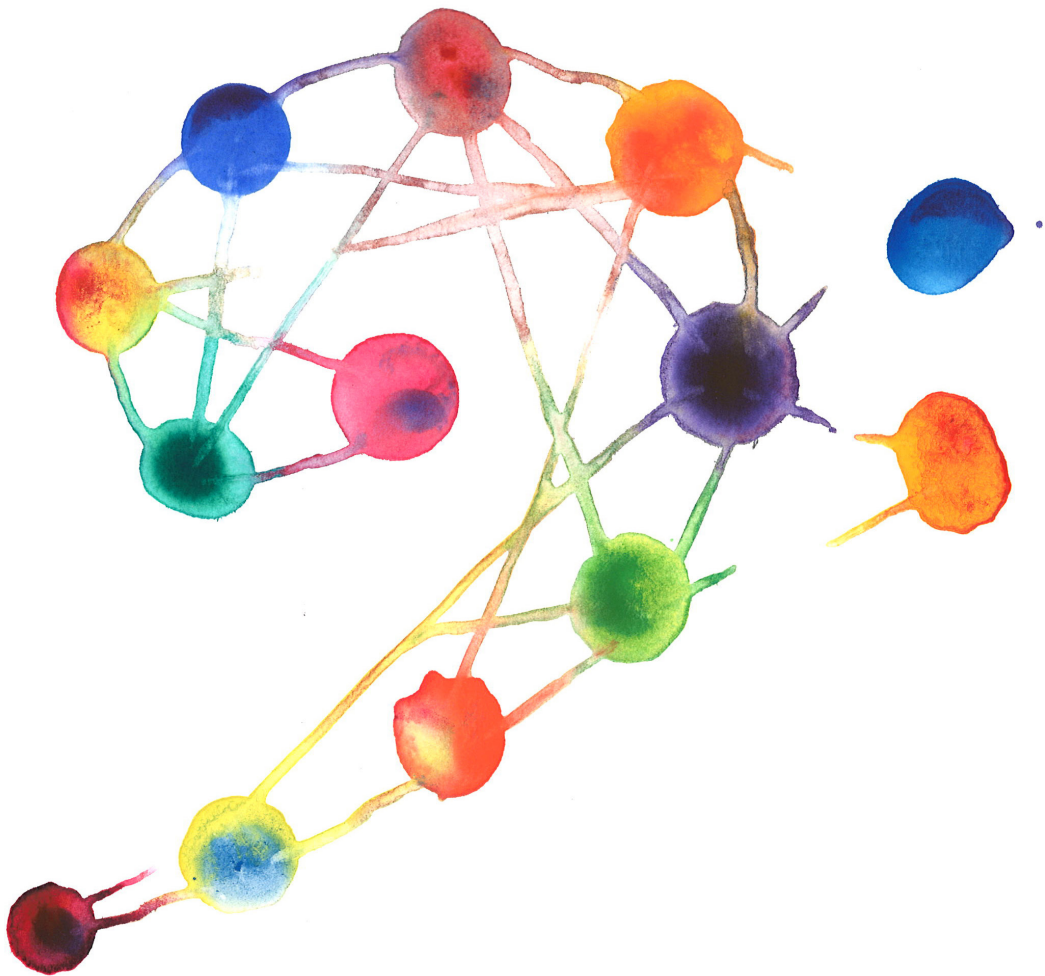Eveliina Stolp

Student Agency in Whole-Class Playing in Music Education

UNIVERSITY OF JYVÄSKYLÄ

FACULTY OF EDUCATION AND
PSYCHOLOGY

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ABSTRACT

The present thesis contributes to the research field of student agency by examining student agency in whole-class playing in primary school through the reported experiences of teachers and students. It approaches and explores agency through the conceptualizations from the fields of education and music education research, building bridges between the disciplines. The thesis consists of three qualitative interview-based sub-studies. The overall dataset comprised 11 music teachers from 10 primary schools and 23 sixth-grade students from one classroom. The students participated in semi-structured paired interviews, and the teachers participated in semi-structured one-to-one interviews. The data were analyzed by conducting qualitative content analysis using both abductive and inductive approaches. In sub-study 1, student agency in whole-class playing was examined through three levels of the teachers' belief system: values, actions, and observations. The findings indicated how student agency in whole-class playing is inextricably connected to students' diverse sociocultural, physical, and temporal starting points, and to the physical conditions that either facilitate or limit students to be agentic through the musical experience. Additionally, the findings emphasized the central role of a teacher in the development and realization of student agency. In sub-study 2, the findings indicated how students' experiences of their agency in whole-class playing are characterized by openness and vulnerability when entering into an experience that is a constantly evolving relationship with music, self, and others. Furthermore, the findings of sub-study 3, based on the reported experiences of teachers and students, suggested how student agency in whole-class playing becomes an in-time emotional experience through interpersonal entrainment when individuals aim for, achieve, and become aware of togetherness through musical, dialogical, and emotional encounters. Overall, the present thesis provides both theoretical and practical knowledge of the potential of entrainment as a tool for establishing both individual and relative aspects of students' agency in whole-class playing, as it functions as a glue between the individual and collective dimensions of agency.

Keywords: student agency; student experience; music teacher; whole-class playing; entrainment; intersubjectivity

TIIVISTELMÄ

Tämä väitöstutkimus koostuu kolmesta osatutkimuksesta, joissa tarkasteltiin opettajien ja oppilaiden kokemuksia oppilaiden toimijuudesta yhteismusisoinnissa. Toimijuutta tarkasteltiin sekä oppilaiden yleisen toimijuuden kautta että musiikillisen toimijuuden näkökulmasta. Haastattelututkimukseen osallistui kymmenestä alakoulusta 11 opettajaa, jotka opettivat musiikkia, sekä 23 oppilasta yhdeltä 6. vuosiluokalta. Opettajien ja oppilaiden puolistrukturoidut haastattelut analysoitiin sisällönanalyysimenetelmien avulla käyttäen sekä abduktiivista että induktiivista lähestymistapaa. Ensimmäisen osatutkimuksen tulokset korostivat opettajan keskeistä roolia oppilaan toimijuuden muodostumisessa. Ne osoittivat, kuinka oppilaan toimijuus yhteismusisoinnissa on erottamattomasti yhteydessä oppilaiden moninaisiin sosiokulttuurisiin, fyysisiin ja temporaalisiin lähtökohtiin, sekä fyysisiin olosuhteisiin, jotka joko edesauttavat tai rajoittavat oppilaan toimijuutta yhteismusisoinnissa. Toisessa osatutkimuksessa havaittiin, kuinka oppilaiden omissa kokemuksissa toimijuudestaan yhteismusisoinnissa korostuivat avoimuuden ja haavoittuvuuden teemat sekä tahdistumisesta löytyvät turvallisuuden kokemukset. Lisäksi 3. osatutkimuksen tulokset osoittivat, kuinka oppilaan toimijuus yhteismusisoinnissa tulee ymmärtää ajansisäisenä sekä tunnepitoisena kokemuksena tahdistumisen kautta, jolloin yksilöt pyrkivät, saavuttavat sekä tulevat tietoiseksi yhteenkuuluvuudesta musiikillisten, dialogisten ja tunnepitoisten kohtaamisten kautta. Kaiken kaikkiaan tämä tutkimus tarjoaa sekä teoreettista että käytännöllistä tietoa tahdistumisen merkityksestä oppilaan toimijuuden vahvistamisessa yhteismusisoinnin kontekstissa.

Avainsanat: oppilaan toimijuus, oppilaan kokemukset; musiikinopettaja, yhteismusisointi, tahdistuminen, intersubjektiivisuus

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LIST OF PUBLICATIONS

The present doctoral study is based on three empirical sub-studies, listed below, that have been published in peer-reviewed journals. Copies of the published articles can be found as appendices to this thesis and they have been reprinted with the permission of the publishers.

Article 1 Stolp, E., Moate, J., Saarikallio, S., Pakarinen, E., & Lerkkanen, M. K. (2022). Teacher beliefs about student agency in whole-class playing. *Music Education Research*, 24(4), 467–481. https://doi.org/10.1080/14613808.2022.2098264

Article 2 Stolp, E., Moate, J., Saarikallio, S., Pakarinen, E., & Lerkkanen, M. K. (2022b). Students' experiences of their agency in whole-class playing. *International Journal of Music Education, 41*(4), 557–570. https://doi.org/10.1177/02557614221130419

Article 3 Stolp, E., Moate, J., Saarikallio, S., Pakarinen, E., & Lerkkanen, M. K. (2022c). Exploring agency and entrainment in joint music-making through the reported experiences of students and teachers. *Frontiers in Psychology, 13*, Article 964286. https://doi.org/10.3389/fpsyg.2022.964286

The author of this thesis is the first author of all three articles. The first author of each article was responsible for developing the research questions, designing and conducting the interviews, conducting the analyses, reviewing the literature, and writing the manuscripts. The co-authors had advisory roles in the design of the studies, data collection and analysis, and interpretation of the findings, and they provided comments on all three manuscripts.

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Thank you to the dissertation examiners, Associate Professor Beatriz Ilari and Professor Auli Toom, for your encouraging and detailed comments which allowed me to improve and finalize my thesis manuscript. I want to thank Beatriz Ilari for agreeing to be my opponent on the exciting day of my defense, and I hope I will be able to collaborate with and learn from you in the future. I also want to thank all the anonymous and non-anonymous reviewers of the three articles of my thesis, as your comments have challenged me to grow as a researcher. A special thanks to Eeva Lindroos for painting the most beautiful and delicate cover art for this thesis – it tells its own story.

I want to thank the Department of Teacher Education at the University of Jyväskylä for its financial support of my doctoral studies. One question really can change one's world, so I am grateful to Department Head Sirpa Eskelä-Haapanen for one question she asked me on one very normal day. I had been teaching at the Department of Teacher Education for two years and regarded myself as a teacher with a big T but, honestly, far from being a researcher. Then the question came: "Eve, about what would you do research?" Here we are. Thank you for seeing potential in me, believing in me, and encouraging me throughout this whole journey.

PREFACE

Recorded on February 10, 2023

Mother: "What are you doing with Maria and Teresa?"

Elli: "Well, I hum to them so that they understand, and then they start to sing."

Mother: "Do you sing and hum together?"

Elli: "Yes."

Mother: "How do you feel about it?"

Elli: "It feels nice."

Mother: "Do you play together?"

Elli: "Well . . . usually, they play only two of them because they cannot understand the language of others."

Mother: "But then the singing, what do you think about that?"

Elli: "It makes you feel happy."

Mother: "Do you go to sing to them, or do they come to sing to you?"

Elli: "They don't come to sing to me, but we sing together when we eat or in the afternoon. I mean we hum because they don't understand my language. Finnish."

Mother: "When you hum with them do you feel like you are friends with them?"

Elli: "Yes. It makes us feel happy."

After listening to this recorded conversation of five-year-old Elli and her mother, I felt like I had found the lost piece of my thesis, the one which would make my work complete. Elli and her mother were discussing everyday life in daycare, where there are children from different cultures and various backgrounds. With the permission of Elli, and her parents, I am happy to share this with you. This is something I want my thesis to start with, and I hope that after reading my work, you will return to this discussion and to Elli's wise thoughts.

FIGURES

TABLES

CONTENTS

ORIGINAL PAPERS

1 INTRODUCTION

This thesis focuses generally on joint music-making and, more particularly, on a method used in Finnish schools called whole-class playing, as a platform for agency in music education in the school context. Student agency in educational settings has become a central concept of interest in recent educational research (Kangas et al., 2017; Niemi et al., 2015; Vaughn, 2020). However, research on agency in childhood research is still lacking, and no consensual definition has emerged due to its complex and indeterminate nature, as well as the differing viewpoints concerning the nature of children and childhood (Uprichard, 2008; Valentine, 2011).

The present thesis draws on the subject-centered sociocultural approach to agency, which sees agency as a dynamic and constantly evolving process that is interdependent on individual, social, temporal, and environmental factors (Eteläpelto et al., 2013). This approach (Eteläpelto et al., 2013) views subjects as individuals who actively consider what is worth pursuing based not only on the experiences of their skills and competencies but also on their feelings. However, student agency in music education has received little attention to date. Previous research has indicated how student agency connects with effective learning, and it is also widely acknowledged that both student and teacher participation in different learning environments have central roles in the formation of student agency (Niemi et al., 2015; Ruohotie-Lyhty & Moate, 2015; Vaughn, 2020).

However, little research has focused on students' experiences of their agentic processes in whole-class playing, even though recent research has acknowledged how listening to the experiences of students is essential in fostering student agency and transforming classroom practices (Cook-Sather, 2020). Moreover, little is known about students' experiences of the teachers' role in facilitating or constraining their chances of being agentic. Previous research has noted how a teacher's belief system, meaning teachers' pedagogical values, actions, and observations, plays a key role in the development of their students' agency as the belief system has a significant role in how a teacher acts and teaches in the classroom, which further influences how their students learn, and which ultimately reconstitutes the teacher's belief system (Turner et al., 2009). Thus, the support

students receive from their teachers, which is an essential element in increasing the agency of a student (Niemi et al., 2015; Ruohotie-Lyhty & Moate, 2015), is driven by the belief system of their teachers (Song & Looi, 2012; Spruce et al., 2021; Turner et al., 2009). Consequently, the current thesis focuses on student agency in whole-class playing in the Finnish primary school context by using both teachers and students' experiences as a starting point for exploration.

Whole-class playing in this thesis is defined as any kind of collaborative musical action among a group of people with different instruments, including voice, instruments, and body percussion. The study was conducted in Finland, where the national core curriculum for basic education emphasizes a learner-centered approach and where music is part of timetabled basic education in an everyday school setting. Music education in Finnish schools includes musical activities and methods to promote musical and social skills, well-being, creativity, and cultural understanding (Finnish National Agency for Education, 2016). A central method in Finnish music education is whole-class playing, which involves every student, irrespective of their musical background, playing different instruments (including voice and body percussion) and musical styles together as a group in the mainstream music classroom. Finnish basic education in music does not offer private instrumental tuition, but Finnish students are encouraged to work with different instruments and find their own ways of participating, rather than mastering one instrument. In whole-class playing, every student is assumed to be part of the activity that is grounded on individuals forming a collective "one" through music, which provides an interesting environment to explore what kind of agency is required for a student to enter into the collective exploration of music-making.

