & Heisenger, 2019), which benefits society as a whole.

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