The work of Biesta (2005, 2021) has challenged the way we understand and speak about the process of education, as well as its purpose and content, and he has particularly highlighted the central role of agency in learning contexts. His work (2005) sheds light on the nature of learning being thoroughly relational and intersubjective, the core of which is in the will of an individual to take risks to "become into a presence" in a social world, as learning is not only listening and seeing but also responding to what and who is other and different. If the responsibility of education is to expose students to otherness and difference (Biesta, 2005) or to provide opportunities to expand children's sense of their potential (Adair, 2014), it is no wonder that previous studies on student agency (Kirby, 2020; Mameli et al., 2020) have emphasized the interdependent relationship between agency and students' experienced emotions. However, to date, the problem is that not much is known about how the agency of children is constructed due to different views regarding the developmental course of agency. Moreover, Biesta (2021) has argued how education should be world-centered, replacing the egocentric with an ecocentric approach, meaning that the focus of education should be to equip the next generations to learn how to exist "in" and "with" the world, acknowledging its social and natural limits. These philosophical points about learning and education (Biesta, 2005, 2021) provide an important

justification and a foundation for the exploration of agency through the modality of music, which has received little attention to date.

Similarly, in the field of music education research, Juntunen et al. (2014) discussed how a joint musical act invites the students to promote their personal and social agency by engaging in, experimenting with, and being part of exploration that is socially and musically unknown. Unknown here points to physical, emotional, temporal and environmental factors, meaning that every time we step into making music with people, even though the song is familiar to us, music-making happens in the moment. It is different every time, as our experiences, knowledge, emotional and physical states, starting points, and the impact of our peers on us affects the wholeness. Thus, every time, we need to adapt, listen, and respond to be able to find our way to the joint shared tempo, which also might be different from that of the previous time.

When individuals come to make music together, their joint action is characterized by entrainment, meaning the complex rhythmic timing and mutual sharing in the moment (Phillips-Silver & Keller, 2012). Entrainment is regarded as a spontaneous neurophysiological process influencing cognition, but it is also intertwined with the social dimension of knowledge (Clayton et al., 2020). A fairly new model of interpersonal musical entrainment (Clayton et al., 2020), defined as the interaction and coordination between human beings mediated by sound and movement, highlights not only entrainment's social nature but also the role of the resources available, environment, and knowledge as factors enabling an individual's participation. However, it has been noted how neuropsychological and neurophysiological dimensions affect and support the social dimension of entrainment. Similarly, Kim et al. (2019) have argued that the different levels of entrainment are embedded by conscious awareness and the experience of being in time in social contexts, which further contributes to sociality. The neurophysiological and neuropsychological dimensions of entrainment bridge with the intersubjective nature and notions of both student agency and musical agency, where, for example, perception, cognition of and reflection on music, and affect attunement play central roles. Consequently, entrained participation in whole-class playing requires agentic action, as people need to be willing to aim for togetherness, both musically and socially. However, little is known about the social nature of entrainment, or how it connects with student agency, although entrainment is present in everyday music classroom settings.

From the music educator's perspective, whole-class playing is one of the most challenging methods in the Finnish music education context as it invites every student, despite their starting points, to participate. I have been working as a music teacher at different educational levels, and I have found myself in situations where it is challenging to get classes of students to play together. I have seen the students endeavoring to be part of the group that is making music. I have also done everything I could with a student who, in the end, refused to participate. My experiences in my everyday life as a music teacher led the way to this research because I wanted to understand more about these issues and why entering into whole-class playing is exciting to one student and so intimidating

to another student that the latter feels they have no other choice but to opt out of the experience. I approach this topic not only as a music teacher, but also as a musician, teacher educator, and researcher, and these are the lenses through which I examine this important subject throughout this thesis.

The aim of this thesis is to further our understanding of the role of whole-class playing in music education as a platform for student agency. This thesis approaches student agency from a socio-constructivist (Vygotsky, 1978) view on learning, emphasizing the experience of an individual as a learner in the constantly evolving processes of interaction and active participation (Vaughn, 2020). Thus, the current thesis contributes to the field by supporting the view that the agency of an individual is constructed and developed in a process through individual, relational, temporal, and environmental entities, and by examining how these entities become enacted in whole-class playing that is characterized by entrainment. Furthermore, this thesis contributes to the discussion about student agency in music educational environments by exploring the experiences of both teachers and students about agentic processes through collective music-making. This thesis brings together theories from education, music education, and music psychology in a novel and complementary way, acknowledging how a single theory cannot always be comprehensive when looking at complex educational phenomena (Chan et al., 2022; Clarke et al., 2012). Three studies were carried out with 11 teachers and 23 students, interviewed in pairs (with one triad). The research questions were as follows: (1) What characterizes student agency in whole-class playing? (2) What is the role of the teacher in student agency in whole-class playing? and (3) What does entrainment in whole-class playing provide as a lens for exploring student agency?

2 THEORETICAL BACKGROUND

2.1 Subject-centered sociocultural approach to agency

This thesis draws upon a subject-centered sociocultural approach to conceptualize agency (Eteläpelto et al., 2013) that views people as willing and feeling agents whose agency is in a constantly evolving process and an ongoing negotiation in relation to time, social, and material environments (Priestley et al., 2015). A subject-centered sociocultural approach (Eteläpelto et al., 2013) emphasizes the role of feelings, interpretations, meanings, and purposes in reconstructing the realities of individuals when they actively choose and consider what is worth pursuing in the present moment in a certain environment. Although agency is always realized in the present moment, it is always affected by the past and the future as well as the reality of the environment with its available resources and constraints (Biesta & Tedder, 2007; Eteläpelto et al., 2013; Priestley et al., 2015). Thus, agency should not be studied only through events of visible actions, but also through the processes behind the action, resistance, and purposeful maintenance of a present activity.

A subject-centered sociocultural approach to agency connects with the socio-cognitive perspective of agency (Bandura, 1986, 1999) in that the experience of individual resources, such as self-efficacy and competence, are significant factors of agency. In addition to individual resources, a subject-centered sociocultural approach acknowledges the significant role of others and environmental conditions in the process of constructing and practicing agency (Eteläpelto et al., 2013). Moreover, this approach to agency emphasizes the dynamic nature of the process, where agency can be achieved, not possessed, through engaging with different temporal-relational contexts, and the meaning of how the subject learns through these processes (Biesta & Tedder, 2007; Eteläpelto et al., 2013).

2.1.1 Student agency

Student agency has received much attention in recent educational research (Jääskelä et al., 2020; Kangas et al., 2017; Niemi et al., 2015). Although student agency is highly appreciated across research in education, the development and construction of primary school student agency have been less studied. Moreover, while the importance of studying student agency in different learning environments is emphasized, it appears that current music education research has not developed an understanding of how student agency can be conceptualized, how it is constructed, or how it is best supported in the context of whole-class playing. Whole-class playing offers a multimodal platform to explore student agency, where, along with the various notions of agency, music itself plays a significant role in creating opportunities for participation and new ways of relating to others (Ruud, 2020). Therefore, the present thesis fills these gaps by exploring both teachers' beliefs and students' experiences of their agency to better understand the concept of student agency in whole-class playing in music education.

Previous research has indicated how supporting the agency of students leads not only to effective learning but is also connected to advancing a responsible society by increasing the competence and motivation to encounter and make changes in life and take responsible actions to make a difference if needed (Vaughn, 2020). As student agency is regarded as students' willingness, pointing to an individual choice, capacity, and interest to act (Rajala et al., 2016; Skinnari, 2014), previous research has also emphasized the central role of teaching practices in the process (Niemi et al., 2015; Ruohotie-Lyhty & Moate, 2015). Furthermore, the experience of the possibilities of learning and teaching activities in a shared space of the classroom are salient factors in the process of student agency (Kirby, 2020).

In this study, agency is defined as the willingness and capacity to act in terms of the interdependent process of individual, relational, and intersubjective reality where music itself plays a special role. However, agency in childhood research is a vague concept because of its complex, multidimensional, and indeterminate nature (Uprichard, 2008; Valentine, 2011). The agency of children is many times treated as competence or capability, which tends to neglect the role of its environmental, embodied, and material dimensions (Valentine, 2011). Moreover, there are conflicting approaches in perceiving the child as a human "being," as a social actor constructing their world around them or in the process of future-oriented "becoming," and they are often treated as someone lacking the skills or characteristics required to become an adult (Uprichard, 2008). Also, children's agency is argued to be embedded with the agency of other children and adults, so it should also be studied with the goal of understanding power relations (Valentine, 2011). Thus, the agency of one person may have a major impact on the agency of another person, and the concept of agency becomes complex depending on whose interpretation counts, that of the teachers, other students, or the actors themselves (Skinnari, 2014).

The work of Jääskelä et al. (2020) has emphasized the interdependent relationship of different resources of student agency in tertiary settings. According

to the authors, certain *individual resources*, such as competence beliefs, self-effi-cacy, and interest; *relational resources*, such as emotional atmosphere, experiences of trust, support from teacher and peers; and *participatory resources,* including the subjects' experience of the opportunities for active participation, influencing, and making choices. These different resources are all connected to each other, thus affecting one another and all together forming the process of student agency. Specifically, tertiary educational research has addressed how an emotionally safe atmosphere in learning situations is central in advancing student agency (Juuti-lainen et al., 2018; Jääskelä et al., 2020; Ruohotie-Lyhty & Moate, 2016), highlight-ing the importance of better understanding the agency in different learning en-vironments that are characterized by the relational reality and intersubjective world.

The role of a teacher in the formation of student agency has been widely acknowledged in previous research (Jääskelä et al., 2020; Niemi et al., 2015; Ruo-hotie-Lyhty & Moate, 2015). After all, a teacher spends a significant amount of time with their students and is the person in charge of the activities and support provided in the classroom. The way teachers act in the classroom is driven by their pedagogical values and beliefs concerning education, which further influ-ences how their students learn (Song & Looi, 2012; Turner et al., 2009). Further-more, observations on how students are participating and learning in different contexts reinforce the teachers' belief systems (Turner et al., 2009). Thus, in addi-tion to learning outcomes, teachers' beliefs are expected to influence student agency. The work of Spruce et al. (2021) emphasized how music teachers' belief systems include various aspects of music and music educational knowledge, such as what it is to be a learner, teacher, and musician, and of the most effective pedagogical relationships within music educational settings. According to them, this belief system plays a significant role in how music teachers curate their teach-ing, which is in line with previous research (Song & Looi, 2012; Turner et al., 2009). However, it remains unclear exactly how teachers are supporting their stu-dents' agency on the path toward and through the experience of whole-class playing. Therefore, the present thesis explores both teachers and students' expe-riences to ascertain how they reflect on these experiences.

Recent research on student agency has emphasized the presence of emo-tions that children experience in the process of negotiating with their agency as they navigate their ways of participation in the classroom environment (Kirby, 2020; Mameli et al., 2020). An increasing amount of research has acknowledged how emotions and agency are closely linked, as emotions have a significant role in enhancing or constraining the actions of an individual (Eteläpelto et al., 2013; Ruud, 2020; Slaby & Wüschner, 2014). We use emotions to inform ourselves of what we regard as the potential for doing or happening (Slaby & Wüschner, 2014), and in reconstituting our worlds (Ruud, 2020). Thus, emotions create a foundation for the process of agency. The agency of a student is not always real-ized through positive orientation and educational goals but sometimes also through resistance and withdrawal from social activity, signaling that something needs to be done differently to avoid experiences of meaningless activity

(Skinnari, 2014). Hence, if education is regarded as an opportunity to expand children's sense of what they have, such as the potential to be and do individually and collectively (Adair, 2014), we should seek to understand the emotional side and inner interpretations along with the visible manifestations of agency, which is in line with the concept of a subject-centered sociocultural approach to agency (Eteläpelto et al., 2013).

Agency has been conceptualized and studied in different research fields, such as education and childhood research, but bringing these concepts together has not occurred due to the difficulties in reaching a consensual definition, which is due not only to the traditions of various disciplines but also to the lack of agreement concerning children, childhood, and the meaning of their development and rights. Thus, there is a need to further examine agency in different environments and contexts to better understand the diversity of the concept. Consequently, the novel contribution of this dissertation is to build bridges between different research fields by exploring agency not only through the beliefs of teachers but also through the experiences of students in whole-class playing that has its own unique features as a context.

2.1.2 Musical agency

Musical agency has become an increasingly important concept in music education research, as it has offered a perspective on how to deepen the understanding of music education practices in sociomusical contexts (Juntunen et al., 2014; Karlsen, 2011; Ruud, 2020; Saarikallio et al., 2019). The sociologically inspired notion of musical agency is always conceptualized as relational, and music education research has recognized both individual and collective levels of musical agency in musical interactions (Karlsen, 2011; Ruud, 2020). Musical agency refers to becoming aware of one's personal, relational, and material resources in the immediate environment (Ruud, 2020) and includes, along with the musical aspects, the non-musical outcomes (Juntunen et al., 2014; Karlsen, 2011; Saarikallio et al., 2019). Thus, musical agency is constructed through individual, social, and environmental factors, which are also central for a subject-centered sociocultural approach to agency (Eteläpelto et al., 2013). For example, in the work of Karlsen (2011), the individual dimension of musical agency was found to include aspects of constructing oneself in relation to others "in and through music," whereas the collective dimension of musical agency highlights the opportunities to explore social relationships, establish, and affirm collective identity, and structure social encounters through collective musical acts. The collective dimension of musical agency links to Small's (1998) ideas of music as a 'human encounter' where the essence of music can be found not only in musical works, but especially in exploring human relationships.

2.2 Interpersonal entrainment and intersubjectivity in sociomusical contexts

Whole-class playing is a sociomusical context, as people come together as a group to make music in a music classroom. In sociomusical contexts, such as making music or dancing together, entrainment is used to describe in-time interactive synchronization between participants through music (Cross, 2014; Phillips-Silver & Keller, 2012). However, coming together to achieve a joint goal, in this case playing music together, requires will, active participation, musical capability, and action from an individual, which are noted as central aspects of the different notions of agency in education (Rajala et al., 2016; Skinnari, 2014) and research in the field of music (Karlsen, 2011). Entrainment has been widely studied in music education and music therapy contexts; nevertheless, little is known about the relationship between entrainment and agency.

Previous studies have indicated how entrainment contributes to prosocial behavior and social cohesion and leads the way to uniting humans, as it has been regarded as a significant factor in bringing people together (Ilari et al., 2018; Kirschner & Tomasello, 2010; Mogan et al., 2017). The rudiments of entrainment such as the capacity to perceive and produce the periodic movements appear early in development (Winkler et al., 2009; Zentner & Eerola, 2010), and it has been shown to develop and change over time (Clayton et al., 2020). The quality of entrainment, meaning how precise or loose it is, is obviously not the same for primary school students as for professional musicians (Clayton et al., 2020). Rhythmic entrainment has been discussed to advance children's prosocial behavior and social competence (Ilari et al., 2018; Kirschner & Tomasello, 2010). Furthermore, synchronous actions have been argued to be drivers of cooperative behavior and empathy that give rise to positive affects (Mogan et al., 2017). These studies about the relationship between entrainment and prosocial behavior have suggested that as being thoroughly social, the experience of entrainment should be studied qualitatively along with measuring it quantitatively. However, the review by Cross et al. (2019) sheds light on this by providing relevant findings on the social effects of entrainment that are not typically seen as prosocial, such as being willing to hurt and kill bugs (Wiltermuth, 2012a) or to produce an aggressive noise blast to frighten strangers (Wiltermuth, 2012b) if the request comes from people whom one has entrained with. Noting that the negative aspect of entrainment exists, this thesis capitalizes on the potential positive effects.

Previous research has indicated how synchronous action drives prosocial behavior through affective mechanisms (Mogan et al., 2017), and how oxytocin and endorphins have a central role in influencing social bonding through synchronous musical action among participants (Launay et al., 2016). Although entrainment involves spontaneous neurophysiological processes, Clayton et al.'s (2020) rather new model sheds light on the social processes of interpersonal entrainment in musical contexts by comparing synchronization, pointing to the aspects of perceiving the rhythm, anticipating the timing based on this rhythm,

producing the rhythmic movement, and aligning the timing of produced movements and coordination. In their work, this refers to a separate process of structural alignment of individual parts and the explicit negotiation between individuals, which are more accessible to conscious appraisal and control. They describe the social, material, environmental, and cultural aspects of entrainment, and they underline the role of knowledge as essential to being able to anticipate and plan in the process of interpersonal entrainment. By knowledge, Clayton et al. (2020) mean representations, such as typical meters and how they can be inferred from acoustic signals, where, for example, written scores may help, but it is also the complex plans that groups of people develop and coordinate for achieving an appropriate result of their musical performances that are essential to success. Although interpersonal entrainment is affected by the knowledge individuals hold enabling or limiting their participation, and social aspects, such as the participants of the group, interactions, environment, and resources available (Clayton et al., 2020), these aspects of interpersonal entrainment have received little attention to date. Thus, a musically entrained collaborative action requires from an individual a highly agentic action, such as will, sense of capability, and action itself, for entrainment to even exist. Moreover, when playing together, the particular role of music itself, such as musical elements, repetition, and loops, opens participatory musical forms, thus creating a sense of safety (Turino, 2008), and eases participation with different skill levels by creating a dense musical texture where it is hard to depict "mistakes" made by individuals (Ruud, 2020).

Musical encounters through the experience of entrainment are highly affective, relational in nature, and based on communication that goes beyond words, which are central aspects of intersubjectivity (Trondalen, 2016). The nature of intersubjectivity reaches beyond the verbal world, increasing an individual's state of consciousness (Trondalen, 2016). Previous research has indicated how engaging in musical action opens the way for dialogic space through mutual resonance and embodiment (Vass, 2019). The intersubjective process, at the practical level in musical presence, is comprised of awareness and experiencing each other through the body and emotions, where the attunement of affects and joint intersubjective recognition play a key role (Trondalen, 2016). Intersubjectivity has been argued to form the basis for the language itself, togetherness, possibilities for action, and subjectivity through the unspoken and relational interaction where microprocesses, such as facial expressions and movements, lead the way (Stern, 2004; Trondalen, 2016). While previous research has linked the experience of entrainment to positive emotions and the sense of togetherness (Mogan et al., 2017; Phillips-Silver & Keller, 2012), or to the profound connection to human sociability (Clayton et al., 2020; Ilari et al., 2018; Kirschner & Tomasello, 2010), the research on agency has highlighted the central role of emotions in the process of agency and active participation (Eteläpelto et al., 2013; Kirby, 2020; Mameli et al., 2021; Ruud, 2020; Slaby & Wüschner, 2014). Thus, this thesis considers whole-class playing as a unique learning environment which is a highly relational, affective, embodied, and interactive platform for constructing an individual's agency.

3 THE AIM OF THIS THESIS

The general aim of this thesis is to contribute to the research on student agency by investigating the role of whole-class playing in music education as a platform for student agency. The more specific research questions were as follows:

1. What characterizes student agency in whole-class playing? (Sub-studies 1, 2, and 3)
2. What is the role of the teacher in student agency in whole-class playing? (Sub-studies 1 and 2)
3. What does entrainment in whole-class playing provide as a lens for exploring student agency? (Sub-studies 1, 2, and 3)

4 METHOD

The present thesis is grounded on the social constructivist paradigm, which acknowledges the way knowledge is created in an ongoing interaction with others and society (Burr, 2015). According to social constructivism, the perceptions and meanings of an individual are dependent on the social context not only through language (Burr, 2015) but also through the embodied processes (Lakoff & Johnson, 1999). In other words, individuals construct their knowledge and understanding by participating in, engaging with, and making meaning of their experiences (Fosnot, 2005). Social constructivism as a theory of learning emphasizes the way we learn through interaction with others, and it highlights the role of the environment as supporting or constraining the possibilities to learn (Wiggins, 2015). Thus, social constructivism as a theory of both philosophy and learning acknowledges the role of the individual, social, temporal, and environmental in the process of building knowledge, which are also central aspects in the subject-centered sociocultural approach to agency (Eteläpelto et al., 2013). The present thesis is focused on understanding the experiences of teachers and students, and the choice of methods aimed to elicit participants' experiences of agency in whole-class playing. From the social constructivist point of view, the meanings and the language of the experiences that the participants in the study expressed in the interviews represent their knowledge and individual interpretations of whole-class playing from their perspectives.

The role of the researcher is central in making interpretations (Burr, 2015) in qualitative research. I am a music teacher, and I worked at different schools with various age groups before I started my journey as a researcher. Thus, I have my own experiences and knowledge about whole-class playing, which have influenced the way the study was designed and conducted, and how the data were collected, analyzed, and interpreted. The research questions of sub-studies 1 and 2 first developed from my personal interests, but they evolved and were refined through the iterative and dialogic processes involved with the data, theories, and ethical aspects. Furthermore, a need for new questions arose during the data analysis that was conducted for sub-studies 1 and 2, which exemplifies well the dynamic nature of the development of research questions in qualitative research

and the role of the researcher in the process (Agee, 2009). Both abductive and inductive approaches were used in the qualitative content analysis to best listen to the voices of the participants and to allow the creative but inferential process of extending the theoretical perspectives. Data analysis included an intercoder reliability process and discussions with co-authors to ensure the integrity of the results. Additionally, the interpretations of the data have been carefully described and linked to existing theories in respect to the findings to increase the reliability of the study.

4.1 Participants and procedure

The data for all three sub-studies were drawn from the reported experiences of 11 teachers and 23 students in Finnish primary education. The overall dataset of the thesis comprised 11 individual teacher interviews and 11 student pair interviews with one triad, which were conducted during the COVID-19 pandemic. Before data collection, the teachers, as well as the students and their guardians, were informed by the author of the thesis about the purpose of the study, interviews, and ethical commitments, after which oral consent was given by the students, and written consent was signed by their guardians and teachers. Semistructured interviews (Tracy, 2013) were conducted with both teachers and students.

The teacher participants from various primary schools (10 schools) in central Finland were recruited through email or social media. To increase the diversity of the sample, the variation of teachers was sought in their educational background, the schools they taught in, work experience, and age. All the teachers taught music in Grades 1–6 in Finnish basic education. Four were qualified as music teachers and three as class teachers, and four had qualifications as both music and class teachers. The teachers' backgrounds, including their gender, age, education, and work experience, are presented in Table 1.

Students were recruited via one of the music teacher participants. The selection of Grade 6 students was guided by the timetable of the school as well as the willingness of the students to participate in the study. The class of 12–13-year-olds included 11 male students and 12 female students with diverse backgrounds, ranging from enthusiastic hobbyists who played instruments in their free time or who regarded music as an important way to deal with emotions to those who regarded music as a compulsory school subject where they had no choice but to attend. The class teacher allowed the students to freely choose their pairs prior to the interviews.

4.2 Data collection

Data for sub-studies 1 and 3 were collected by conducting one-to-one semi-structured interviews (Tracy, 2013) with the teacher participants. Before the interviews, teachers were asked to fill in questionnaires on their backgrounds, supplying such information as age, gender, work experience, and education. The themes of the interviews were developed in relation to earlier research about student agency (Jääskelä et al., 2020) and musical agency (Karlsen, 2011). In the interviews, the participants were asked to share their experiences of joint music-making or whole-class playing situations.

Data for sub-studies 2 and 3 were collected by conducting semi-structured pair interviews with the student participants. In addition, the interview questions were developed based on earlier research on student agency and musical agency. In the interviews, the student participants were asked to share their experiences of the whole-class playing situations. For sixth-grade students, questions were designed to be very concrete and open for them to be able to describe their experiences in their own words. The questions concerned their relationships with music, instruments, and processes and actions during whole-class playing situations. The questions presented in students' interview are in Appendix 1.

Teachers were interviewed remotely via Zoom or Microsoft Teams in October 2020. Pair interviews with the students were conducted in April 2021 at their own school during their regular lessons. The student interviews lasted from 6–15 minutes, and the final dataset included 103 pages of transcribed text, whereas the teacher interviews lasted from 30–60 minutes. The final dataset included 260 pages of transcribed text (all transcripts were double-spaced in 12-point font). The interviews were recorded with MP3 audio-recording devices, transcribed, and anonymized. The questions presented in teacher interviews are in Appendix 2.

In self-reports, social desirability bias is often common, and in my research, this bias has been prevented by ensuring anonymity for the participants, guaranteeing confidentiality, verbalizing the need for and the value of honest opinions, asking participants open and concrete questions about their own experiences, and asking them to give examples from the situations of whole-class playing. Furthermore, the student participants were not my students, and the teachers were not my colleagues. Instead, I was a researcher who came from outside of their school. Being that I was an outsider from the participants' group allowed the participants to share their experiences more openly since they did not expect me to know the answers to the questions. However, since I was unfamiliar to them, I am not sure if they felt safe enough to share all their experiences. It should be noted that the pairs had an impact to each other, but this impact was visible in the form of honest opinions and openly shared experiences but also, at times, in the form of inner circle humor and occasions where students began to stray from the topic. Being an outsider allowed me to analyze and interpret the data more critically, but, on the other hand, I have to acknowledge that my

background as a music teacher, musician, and teacher educator has had its own impact on my research process.

4.3 Data analysis

In sub-study 1, an abductive approach (Timmermans & Tavory, 2012) was used in the qualitative content analysis. The analysis consisted of three rounds. First, manifestations of student and musical agency were identified in the transcribed texts, and in vivo codes were formed. The first round of the analysis was double-coded by two coders to calculate intercoder reliability (Lombard et al., 2002). The second round of the analysis was inductive as the first-round analysis did not explain all the codes, their relations to theoretical perspectives, or the relationship between action and agency of students. The second round included identifying other main themes, sub-themes and meanings, and modifying existing themes by adding or combining them. Additionally, a synthesis of the findings was formed. Third, the main themes were examined, and the characteristics of student agency were identified as related to teacher beliefs and values, actions, and observations.

In sub-study 2, an inductive approach was used in the qualitative content analysis, adapting Vaismoradi et al.'s (2016) theory of the theme development process which builds on four steps: initialization, construction, rectification, and finalization. The analysis consisted of four rounds. The first round included identifying all the manifestations of agency and forming in vivo codes. Second, all the codes were formed into conceptual codes, clustered into categories that were further sorted into sub-themes and finally into main themes. Third, distancing from the data and discussions with co-authors took place enhancing self-correction, after which all the codes were revisited to ensure the representation of all participants. Finally, the findings were linked to the existing literature.

Sub-study 3 included both abductive and inductive approaches that were used in the qualitative content analysis, as the first round of the analysis was abductive, but rounds 2, 3, and 4 were inductive. Again, Vaismoradi et al.'s (2016) theory of the theme development process was applied. This combination enabled the possibility of being as open as possible to themes raised by the student and teacher participants. The first round of the analysis was to identify all the manifestations of agency, based on the individual, participatory, and relational aspects of agency, in the transcribed text and forming the in vivo codes. Second, the in vivo codes were sorted by their similarities into conceptual codes and further to sub-themes and main themes. The third round included distancing, discussions with co-authors, self-correcting, and reviewing potential themes to ensure they were representative of meanings in the data. The final round included exploring the findings in relation to existing theories and literature.

TABLE 1   Overview of the sub-studies

	Sub-study 1	Sub-study 2	Sub-study 3
Title	Teacher beliefs about student and musical agency in whole-class playing.	Student experiences of their agency in whole-class playing.	Exploring agency and entrainment in joint music-making through the reported experiences of the students and teachers.
Aim	To investigate teachers' beliefs about how students' musical agency is enacted in whole-class playing.	To explore how students experience their agency in whole-class playing.	To explore the relationship between entrainment and agency through the reported experiences of students and teachers in joint music-making.
Research questions	1) What characteristics of student agency are highlighted in teachers' values? 2) What characteristics of student agency are highlighted in teacher actions? 3) What characteristics of student agency are highlighted in teacher observations?	1) What kind of aspects of agency become highlighted in these experiences? 2) What kind of agency do sixth-grade students demonstrate in whole-class playing?	1) What characteristics of agency are present in the reported experiences of students and teachers in joint music-making? 2) In what ways do agency and entrainment resource and constrain each other in joint music-making?
Participants and data	Interviews of 11 comprehensive school music teachers (semi-structured).	Pair-interviews of 23 sixth-grade students (semi-structured).	Interviews for 11 teachers and pair-interviews for 23 sixth-grade students (semi-structured).
Analysis	Qualitative content analysis: abductive approach.	Qualitative content analysis: inductive approach.	Qualitative content analysis: abductive approach.

5 OVERVIEW OF THE ORIGINAL STUDIES

5.1 Sub-study 1: Teacher beliefs about student agency in whole-class playing

Sub-study 1 aimed to explore music teacher (*N*= 11) beliefs about student agency in whole-class playing in order to understand what characterizes student agency in whole-class playing. The study investigated this through three levels of teacher's belief systems, including the teachers' pedagogical values, actions, and observations.

The findings showed that teachers see agency in the whole-class playing context as being highly relational and interactive. The findings indicated how agency in whole-class playing is inextricably connected to students' diverse sociocultural, physical, and temporal starting points, and to the physical environment, which either facilitates or limits students to be agentic through the musical experience. Teachers also described the importance of a safe atmosphere as a starting point for collaborative musical action and the value of students experiencing belonging and social growth in whole-class playing. The role of music in whole-class playing was acknowledged as inviting and uniting and as a medium for both knowing emotions and gaining feedback.

The role of student motivation was regarded as a central aspect of student agency in whole-class playing. At the same time, the teachers acknowledged motivation as consisting of several multifaceted factors of both musical and student agency, such as competence beliefs (playing instruments and perceiving different elements of music), musical identity, self-efficacy, and possibilities to influence and make choices. Through the analysis, many descriptions of how the teachers had sought to support their students' agency were identified. This suggests that music teachers work multimodally by using music, resources, and the physical environment for their students to feel safe and find their own ways of acting and participating. The findings of sub-study 1 suggest that teachers do carefully

prepare, participate, observe, adjust, and respond to their students' needs during the dynamic whole-class playing process.

One of the most significant findings of the study highlights the role of entrainment as a key factor of whole-class playing, the moment of being in time here and now by the means of social and musical impulses. The experience of entrainment was connected to the student's sense of being capable, belonging, and being safe. Furthermore, entrainment was described as opening the way for students to explore social relationships and affirming their collective identity.

Another important finding of the study was the relationship between different levels of the teacher belief system and the profound role of teacher belief system in the development of student agency. This study provides insights into how teacher support influences every aspect of student agency in whole-class playing contexts and the central role of the teacher's belief system in the formation of student agency.

5.2 Sub-study 2: Students' experiences of their agency in whole-class playing

The aim of sub-study 2 was to investigate students' (N = 23) experiences of their agency in whole-class playing in order to deepen our understanding of the concept of agency in whole-class playing from the perspective of the students themselves. The study focused specifically on the students' highlighted experiences and the demonstration of agency during whole-class playing. Three intermediate themes were identified: openness, entrainment, and relational and individual resources of agency.

Theme 1, *Openness*, highlighted the ongoing negotiation of an individual's relationship with music and the willingness to engage in the musical experience, which was determined by an interplay of an individual's perceived skills, familiarity, and musical taste. This relationship was characterized by and connected with an emotional load with high and low points, vulnerability, immediacy of the moment, and the nature of sharing and being heard when experiencing as being the sound itself. The relationship with an instrument, finding music or sound amiable or aversive, and the sense of being capable of perceiving music determined whether a student actively participated or demonstrated resistance to and withdrew from the activity.

Theme 2, *Entrainment*, pointed to highly intense moments of collective focus, great team spirit, safety, and shared experiences of success. These moments were acknowledged by the students as moments they were willing to enter, achieve, and maintain. Students recognized the moments of entrainment through the sound they produced and perceived and, at the same time, as spaces of collective contribution where mistakes were not scary due to the musical ongoing texture.

Theme 3, *Relational and individual resources of agency*, included the supportive and necessary conditions that either limited or facilitated the agency of students in the whole-class playing context. The aspects of 'in the moment' physical sensations in the here and now and peers' impact through social and musical impulses, such as playing right or wrong, seemed to affect students' ability to concentrate, which appeared to be a key condition of the starting point for their agentic action in whole-class playing. Another significant factor was the teacher and the quality of multimodal support students received from their teacher as well as how the students felt the teacher was able to facilitate their experience of agency in both areas of openness and entrainment. Instructions from a teacher are an essential starting point for any agentic action of students, but the study highlighted how different individuals might experience the conditions for action in very different ways.

To sum up the findings, students' experiences of their agency in whole-class playing reach beyond the existing theories of agency and are characterized by in-time emotional experience, which is a constantly evolving relationship with music, self, and others. Additionally, students need to continuously evaluate when to feel safe and confident enough to explore something musically and socially unknown. This study suggests that the teacher plays a significant role in the formation of students' agency in whole-class playing, as the study indicates that students are aware of the meaning of instructions, help, and support received from the teacher.

5.3 Sub-study 3: Exploring agency and entrainment in joint music-making through the reported experiences of students and teachers

In sub-study 3, the aim was to explore the relationship between agency and entrainment through the reported experiences of teachers and students in joint music-making, as the two previous studies had indicated that there was something more to explore and understand in entrainment about the formation of agency in joint music-making context. Teachers and students' interview data were brought together for this sub-study. The more specific aim was to explore the ways in which agency and entrainment resource or constrain each other in joint music-making. Four intermediate themes were identified: presence, belonging, safety, and continuity.

Theme 1, *Presence*, highlighted the active way of becoming aware of the present moment, music, shared emotions, self, others, and the environment in joint music-making. Playing together was described as a strongly embodied experience, as the music produced together was felt as a resonance or vibe in the body, and it was noted how the music produced resulted in the movement of the bodies. Presence in joint music-making was described by the teachers as defusing the resistance of students and helping them to focus. Presence was described as

connecting to various aspects of musical agency, such as perceiving collectively produced music and the subject's motivation, will, and self-efficacy through intersubjective affective attunement and joint focus followed by positive emotions when entrained with others. In turn, there were feelings of disappointment if the level of contribution of peers was low.

Theme 2, *Belonging*, provided insights into both the musical and social senses of togetherness. Experiencing being part of the collective wholeness of sound and perceiving one's role musically and socially in the entity raised strong positive feelings and connected to agency in a way that experiencing entrainment had an impact on one's motivation and how one started to actively take responsibility for entering and maintaining the collaborative musical action. In turn, entrainment depends on the individual's active participation, willingness, and taking responsibility for the activity.

Theme 3, *Safety*, pointed to the interactional, relational, and musical characteristics of joint music-making that shape the social environment through musical experience. Musical texture itself creates a safe place by hiding mistakes made by an individual, which creates an opportunity to bear one's insecurity when developing competence. The findings of our study suggest that interaction in joint music-making, such as listening, responding, respecting others, and adjusting to them, is non-verbal and goes beyond verbal understanding. Experiencing entrainment gives rise to intersubjectivity and increases the sense of safety, equality, unity, peer support, and mutual trust through non-verbal dialogue that connects to agentic participation.

Theme 4, *Continuity*, indicated how the highly relational and cumulative process between teachers and students in joint music-making connects to the competence, motivation, and self-efficacy of an individual by creating possibilities for participation. Characterized not only by musical elements, musical loops, and layers, but also by instructions, support, and guidance by the teacher and the peers, this aspect in joint music-making reveals the resources and constraints of entrainment for agency. At best, entrainment offers a safe place for strengthening the sense of competence and self-efficacy and provides opportunities to freely make choices, but at worst, synchronous action creates an unpleasant loop since the opportunities to influence are so limited.

The findings of the study show the constitutive nature of the relationship of agency, entrainment, and intersubjectivity, as entrainment in joint music-making becomes an intersubjective experience when individuals aim for, achieve, and become aware of togetherness through musical experience where dialogical paths and emotional encounters take shape. Music produced in joint music-making functions as feedback, thus raising awareness of the present moment while evoking emotions, anticipation, and reflection that connect to various aspects of an individual's agency.

6   GENERAL DISCUSSION

The aim of this thesis is to contribute to the study of student agency by investigating the role of whole-class playing in music education as a platform for student agency. The journey towards this aim started from the agency research tradition in both the field of education (Biesta & Tedder, 2007; Eteläpelto et al., 2013; Priestley et al., 2015), where student agency has become an increasingly important concept (Jääskelä et al., 2020; Kangas et al., 2017; Niemi et al., 2015), and the field of music education, where musical agency has become a central concept in understanding the ways in which people interact with music (Karlsen, 2011; Ruud; 2020; Saarikallio, 2019). Sub-study 1 took the first steps in understanding the relationship between the concepts of student agency and musical agency, while sub-study 2 offered an inductive and essential viewpoint on the experiences of students. However, the findings of sub-studies 1 and 2 clearly indicated there was something more to understand and explore about the experience of entrainment, and hence sub-study 3 took the further steps in turning to music psychology research on the concepts of interpersonal entrainment (Clayton et al., 2020; Ilari et al., 2018; Trondalen, 2016) and intersubjectivity (Trondalen, 2016; Vass, 2019) to be able to understand the interdependent relationship between the process of agency and entrainment in this multidimensional context of whole-class playing.

    The findings of this thesis shed light on the holistic process of student agency in the multimodal and dynamic context of whole-class playing, and they provide insights into the ongoing interactions between teacher and students. Moreover, this thesis utilizes various concepts (Chan et al., 2022; Clarke et al., 2012), such as student agency, musical agency, entrainment and intersubjectivity from education, music education, and music psychology research as complementary, as a single theory is not adequate in exploring and understanding student agency in whole-class playing.

6.1 The characteristics of student agency in whole-class playing

In response to the first research question concerning what characterizes student agency in whole-class playing, the findings of the sub-studies indicate that student agency in whole-class playing is highly relational and interactive, musically, and socially constructed from a personal level into an in-time shared experience. Moreover, student agency in whole-class playing is dependent on the student's physical, temporal, and sociocultural starting points, and it involves the emotions of the participants. Thus, student agency in whole-class playing is not developed solely by an individual but is rather co-created through the joint affective musical process in the here and now.

6.1.1 The individual characteristics of student agency in whole-class playing

The findings documented in this thesis show that concrete physical and environmental considerations significantly affect the enactment of student agency in whole-class playing as they form the foundation for action in the here and now. Previous research has acknowledged the effect of environmental aspects on agency (Eteläpelto et al., 2013; Priestley et al., 2015), but this thesis underlines the essential impact of concrete and physical considerations in the formation of agency. If a student has, for example, pain, hunger, alertness, or different diagnoses, these immediately have an impact on the present moment and their possibilities for action. Additionally, the temporal and sociocultural starting points, meaning the previous experiences or the starting points for social and musical interaction, create an entryway through which a student steps into the joint experience. As in whole-class playing where there is literally one class of students playing together as a group, the diversity of the starting points and the range of physical sensations are surely comprehensive.

As in previous research on agency (Eteläpelto et al., 2013; Rajala et al., 2016; Skinnari, 2014), the findings discussed in this thesis underline the role of will, pointing to individual choice as a central aspect of agency. A will to act can lead to entering into experience, active participation, maintaining activity, or resisting and withdrawing from activity. However, the findings of the current study show that a student's will to act in whole-class playing is a multifaceted construct of musical and individual agentic aspects, such as self-efficacy, competence beliefs, meaning both one's ability to play and to perceive music, the possibilities to influence and choose, musical identity, musical taste, and familiarity. Similarly, within the framework of socio-cognitive psychology (Bandura, 1986, 1999), self-efficacy and beliefs of being capable form the foundation of human agency and play an influential role in motivation. However, when investigating agency in whole-class playing, which is dependent on and evolving within the relational environment, it is necessary to examine it through the sociocultural lens since socio-cognitive theory tends to disregard the role of environment and others in the realization of agency.

The complexity of the aspects affecting the will to act are shown in Figure 1. At the individual level from an agency point of view, a student in whole-class playing is always an interacting with the music agentic (see e.g., Karlsen, 2011) by perceiving the musical texture and structure and by playing and embodying the music in various ways. The study findings suggest that this interaction connects to one's relationship with music, which is an inner, ongoing negotiation and a combination of musical identity, musical taste, meaning the amiability of the sound and music, perceived skills, and familiarity that intrinsically either limit or facilitate the visible agentic action of a student. Furthermore, the experience of being able to influence and have the possibilities to choose the way of one's participation are important aspects of a student's will to act in whole-class playing, which are significant factors of participatory resources in the theorization of student agency (Jääskelä et al., 2020) as well.

The circular diagram shows "Will to act" in the center surrounded by: Competence beliefs; playing and perceiving music, Musical identity, Possibilities to influence and choose, Familiarity, Musical taste, Self-efficacy.
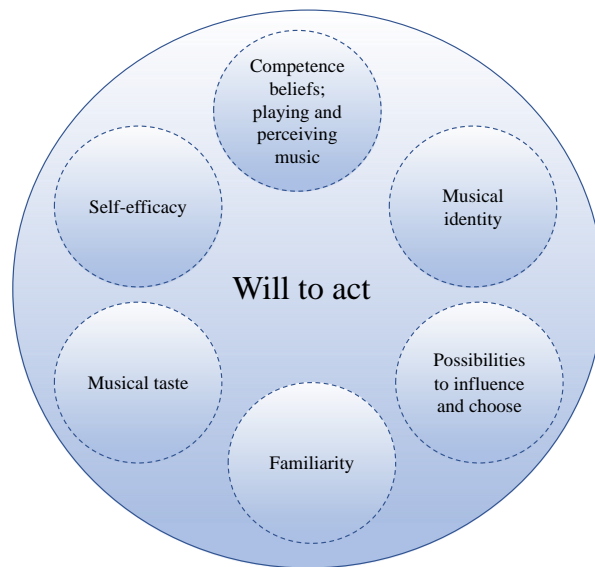
FIGURE 1   The synthesis of individual characteristics in whole-class playing

Moreover, the study findings emphasize the immediacy of the moment, the nature of being shared, and the presence of a range of emotions that take shape throughout the agentic process in whole-class playing. When producing a sound with an instrument, one experiences in a way being the sound itself, which can be very intimidating as sound is always shared and exposed to evaluation, especially if there is no sense of safety in a group. Music produced individually or collectively functions as feedback, and at best, when sounding very good, it gives rise to moments of success and positive emotions, increasing the competence beliefs and sense of safety through musical texture. At worst, when hearing nothing else but one's own mistakes, for example, the moments of failure might lead to resistance and refusing to get involved as the emotional experience is too painful to tolerate. As in previous research on agency, this thesis also recognizes how emotions are intrinsically bound to our agency and lead the way to active

participation (Eteläpelto et al., 2013; Kirby, 2020; Mameli et al., 2021; Ruud, 2020; Slaby & Wüschner, 2014).

These characteristics influence the way in which an individual participates, takes responsibility, and enters (or does not enter) into the exploration of whole-class playing. Agency in the present moment is an emotional and ongoing negotiation of different individual, social, temporal, and environmental aspects, and a moment of evaluation of whether something is worth pursuing or not (see also Eteläpelto et al., 2013; Priestley et al., 2015).

6.1.2 Relational characteristics of student agency in whole-class playing

The findings discussed here indicate that student agency in whole-class playing is highly relational and that it is shaped through collective musical and social encounters, which go beyond an individual and become something that is co-created. The relational characteristics of student agency in whole-class playing were described not only by teachers but also by students, and many times these descriptions were associated with positive emotions, intensity, and safety, where music itself played a particular role in bringing people together and creating the dialogical space. On the other hand, as students highlighted the importance of all the class members contributing to whole-class playing, individual agency was seen as an hindrance when someone was manifesting resistance in its many forms, such as withdrawing, disturbing, or not concentrating with others.

The relational characteristics of student agency are presented in Figure 2, and they include aspects of belonging, equality, exploring social relationships, affirming, and exploring collective identity, and interaction that goes beyond verbal understanding. Previous studies of student agency (Jääskelä et al., 2020; Vaughn, 2020) highlighted the role of peers and teachers as an intrinsic part of student agency in learning contexts; for example, equality and social contribution have been regarded as fundamental outcomes of agency (Vaughn, 2020). However, the study findings indicate that the relational characteristics presented in Figure 2 need to be understood not only as outcomes but as an inseparable parts of the process of student agency in whole-class playing context. These characteristics involve not only peers and a teacher but also the music itself (see also, e.g., Karlsen, 2011), which all together build the relational and environmental reality, and which may be experienced in very different ways depending on the individual.
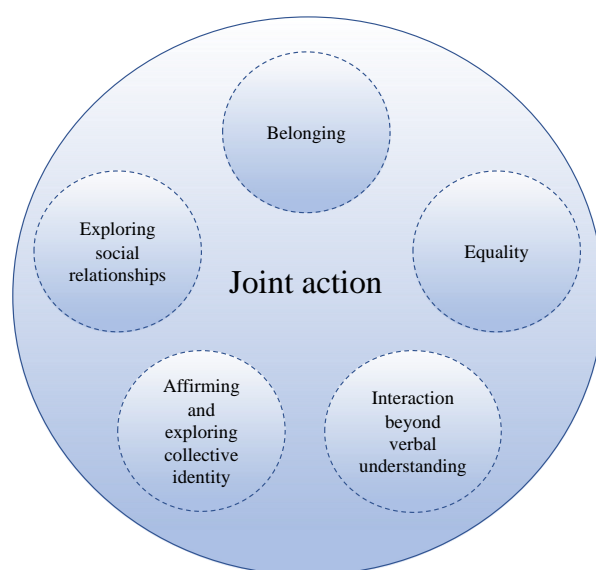
FIGURE 2   The synthesis of relational characteristics of student agency in whole-class playing

The study findings suggest that interaction in whole-class playing is enacted through music and goes beyond verbal understanding. The findings are in line with previous research showing how playing together becomes an intersubjective experience by opening up the opportunity to experience one another and become aware of each other through unspoken dialogical relationships (Stern, 2004; Trondalen, 2016; Vass, 2019). Moreover, this thesis outlines how intersubjectivity is a central aspect of the quality of agency (Damşa et al., 2010; Vass & Littleton, 2010). In joint music-making, interaction occurs musically and socially through adjusting, accepting, joining, responding to, listening to, and giving space to others. These aspects of interaction connect with the experiences of ascendancies breaking down in a positive way, a sense of being part of something bigger, exploring social relationships even in a tense social atmosphere, and the experiences of increased group spirit in a class. The relational characteristics of student agency emphasize the responsive nature of coming into presence (Biesta, 2005) in an intersubjective world where encounters with otherness and difference take place. The study findings thus contribute to the field of agency by shedding light on the intersubjective and non-verbal agentic processes for establishing and learning how to build mutual trust when in the verbal world it may be too challenging.

6.2   Role of the teacher in student agency in whole-class playing

In response to the second research question of the thesis concerning the role of a teacher in student agency in whole-class playing, the findings of the sub-studies

are in line with previous studies (Niemi et al., 2015; Ruohotie-Lyhty & Moate, 2015) as they indicate how the teacher is a key participant in the formation of student agency. Furthermore, the findings align with previous research about teacher belief systems (Spruce et al., 2021; Turner et al., 2009), as they suggest that the three levels of teacher belief systems are interrelated; teacher's values affect how a teacher actually teaches and acts during the lessons, and how the interpretations made through observing the students affect, for example, the actions of a teacher. Based on these findings, it is clear that teachers do carefully prepare, actively participate, support their students in various ways, adjust their teaching according to students' needs, and are responsive to their students both in musical and verbal ways.

The findings of sub-study 1 indicate that teachers see themselves as facilitators in whole-class playing contexts who offer support for their students by enabling the individual ways for their participation in joint musical action. The values teachers shared in the interviews were connected to offering their students a safe atmosphere, sense of belonging, and social affirmation in the context of whole-class playing. We found that these values are implemented by directing supportive multimodal actions, such as involving students to plan the lessons, asking their opinions, letting them choose their instruments, or providing reasonable goals for action, using visual auxiliary materials, accompanying and guiding them to perceive music by listening, and giving instructions in musical ways to increase students' opportunities for participation, as well as to build trust and interest. Teachers acknowledged that a student's interest is a central aspect in how a student participates but also acknowledged that a student's interest is a multifaceted construct of several factors that are essential in student agency, such as competence beliefs regarding perceiving and playing music, self-efficacy, musical identity, and possibilities to influence and choose. The findings are in line with those in earlier literature (Jääskelä et al., 2020) in respect to the interrelated nature of different aspects of student agency. However, throughout the interviews, teachers described various ways of supporting the different aspects of their students' agency when guiding their students towards and through entrainment, which was considered a key factor in the success of whole-class playing.

The findings of sub-study 2 show that students were aware of the efforts of their teacher and their teacher's role in the process of their learning in whole-class playing. The students considered their teacher as a supporter and facilitator for enhancing their learning, and the findings verify the students' awareness about the relationship between the teaching–learning situations and their own agentic role in these situations. The students' descriptions of instances where the teachers were encouraging them, offering options for participation, facilitating space for concentration, providing space for possibilities to influence and choose, and giving musical support in perceiving and playing music show how teacher support influences most of the aspects of student agency in whole-class playing.

The study findings support previous research (Jääskelä et al., 2020; Juutilainen et al., 2018) on how the role of a teacher and an emotionally safe atmosphere are central in the formation of student agency. If students know that they

can trust their teacher, ask for help, and get support, their agency is more likely to be enhanced. The findings also emphasize the role of instructions and goals for action set up by a teacher as an essential starting point for any kind of agency and action. The emotional climate, which can significantly facilitate or limit the chance of being agentic, may change from safe to unsafe if instructions are not clear enough. Moreover, as emotions are an important factor influencing agency (Eteläpelto et al., 2013; Kirby, 2020; Mameli et al., 2021; Ruud, 2020; Slaby & Wüschner, 2014), the role of an emotionally safe atmosphere in learning situations is essential.

6.3   Entrainment as a lens in exploring student agency

Based on the findings of sub-studies 1, 2, and 3, as a significant contribution to the field of research on agency, this thesis suggests that the experience of entrainment is a significant characteristic of student agency, as it functions as a link between individual and collective dimensions of student agency in whole-class playing. Entrainment goes beyond an individual without losing the individual, but it also goes beyond what we understand as collective in a shared environment. Entrainment is another level of being, meaning that it is co-created, in-time, and dependent on the individual contribution and that it results in becoming a collective one. Thus, entrainment, in a way, cannot be considered only as a collective aspect of agency, as it is a matter of an individual becoming a presence but, at the same time, disappearing into a shared sense of we-ness. As a way of drawing the findings of the studies together, Figure 3 illustrates the whole-class playing context as a platform for student agency based on all three sub-studies presented before. The starting points of an individual form the basis for an individual to step into the experience of whole-class playing, which, according to the findings, is characterized as an in-time, highly emotional, and shared experience. The previously presented characteristics of student agency, a will to act and joint action, overlap as the experiences linked to the individual side affect the collective and vice versa, affecting the participation activity and the ease of participating in the moment.

In whole-class playing, the experience of entrainment is a conscious, cumulative, musically, and socially constructed process where music itself has a particular role as a form of feedback and as a resource for an individual. However, there are complex aspects, both musical and social, which may constrain so-called "positive outcomes" of agency and lead to withdrawal and resistance, which, likewise, are manifestations of agency (Skinnari, 2014). The findings of these studies suggest that entrainment can be experienced in very different ways, as constraining or facilitating, depending on the starting points of an individual and the experience of the opportunities and possibilities for action in the presence. Teacher support reaches every aspect of student agency in whole-class playing, and the physical and material environment sets its constraints and

affordances for the opportunities for agency, creating the conditions where agency can or cannot be achieved.
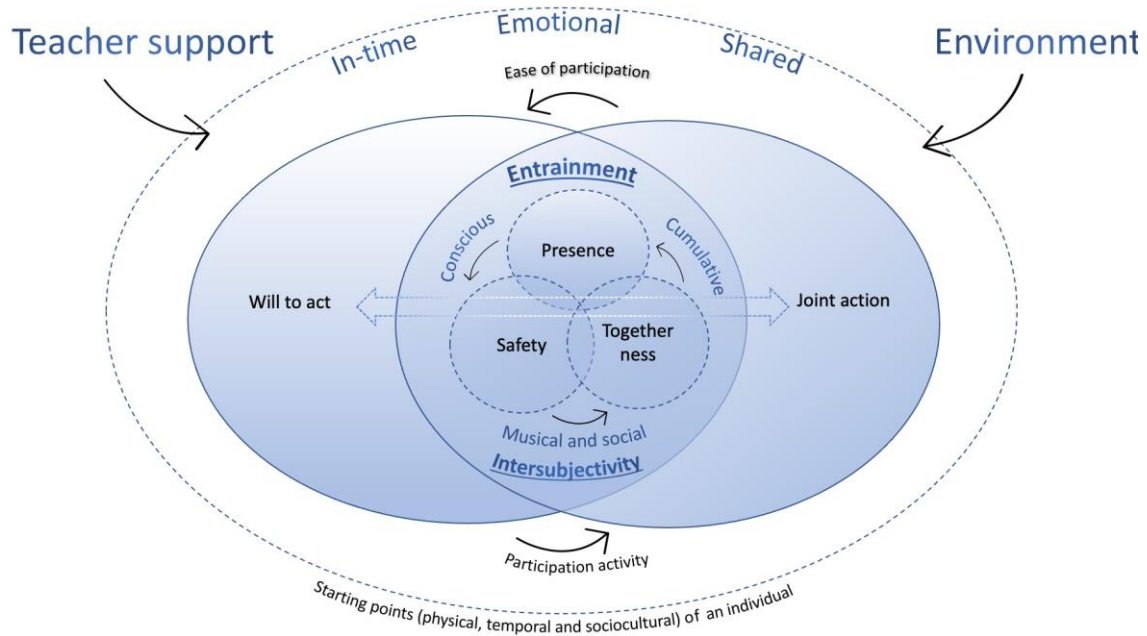

FIGURE 3   The synthesis of aspects of student agency in a whole-class playing context

However, it is notable that, as shown in sub-study 3, which focused on the social aspect of entrainment, the experience of musical entrainment intertwines with the intersubjectivity as the findings emphasize the active feeling, sharing, and becoming aware of the present moment collectively through bodies and the musical experience where affects take shape through unspoken interaction. The experience of entrainment in whole-class playing becomes an intersubjective experience, meaning that it is not only an opportunity to be present but also to experience each other through unspoken dialogue that goes beyond verbal understanding and to create a sense of safety and togetherness in the here and now. Thus, the experience of entrainment expands consciousness by engaging an individual in a present moment through mind and body. This supports the understanding of intersubjectivity (Trondalen, 2016; Vass, 2019) in sociomusical contexts, but it also connects with the subject-centered sociocultural approach to agency, which emphasizes the role of emotions (Eteläpelto et al., 2013; Kirby; 2020; Mameli et al., 2021; Ruud, 2020; Slaby & Wüschner, 2014) and the importance of a safe atmosphere (Juutilainen et al., 2018; Jääskelä et al., 2020) in the process of agency in learning contexts. Moreover, the nature of the experience of entrainment connects to what Biesta (2005, 2021) argued about agency in learning contexts. According to him, agency becomes realized through the relative and intersubjective reality "in" and "with" the world, where an individual "becomes into a presence" if there is the will to take a risk to encounter otherness and to see and respond to what is different.

As agency is negotiated and experienced through the possibilities offered by the temporal, relational, and environmental reality (Biesta & Tedder, 2007; Eteläpelto et al., 2013), using entrainment as a lens offers a novel viewpoint in exploring student agency in whole-class playing. Whole-class playing and the experience of entrainment open the way for an individual to recognize, become aware of, and investigate their unique ways of acting and participating through music. In addition to the individual level, whole-class playing opens the way to explore social relationships and establish the sense of "us" through musical encounters and perceiving the tightness or looseness of entrainment, which gives rise to positive feelings that further enrich the sense of togetherness. The study findings provide insights into how perceiving oneself as being part of a musical and social entity gives rise to strong positive emotions of enthusiasm if succeeding, which reinforces the will to enter or maintain the activity.

Moreover, the findings of study 3 suggest that music and joint synchronous music-making function as an invitation for agency of an individual, creating a potential environment and an opportunity for participation by bringing people together in the present moment through entrainment. However, the will and agentic participation of an individual are needed for such an activity and entrainment to even exist. The experience of entrainment was acknowledged and described by the teacher and student participants when they shared their agentic experiences of whole-class playing. According to the findings, the experience of entrainment simultaneously affected different aspects of student agency in many ways, such as by providing a relationally safe atmosphere, peer support, and self-efficacy and competence beliefs. Previous research has indicated that being part of social and intersubjective collaborative action forms a base for one's experiences of meaning and subjectivity (Biesta, 2005; Trondalen, 2016), and this thesis also reinforces the understanding of how being part of whole-class playing actually allows one to be someone. Furthermore, this thesis supports the view that there are some things that can be given meanings in a verbal world, but which can never replace the experience of meaning at the non-verbal level (Trondalen, 2016). The experiences of meaning are at the core of human agency (Eteläpelto et al., 2013).

6.4 Practical implications of facilitating the agency of students in whole-class playing

Sub-study 1 explored teacher beliefs of students' agency in whole-class playing. As teachers have a significant impact on their students' agency (Niemi et al., 2015; Ruohotie-Lyhty & Moate, 2015; Vaughn, 2020) and as teachers' belief systems drive the way teachers act, support, and observe their students in everyday classrooms (Gallimore & Tharp, 1990; Spruce et al., 2021; Turner et al., 2009), the findings of the study suggest that it is fundamental to prepare a teacher to actually facilitate their students' agency in whole-class playing. To support teachers in

understanding the construction of student agency in a complex and multimodal learning environment, whole-class playing would require these themes to be included in teacher education and in-service teacher programs. However, this thesis suggests that it is not only the information and offering of verbal meanings that should be brought accessibly to teachers, but also the experience of joint music-making itself, as only then, through personal experience, is it possible to give meaning to actual experience.

This thesis offers a practical tool for music teachers to reflect upon their beliefs and actions in the music classroom, increase their knowledge about the agency of their students, and reflect on their personal experiences of joint music-making. By increasing their knowledge of student agency, and especially through allowing students to openly and confidently express their experiences, a teacher is able to be aware of students' efforts when they are being agentic and to acknowledge the moments when a student is endeavoring to dialogue with a teacher to make a change in their situation. Otherwise, it is possible that a teacher will not see or understand how the student is aiming at increasing their sense of agency, and as a result, the teacher can end up limiting the agency of a student. Thus, understanding the agency of a student in a certain context offers possibilities in developing novel and transformative pedagogical approaches in classrooms, but also increasing the ways to support and be responsive to students. The study findings suggest that striving for a responsive, supportive, and sensitive way of teaching functions as a significant resource for student's agency. However, it is not only about teachers' belief systems but also about increasing the awareness of students about their own agency, and, for example, the meaning of values and emotions, in different learning contexts. This can be done simply by verbalizing the individual and collective aspects of agency for students and the possibilities of the environment and by asking students to reflect on their feelings, experiences, thoughts, and actions. This awareness can strengthen the agency of a student across different learning contexts, but there needs to be a time and place where a student becomes aware of these issues.

The present thesis provides several practical implications for informing the ways in which teachers can support their students' agency throughout whole-class playing. The findings indicate that both individual and relative dimensions of student agency are connected and affect each other, and that every student is a unique individual whose background is different. Furthermore, immediate concrete and physical considerations are an intrinsic aspect of agency in the here and now. Thus, every individual's challenges and strengths are different, and the support needed is individual. However, teachers can try to incorporate the individual, relational, or environmental aspects of agency where the support is especially needed. Also, a teacher can transform the pedagogy of the classroom in a way that facilitates the agency of students, providing different ways for participation, involving students in planning the lessons, getting to know and helping students to reflect on their musical identity and musical taste, and offering adequate support in increasing students' self-efficacy and competence in perceiving and playing music. Furthermore, verbalizing the non-musical aspects of joint

action in whole-class playing, such as belonging, the chance to explore and affirm social relationships and identity, and the possibility to interact at another level, can significantly strengthen the sense of trust.

The study findings show the distinct potential of whole-class playing as a unique platform for student agency, where individual and relative dimensions of student agency are connected through the experience of entrainment. The cumulative process of entrainment and its relationship with agency was revealed in sub-study 3, which provided both theoretical and practical knowledge on the potential of entrainment as a tool for establishing both individual and relative aspects of students' agency in whole-class playing, as it functions as a glue between these dimensions. This thesis provides insights into how students are aware of entrainment and how it affects their sense of safety. The path to a safe place of entrainment is, however, experienced as risky and vulnerable. Therefore, music educators should pay extra attention to supporting students on this path, where they can go through the emotional struggle with feelings of insecurity and ambivalence. Nevertheless, this thesis suggests that the experience of entrainment is a powerful medium in fostering agency. Although it sometimes is a challenge to get a whole class of students to play together at the same time, especially if they are experiencing social fear, and even though it takes a lot from a teacher and students to do so, it is actually something that should be done as much as possible in everyday music classrooms according to our study findings. These findings also show that the experience of entrainment in whole-class playing results in very positive outcomes for students' agency and has great potential in enabling social cohesion. This thesis emphasizes whole-class playing as a learning environment where an individual has the chance to *become into a presence* (Biesta, 2005) at another level of being, and learn how to exist "in" and "with" the world (Biesta, 2021) through entrainment. The whole-class approach has the potential to educate the students about what Biesta (2021) has referred to as the need for an ecocentric approach in educating children to live in the future world. Thus, I would fervently encourage teachers to start with even seemingly little things, like body percussions as a warmup at the beginning of every lesson, which has been proven to support the development of students' agency.

6.5   Ethical considerations

The current thesis complies with the guidelines of the Finnish National Board on Research Integrity (2019). Before contacting the underage student participants, the ethics committee of the University of Jyväskylä was contacted for the evaluation of the need for an ethical review to be carried out for the study. However, consent from both teacher participants and student participants' guardians was enough to comply with the guidelines of the Finnish National Board on Research Integrity (2019), and therefore no ethical review was required. Permission for the study was obtained from the municipal school authorities and the principals of the schools involved, and both teacher and student participation was voluntary.

Before data collection, I informed the teacher participants, as well as the student participants and their guardians, about the purpose of the study, methods, and ethical commitments, after which oral consent was given by the students, and written consent was signed by their guardians and teachers. Prior to the student interviews, the author of the thesis also visited the students' class to give them information, such as explaining that the questions would be about their experiences of joint music-making, and to reassure them that there would be no need to prepare for the interviews. The students were also encouraged to be honest when answering the questions and that they would be able to ask questions.

The participants in the study were able to discontinue their participation or withdraw their consent at any time. Identifying information was anonymized in the transcribed text, and the participants were given random ID numbers to ensure their anonymity. The privacy of the participants was carefully protected according to the guidelines of the University of Jyväskylä.

6.6   Limitations and future directions

This thesis has limitations that need to be considered. The first concerns the interviews as the entire dataset of the thesis without performative data, meaning video recordings, which could have provided another viewpoint in investigating how the experiences and beliefs become enacted in the classroom. In addition, it has to be acknowledged that it is easier for some people to talk about their experiences and thoughts, and some student participants shared their experiences rather briefly. Furthermore, self-reports can be influenced to some extent by social desirability. In future research, different interview data collection methods, such as conducting multiple interviews individually, in pairs, and in groups, and the use of ethnography work, such as observations and performative data, would mitigate the issue of social desirability and be beneficial in gaining a deeper understanding of student agency in whole-class playing. However, the interview data provided insights into the diverse backgrounds and experiences of different individuals. Second, the studies documented here explored student agency and entrainment through the experiences of the participants, but they did not measure the quality of entrainment or its nature. In the future, mixed method work, including interviews but also the measurement of rhythmic entrainment, would be important. Third, a larger sample size would provide a more diverse picture of the experience of students and teachers, as participants in the studies comprised 11 teachers and one class of 23 students taught by one teacher. However, the data provided a broad picture of the experiences of different individuals, and saturation of the data was reached. Finally, this thesis focuses specifically on the Finnish educational context, and research conducted in different cultural and education systems could possibly provide somewhat different findings. Thus, future research could include teachers and students from different cultural and educational contexts to see whether the findings are reflective, thus creating possibilities for comparison.

In future research, conducting studies with longitudinal design would help to depict the development of agency in whole-class settings over time by re-interviewing the students and teachers during a school year. In addition, it would be worthwhile exploring whether the experience of entrainment is present in other learning contexts, as this thesis has shown how the experience of entrainment connects with different aspects of student agency. Furthermore, future studies are needed to clarify the relationship between concepts of agency and entrainment to increase the understanding of the process of agency in sociomusical contexts, and possibly beyond. This understanding is needed to create new pedagogical approaches and classroom environments that would enable and facilitate students' possibilities for agency. As our study findings stress the importance of becoming aware of and sensing others in time through the mind and body in an educational context, more research on the relationship between agency and embodied cognition would be of value. Moreover, as the findings described here provide substantial evidence that connecting to other people through the experience of entrainment in whole-class playing gives rise to positive emotions by engaging people in the present moment and by enhancing the feelings of belonging and safety, further studies on the relationship between agency in sociomusical contexts and well-being would be extremely worthwhile.

7 CONCLUSIONS

The present thesis was designed to contribute to the field of student agency by increasing the understanding of the enactment of student agency through teacher beliefs and students' experiences in the context of whole-class playing, which has received little attention to date. First, the study findings indicate how student agency in whole-class playing is dependent on the student's physical, temporal, and sociocultural starting points and how it is musically and socially constructed and characterized as an in-time relational and interactive experience at an individual but also collective level, featured by emotions. Second, the findings provide insights into how teachers are a significant factor in the formation and development of their students' agency through the interrelated beliefs and activities they carry out with their students. The findings underline the multimodal nature of support students get from their teachers and the high degree of pedagogical sensitivity required from a teacher when guiding their students towards and through whole-class playing. Third, the experience of entrainment was found to be connected to various aspects of agency as the experience of entrainment becomes an intersubjective experience, forming another level of being that goes beyond what we understand as individual or collective. Moreover, teachers and students acknowledged the experience of entrainment. It could be consciously learned and aimed at, but the will and the contribution of an individual are required for entrainment to exist.

Based on the findings, it can be concluded that whole-class playing offers a multimodal platform not only for an individual to recognize and investigate their own ways of participating and acting, but also for a group of people to explore the social relationships and collective ways of being together through musical encounters that are characterized by entrainment. It would be valuable for teachers to become more aware of the benefits of whole-class playing and entrainment and the delicate construct of agency in order to have the ability to support their students through the unknown experience of encountering self and others through joint musical activity.

YHTEENVETO

Tässä väitöstutkimuksessa tarkastellaan oppilaan toimijuutta yhteismusisoinnissa alakoulun musiikinopetuksessa. Toimijuus on tässä tutkimuksessa määritelty aiemman kasvatustieteellisen tutkimustradition mukaisesti moniulotteiseksi käsitteeksi, jonka keskiössä ovat yksilön omat kokemukset, tahto, tunteet, tarkoitukset sekä merkitykset eri konteksteissa (Eteläpelto ym., 2013), ja jota tulee tarkastella jatkuvassa muutoksessa olevana prosessina suhteessa aikaan, sosiaalisiin sekä fyysisiin ympäristöihin (Biesta & Tedder, 2007; Priestley ym., 2015). Kasvatustieteellisen näkökulman lisäksi toimijuutta on tässä tutkimuksessa tarkasteltu myös musiikkikasvatuksen tutkimuksen määritelmien mukaisesti. Tässä näkökulmassa musiikillinen toimijuus nähdään yksilön tai yhteisön tavoista olla vuorovaikutuksessa musiikin kanssa, jolloin yksilön on mahdollista tulla tietoiseksi niin omista kuin myös sosiaalisista sekä aineellisista resursseistaan (Karlsen, 2011; Ruud, 2020). Musiikillisen toimijuuden määritelmän keskiössä on musiikillisten näkökulmien lisäksi myös ulkomusiikilliset lopputulemat sekä seuraukset (Juntunen ym., 2014; Karlsen, 2011; Saarikallio ym., 2019). Vaikka toimijuutta on aiemmin käsitelty eri tutkimustraditioissa, ei oppilaan toimijuutta olla tarkasteltu yhteismusisointikontekstissa. Lisäksi ymmärrys oppilaiden kokemuksista heidän toimijuudestaan puuttuvat. Tämä tutkimus tuo yhteen kasvatustieteen, musiikkikasvatuksen ja musiikkipsykologian näkökulmat tarkastelemalla niin opettajien kuin oppilaidenkin kokemuksia toimijuudesta yhteismusisoinnissa.

Tutkimuksen tavoitteena oli selvittää, mitä ominaispiirteitä oppilaan toimijuudella on yhteismusisoinnissa ja millainen on opettajan rooli oppilaan toimijuuden rakentumisessa. Lisäksi selvitettiin, mitä uusia näkökulmia tahdistumisen kokemuksen ymmärtäminen tuo oppilaan toimijuuden tarkastelulle yhteismusisoinnin kontekstissa. Väitöskirja koostui kolmesta haastatteluaineistoon perustuvasta osatutkimuksesta, joiden osallistujina olivat 11 opettajaa, joista kaikki opettavat alakouluissa musiikkia, sekä 23 oppilasta yhdeltä 6. vuosiluokalta. Opettajien yksilö- ja oppilaspareina totutetut puolistrukturoidut haastattelut analysoitiin sisällönanalyysimenetelmin käyttäen sekä abduktiivista että induktiivista lähestymistapaa.

Ensimmäisessä osatutkimuksessa tarkasteltiin opettajien käsityksiä oppilaiden toimijuudesta kolmen uskomusjärjestelmän tason, eli arvojen ja uskomusten, toiminnan sekä havaintojen, kautta. Lisäksi osatutkimus pyrki lisäämään ymmärrystä oppilaan toimijuuden ja musiikillisen toimijuuden välisestä suhteesta. Tutkimuksen tulokset osoittivat, että oppilaan toimijuus yhteismusisoinnissa on erottamattomasti yhteydessä yksilön moninaisiin sosiokulttuurisiin, fyysisiin sekä aikasidonnaisiin lähtökohtiin. Oppilaan halu ja motivaatio toimia sekä osallistua yhteismusisointiin muodostuivat keskeisiksi toimijuuden ominaispiirteiksi, mutta niihin vaikuttivat useat tekijät niin musiikillisista pystyvyysuskomuksista, minäpystyvyydestä, musiikillisesta identiteetistä kuin myös mahdollisuuksista valita ja vaikuttaa omaan ja yhteiseen tekemiseen. Tulokset osoittivat niin turvallisuuden tunteen, vertaisten vaikutuksen ja tahdistumisen

kokemuksen kuin opettajan oman uskomusjärjestelmän olevan keskeisessä roolissa oppilaan toimijuuden muodostumisessa yhteismusisoinnissa.

Toisessa osatutkimuksessa tarkasteltiin 6.-luokkalaisten oppilaiden kokemuksia toimijuudesta yhteismusisoinnissa. Tuloksissa korostuivat oppilaiden kokemukset haavoittuvuudesta, tilanteen tunnepitoisuudesta sekä musiikin välittömästä luonteesta. Lisäksi tulokset korostivat yksilön suhdetta musiikkiin ja halua kiinnittyä musiikilliseen kokemukseen, sekä tahdistumisen kokemuksesta löytynyttä turvaa, yhteenkuuluvuuden tunnetta sekä jaettuja onnistumisen kokemuksia. Toisen osatutkimuksen tulokset osoittivat, kuinka oppilaat ovat tietoisia ohjeiden merkityksestä sekä opettajan multimodaalisista tavoista auttaa ja tukea oppilaitaan.

Kolmannessa osatutkimuksessa tarkasteltiin toimijuuden ja tahdistumisen välistä suhdetta yhteismusisoinnissa opettajien ja oppilaiden kokemusten kautta. Lisäksi pyrittiin selvittämään, millä tavoilla toimijuus ja tahdistuminen edesauttavat ja rajoittavat toisiaan yhteismusisoinnissa. Tulokset osoittivat toimijuuden ja tahdistumisen välillä ilmenevän vastavuoroisen yhteyden, mikä tarkoittaa sitä, että tahdistumisen kokemus vaikuttaa positiivisesti useisiin toimijuuden osatekijöihin, mutta samanaikaisesti oppilaan täytyy haluta sekä pystyä toimimaan, jotta tahdistuminen ylipäätään voi toteutua. Tahdistuminen yhteismusisoinnissa muuttuu intersubjektiiviseksi kokemukseksi, kun yksilöt pyrkivät, saavuttavat ja tulevat tietoiseksi yhteenkuuluvuudestaan ja yhteisesti jaetuista tunteista musiikillisen kokemuksen seurauksena avautuvan abstraktin ja nonverbaalin dialogin avulla. Lisäksi tutkimuksessa selvisi, kuinka musiikki itsessään ja sen havaitseminen toimii palautteena yksilölle lisäten tämän tietoisuutta, tunteita, reflektiota ja halua osallistua toimintaan, mikä kytkeytyy useisiin toimijuuden osa-alueisiin. Toisaalta tuotetun musiikin havaittu laatu aiheutti pettymyksen tunteita ja se yhdistettiin suoraan siihen, etteivät vertaiset halunneet panostaa yhteiseen tekemiseen. Kaiken kaikkiaan osatutkimuksen tulokset viittaavat toimijuuden olevan vahvasti vuorovaikutukseen ja sosiaalisuuteen perustuvaa yhteismusisoinnissa, jossa tahdistuminen näyttelee aivan erityistä roolia toimijuuden muodostumisessa.

Näiden kolmen osatutkimuksen tuloksista kävi ilmi, kuinka oppilaan toimijuus yhteismusisoinnissa riippuu oppilaan moninaisista lähtökohdista, ja kuinka toimijuus rakentuu niin musiikillisesti kuin sosiaalisestikin. Oppilaan toimijuutta yhteismusisoinnissa tulee tarkastella jatkuvassa muutoksessa olevana tunnepitoisena prosessina suhteessa sosiaaliseen, fyysiseen ja ajalliseen ympäristöön niin yksilö- kuin kollektiivisella tasolla. Toiseksi tulokset osoittivat, kuinka opettajalla ja hänen uskomusjärjestelmällään on suuri merkitys oppilaan toimijuuden muodostumisessa ja kehittymisessä. Tulokset korostavat opettajan tukevan oppilaitaan multimodaalisesti yhteismusisointitilanteissa ja osoittavat, kuinka opettajalta vaaditaan erityistä hienotunteisuutta pystyäkseen kohtaamaan oppilaita eri lähtökohdista, tunnistamaan heidän tuen tarpeensa ja kyetäkseen kuljettamaan oppilaita kohti ja läpi tahdistumisen kokemuksen. Kolmanneksi tämän väitöskirjan tulokset osoittivat, kuinka tahdistumisen kokemus on kytköksissä useisiin toimijuuden osa-alueisiin ja kuinka tahdistuminen

muodostaa oman ulottuvuutensa tarkastella toimijuutta yksilö- ja kollektiivisten ulottuvuuksien lisäksi. Yhteenvetona väitöskirjatutkimuksen tulokset antoivat tärkeää tietoa siitä, kuinka yhteismusisointi ja tahdistumisen kokemus tarjoaa oppilaalle mahdollisuuden tunnistaa ja tutkia omia tapojaan osallistua ja toimia, mutta myös koko ryhmälle mahdollisuuden tutkia sosiaalisia suhteita sekä tapoja olla yhdessä verbaalisen ulottuvuuden lisäksi. Toimijuus yhteismusisointikonteksteissa tulisi sisällyttää niin opettajankoulutukseen kuin myös musiikkikasvatuksen koulutuksiin, mikä mahdollistaisi uusien pedagogisten lähestymistapojen kehittämisen ja toteuttamisen. Lisäksi väitöskirjan tulokset rohkaisevat pedagogeja tuomaan opetukseensa enemmän matalan kynnyksen tahdistumisen kokemuksia oppilailleen.

Väitöskirjassa tarkasteltiin oppilaan toimijuutta ainoastaan kokemusten ja uskomusten kautta. Tulevaisuudessa olisi syytä tutkia haastattelujen lisäksi videoaineiston avulla yhteismusisointitilanteita, jotta saataisiin tietoa siitä, kuinka haastatteluissa ilmi tulleet käsitykset ja tulkinnat tulevat esille itse toiminnassa. Lisäksi olisi tärkeää tutkia lisää toimijuuden ja tahdistumisen välistä suhdetta, sekä sitä, onko tahdistumisen kokemus läsnä myös muissa oppiaineissa ja kuinka se ilmenee.

POSTLUDE

Remember the discussion between Elli and her mother in the Prelude of this thesis? I encourage you, dear reader, to take another look at the quote. Although the age of Elli is different from the students that took part of this study, it still speaks the same profound language as do the findings of this study and unfolds the ways, meanings, shared emotions, and the special role of music in uniting people. As the quote shows, even young children are active agents when they use music as an invitation for reaching each other and to seek ways through music to be understood when in verbal world it is impossible. But what is surprising, at least to this writer, is that Elli is so conscious about how they do it and how it happens.

Thank you, dear reader, for joining me on this journey to learn more about student agency in whole-class playing. I leave you with a quote from the famous Finnish composer Jean Sibelius to inspire you as you continue your own journey:

"Music begins where the possibilities of language end."

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APPENDICES

Appendix 1

The questions used in the student interviews in this study are as follows:
- Do you listen to music in your free time, and if so, what do you listen to?
- Is there an instrument that you especially enjoy playing, and why?
- Is there an instrument that you don't enjoy playing, and why?
- If you begin to play a new song with your class, what do you usually do, and how does the process go?
- When you begin to play a song with your class, what are the things encouraging you to participate?
- Are there things that make you not want to participate?
- In your opinion, what is the nicest thing when your whole class plays and sings together? Is there something that makes it not so nice?
- What does your teacher do when you start to play together as a class?
- How does your teacher teach you?

Appendix 2

The questions used in the teacher interviews in this study are as follows:
- What kind of experiences do you have of playing as a group in your personal life, and what kind of meanings do they have for you?
- In your opinion, what affects how an individual student participates in joint music-making?
- In your opinion, what affects how a whole group of students starts to play together, and how is the joint music-making situation built?
- How do you support an individual student and the whole group in the joint music-making situation as a teacher?
- Is there something concerning joint music-making we have forgotten to talk about in addition to what we have discussed already?
- Is there something you want to mention or talk about?

ORIGINAL PUBLICATIONS

I

TEACHER BELIEFS ABOUT STUDENT AGENCY IN WHOLE-CLASS PLAYING

by

Eveliina Stolp, Josephine Moate, Suvi Saarikallio, Eija Pakarinen,
and Marja-Kristiina Lerkkanen (2022)

Teacher beliefs about student agency in whole-class playing

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Teacher beliefs about student agency in whole-class playing

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ABSTRACT

This study explores music teachers' beliefs of student agency in whole-class playing and investigates what characterises student agency through teachers' values, actions and observations within this unique multimodal and -dimensional learning environment. Our abductive analysis of 11 interviews reveals that the role of teacher support is significant in enacting students' agency. This study provides insights into student agency through the eyes and actions of teachers within the context of whole-class playing and suggests that the enactment of different aspects of student agency is an essential feature necessary for whole-class playing to succeed.

Introduction

Spruce, Marie Stanley, and Li (2021) highlight teachers' belief systems about the nature of music and music educational knowledge, about what it is to be a learner, teacher and musician, and about the most effective pedagogical relationships within music educational settings play a significant role in how they teach. Teachers' beliefs affect their behaviour, which influences their students' learning and further reinforces their own belief systems (Turner, Christensen, and Meyer 2009). Teachers' beliefs and behaviour can also be expected to impact the enactment of student agency. To date, a limited amount of research has investigated whole-class playing as a forum for student agency using teachers' beliefs. In the present study, we explore music teachers' beliefs on students' agency in whole-class playing to gain a better understanding of the potential that whole-class playing can offer for students' agency within and potentially beyond music education.

The study was conducted in Finland, where the national core curriculum for basic education emphasises a learner-centred approach (Juntunen et al. 2014). In the Finnish curriculum, music is presented as an opportunity for musical activities and methods to promote not only musical but also social skills, well-being, imagination and cultural understanding (Finnish National Agency for Education 2016). An important method in Finnish music education is whole class playing (WCP) which involves every student in a classroom playing different instruments together in music lessons as a part of the timetabled curriculum. WCP in Finnish music education, for example, does not offer private instrumental tuition but involves every student, despite their perceived skills, to play music as a group by exploring different instruments, musical styles, relationships and ways of participating in the mainstream music classroom. Moreover, Finnish students are encouraged to work with different instruments, rather than developing mastery of one instrument alone. WCP is akin to rhythmic music pedagogy (RMP) as both approaches promote collective, embodied

engagement with music through the strategic use of voice, body and percussion instruments (Hauge 2012). In addition to WCP and RMP, whole-class ensemble tuition programme currently underway in English schools supplements classroom-based music education offering all pupils new musical experiences and the opportunities to learn musical instruments (Fautley and Daubney 2019). The goal of these approaches is to actively bring a whole class of students through music to experience entrainment, that is being together 'in the moment' and playing at the same time (Clayton 2012). Entrainment is a complex interactive process among people encompassing not only an individual's metric perception and coordination and the coordination of individuals in a group, but also negotiations of power relations and an ability to adapt to both musical and social entities by the means of music.

Whole-class playing is, however, challenging for teachers and students as it calls for engaging and actively participating in the exploration of something that is musically and socially unknown (Juntunen et al. 2014). For teachers, it requires a high level of musical competence, knowledge of pedagogical approaches and the ability to pay attention to the whole class of students within a unique, constantly changing and intensive situation (Schiavio, K'ssner, and Williamon 2020). For students, it requires not only social or complex coincidental cognitive skills, such as perception, symbolic activity and motor performance, but also active participation and the ability to adapt their behaviours to musical entirety in synchrony with others (Clayton 2012; Karlsen 2011). While the importance of students' active participation and agency in different learning environments has become increasingly acknowledged in the twenty-first century (Vaughn 2020), student agency in music education has received little attention to date.

Moreover, music education is significantly limited with the current emphasis on musical outcomes and, therefore, has resulted in one-sided research (Karlsen 2011) that fails to develop a deeper understanding of learners' experiences and teaching practices. In this study, we explore music teachers' beliefs as a way to gain insights into students' agency in whole-class playing. In another study, we focus on student experiences of their agency in WCP. However, as teachers are key participants in the formation of student agency (Ruohotie-Lyhty and Moate, 2015) this study uses teacher beliefs (Turner, Christensen, and Meyer 2009) as a starting point for our exploration. The pedagogical values that teachers hold, for example, provide insight into their beliefs about what students are capable of and how the relationship between their subject and the students can be developed. The actions that teachers implement in classrooms provide insight into their enacted beliefs with regard to what is possible within this environment, with these students. The observations of teachers provide insight into the ongoing interactions in classrooms, how students are participating, interacting with each other, with the teacher and with the subject (Gallimore and Tharp 1990). Therefore, in the present study, we explore music teachers' beliefs about students' agency in whole-class playing.

Student agency from two theoretical perspectives

In recent years, the concept of agency has provided educational researchers with an important conceptual tool with which to examine different aspects of and relationships between learning, teacher and student experiences and development (Jääskelä et al. 2020; Vaughn 2020). In this study, our thinking was informed by two theoretical perspectives, socio-cognitive and sociocultural, on agency in order to explore student agency as an *individual, relational, collective* and *environmental phenomenon* in educational settings (see Table 1).

Socio-cognitive approach

Within the framework of socio-cognitive psychology, the agency is often presented as an individual property which includes competency, determination, intentionality, self-efficacy, motivation, self-management and self-esteem. From this perspective, self-efficacy is the most central and forms

Table 1. Key characteristics of student agency from two theoretical perspectives.

Caracteristics of agency	Socio-cognitive theory (Bandura 1986, 1999)	Sociocultural theory (Biesta and Tedder 2007; Jääskelä et al. 2020; Ruohotie-Lyhty & Moate, 2015)	Socio-musical approach to agency (Karlsen 2011; Ruud 2020)
Individual	• Agency is the individual capacity to influence one's functioning and life circumstances: self-efficacy, competence beliefs, motivation, and engagement.	• Human experience inseparable from social process	• Individual level of being in interaction with music: self-regulation, thinking, matters of being, self-protection, shaping self-identity, developing music-related skills
Relational	• Proxy action: relies on others to act to secure desired outcomes	• Agency is relational and co-produced in spaces between people and social environments • Quality of learner engagement with temporal-relational contexts • Peers and teachers as resources of learning • Possibilities to participate	• Agentic ways of people using music to construct themselves in relation to others
Collective	• Group action: people acting collectively on a shared belief depending on their beliefs about their collective capabilities	• Collective meaning-making	• Collective level of being in interaction with music: collaborative musical action, regulating and structuring social encounters, 'knowing the world', affirming and exploring collective identity, coordinating bodily action
Environmental	• Imposed environment, selected environment and constructed environment affect the exercise of the level of personal agency	• Agency is embedded in temporal-relational context-for-action • Cultural, structural and material affordances and constraints • Opportunities for active participation subjugated by objects and tools	• Music and instruments – what is possible in spaces of the classroom, with musical instruments and music itself

the foundation of human agency. Beliefs of being able to produce desired effects by one's actions is a key element in setting goals and evaluating the outcomes, which similarly plays an influential role in motivation that is central in learning (Bandura 1986, 1999).

Socio-cognitive theory approaches agency highlighting the individual capacity to influence one's functioning and life circumstances, and where other people's acts are seen as means to secure desired outcomes. If people are acting collectively on a shared belief then reaching a goal depends on their collective beliefs about their collective capabilities. Socio-cognitive approach recognises three types of environments of *imposed, selected* and *constructed* and which affect the exercise of the level of personal agency meaning that the experience of the environment depends on how people act and behave in it (Bandura 1999). Research highlights, however, that within educational settings individual capacity is significantly influenced by teachers' beliefs and actions in relation to students. This relationship is a central consideration from a sociocultural perspective and perhaps one reason why socio-cognitive and sociocultural theorisations have been regarded as complementary (cf. Jääskelä et al. 2020).

Sociocultural approach

Research based on Vygotsky's (1978) sociocultural theory suggests that agency refers to an individual's experience of their capacity as a learner, which constantly evolves in interaction with others

and actively participating in learning environments that are conducive to facilitating agency (Vaughn 2020). Sociocultural researchers often draw on Emirbayer and Mische's (1998) conceptualisation of agency as a combination of time and context where individuals' agentic action in the present is realised through experiences and understanding as well as orientation toward the future to an anticipated, usually primarily social context. Furthermore, they acknowledge Biesta and Tedder's (2007) argument that agency should not be considered as a power that individuals possess and utilise but rather something that is achieved through engagment with unique temporal-relational contexts that vary along with their environments as available resources and structural factors change.

A range of studies has demonstrated the value of paying careful attention to teachers' and students' active participation in education. Studies on student agency, for example, suggest that effective learning and improvement of performance result from learners' active roles in learning processes, such as agency at an individual but also at a collective level (Vaughn 2020). Moreover, studies indicate that effective teaching practices can help to increase the agency of a student and improve their profound learning (Niemi et al. 2015; Ruohotie-Lyhty and Moate 2015). Recent research indicates that student agency in secondary and tertiary educational settings is affected by relational, individual and participatory resources, such as interest, capacity beliefs, self-efficacy, experiences of trust, support from teacher and peers and opportunities to influence, make choices, and actively participate (Jääskelä et al. 2020). The current study employs this multi-dimensional conceptualisation of person-/subject-centred approach to student agency as it recognises the interplay of individual and sociocultural aspects of learning (Jääskelä et al. 2020).

Socio-musical approach

Karlsen's (2011) sociologically inspired work contributes to the perspectives outlined above but drawing attention to the notion of musical agency. The musical agency is seen as a capacity to act 'in and through' music, which encompasses the unique ways people use music to construct themselves in relation to others (Karlsen 2011). Although the quality of musical agency is regarded as always relational, the individual dimension of the musical agency includes aspects of using music to structure and extend one's position in the world whereas the collective dimension of the musical agency includes different aspects of collective musical use and action, which leans on Small's (1998) philosophy of *musicking*. Small emphasises the social nature of music as a 'human encounter' in the sense that the meaning of the music lies not only in musical works, but especially in non-musical outcomes like the relationships that are established by the musical act. Similarly, Juntunen et al. (2014) address how joint playing of music can be a possible path to mutual commitment and world-making, which leads to more meaningful learning experiences.

In the work of Ruud (2020), the musical agency is conceptualised as relational, being aware of not only one's personal and material resources but also possibilities for action in the immediate surroundings. Furthermore, he discusses how both music and its material aspects lead the direction in musical interactions. Thus, whole-class playing can be seen as a platform for an individual to be part of a larger social and musical entity where they can recognise and investigate their own way of acting and engaging in a multimodal dialogue with respect to music, instruments and the group, including the teacher.

Table 1 brings together the key characteristics of student agency from these different theoretical perspectives. The aim of this study is to examine whether teacher beliefs regarding student agency in WCP can contribute to and extend conceptualisations of student agency as a key area for development within and beyond music education.

The aim of the study

In the present study, we use teacher beliefs to investigate what characterises students' agency in whole-class playing. The following research questions focused more specifically on:

(1) What characteristics of student agency are highlighted in teachers' values?
(2) What characteristics of student agency are highlighted in teacher actions?
(3) What characteristics of student agency are highlighted in teacher observations?

Methodology

Participants and procedure

The participants in this study are teachers *(N* = 11*)* who teach music in grades 1–6 in Finnish basic education. To ensure the diversity of the sample the participants (2 male; 9 female) ranged from the ages of 28–55 with work experience of between 2 and 25 years. Three were qualified class teachers, four were qualified as music teachers and four were qualified as both class and music teachers. Before contacting the participants, permission was obtained from the town authorities. Voluntary participants were recruited mainly using social media or by directly e-mailing teachers at different schools. Participants were informed about the purpose of the study, methods and ethical commitments, and informed consent was signed prior to interviews in October 2020.

Before the interviews, the teachers were asked to complete a short questionnaire on their backgrounds including their gender, age, education and work experience. The semi-structured interviews (Tracy and Hinrichs 2017) were based on the theorisations of student and musical agency outlined above, and they provided a space for the participants to share their knowledge, perspectives and experiences of whole-class playing. An example of an interview question is the following: In your opinion, what affects how an individual student participates in whole-class playing? All the interview questions are presented in Appendix 1.

The average length of interviews was 40 min (variation from 30–60 min). Interviews were conducted remotely on a one-to-one basis by the first author via Zoom or Microsoft Teams. The recorded interviews were transcribed and anonymised. The final dataset included 260 pages of transcribed text (double spaced in font 12).

Data analysis

An abductive approach (Timmermans and Tavory 2012) was used in the qualitative content analysis of the transcribed interviews as this approach allowed for the interplay between the data and existing theories as well as the creative inferential process of extending theoretical perspectives. The goal of the qualitative content analysis (Vaismoradi, Turunen, and Bondas 2013) was to understand what teachers believe about student agency in the WCP context based on their experiences of WCP.

The overall analysis consisted of three rounds. The first round of analysis focused on identifying whether and how manifestations of agency were present in the data and their relations to theoretical perspectives of student agency and musical agency. The first round of analysis combined a careful reading of the transcripts based on the different theoretical perspectives with in vivo coding. By in vivo coding we mean the form of coding in qualitative analysis that emphasises the actual spoken words of participants and aims at understanding the nuanced meanings, ideas and contexts (Saldaña 2016). The first round was double-coded by two different coders for intercoder reliability (Lombard, Snyder-Duch, and Bracken 2002), with some changes and corrections made in between the coding rounds based on the discussion of the coders. Intercoder agreement among the categorisations was high at 93.75% and the remaining 6.25% were recategorised by the coders cooperatively based on their discussions.

Despite the congruence with the existing theory of agency and intercoder reliability, the first round of analysis did not explain the core of some in vivo codes, for example, the relations between theoretical perspectives or relations between activity and agency of students. Therefore, the second round of the analysis was inductive in order to enable the findings to better reflect the data, to

identify other main themes, sub-themes and meanings in the transcribed interviews and to modify the main themes, sub-themes and meanings by adding or combining them. Based on the data, one additional sub-theme, *entrainment*, was identified and placed under the sub-theme of the collective dimension of musical agency to replace *synchrony* that exists in the theoretical notion of musical agency. Appendix 2 represents Tables A1 and A2 as a phase of the analysis after two rounds with emerged themes, sub-themes and meanings concerning manifestations of agency and their relations to theoretical perspectives of student agency and musical agency. The final step of rounds one and two was to examine the main themes for illumination of how different aspects of the agency are related to the teachers' beliefs of whole-class playing. The third round of analysis was to identify whether and how the characteristics of student agency were related to teacher beliefs and values, their active engagment with students and observations about the ongoing interactions in the classroom.

Findings

The findings based on the analysis are presented through three levels of the teacher belief system; *teacher beliefs and values, teacher actions* and *teacher observations*, that reveal what teachers believe about what characterises student agency in the WCP context. Teacher *beliefs and values* include the understanding of student agency in WCP that guide their *actions,* and finally, *observations* provide insights into the ongoing interactions in the classroom as teachers observe children's act and give meanings to what they see. Together these levels provide insights into the multifaceted notions of agency in whole-class playing.

Teacher beliefs and values

Teachers emphasised the importance of students' interest and competence beliefs in whole-class playing. Interest was seen as a multifaceted phenomenon affected by the previous experiences and history of a student, musical identity, self-efficacy, competence beliefs and the experience of possibilities to influence the song to be played or choose the instrument. When discussing competence beliefs, teachers highlighted the importance of effective instruction in perceiving music and knowing how to play an instrument so that students would know the nature of the task and that the goal would be achievable for them. Teachers also described the personal resources students have to draw on in order to participate as being a complex aspect. These personal resources were connected to students' overall self-confidence and the individuals' previous experiences. Teachers acknowledged significant diversity that could be part of a group of students when it comes to their socio-cultural, physical and temporal starting points. These aspects included previous experiences of whole-class playing, alertness, hunger, background of a student, possible illnesses, medication and diagnoses are pertinent to the present moment, as noted in the teachers' comments:

> Teacher 7: The whole context such like previous experiences, problems, alertness and self-efficacy that a student carries into the classroom has a significant impact on how he starts to work.

> Teacher 6: A student might have an illness or a diagnose that affects how he is able to participate.

> Teacher 10: It is good to acknowledge where the students come from, are they fine, have they got food. . . Then there are students who don't necessarily have the model at home that music exists and can be listened to. . . And then there are students who have a broad knowledge of music if in their homes people play, sing and are interested in music . . . So this is the field we are acting in.

In addition to the starting point of a student playing an important role, the participants regarded environmental conditions as significant in how and who would even have the opportunity to be agentic, as the excerpts below demonstrate:

> Teacher 5: Everyone should have even an opportunity to enjoy and be part of it.

Teacher 7: It plays a significant role what instruments we have; how many and how the students are able to participate in the moment. Who gets to play and who does not, and why.

Teacher 8: We might not have the space or the instruments we would need so that everyone would be able to participate.

Power relations among the students and the teacher were also highlighted by the teachers while emphasising the students' experiences of trust and emotional support from the teacher and peers. Group dynamics, tense relationships, the working culture of a class and the role of an individual were regarded as significant factors in learning situations. Teachers acknowledged the importance of the experience of trust in whole-class playing situations, which they referred to as a safe atmosphere where students could 'feel accepted as who they are' (Teachers 4, 6 and 11) and 'work without the fear of making mistakes' (Teacher 3, 4 and 9); many teachers saw this as the starting point for creating the platform for whole-class playing, as Teacher 5 states:

If there is a lot of bullying and fear there is no way they could do anything as demanding as playing together.

Moreover, teachers perceived the importance of shared musical experiences and how this musical aspect of whole-class playing could incorporate all individuals in the class into one entity. Music was described to be 'a 'glue' that helps to form a collective one as music invites everyone to play together and to listen to each other' (Teacher 9) and how 'the pulse from the metronome is not enough because we need to listen and find our dynamic shared tempo' (Teacher 3). These extracts provide insights into how whole-class playing is a combination of perceiving music and actively endeavouring to adapt one's own musical activity to the musical entity that is taking shape in the classroom as the feedback of succeeding comes straight from the music itself. In this sense, entrainment is a critical feature that profoundly connects the outside with the inside to the extent that there is no sense of boundary. Furthermore, whole-class playing was regarded as a 'shared emotional experience' (Teachers 6, 7 and 10), an opportunity to identify how one feels, and as a highly social act:

Teacher 9: I think interactional skills play a more significant role than musical skills in whole-class playing.

Teacher 11: In my opinion successful whole-class playing is an indication of the ability to listen to others and take others into account.

All of these extracts point to the beliefs, values and the insights teachers have regarding what kind of learning is valuable, ethical considerations, how they relate to their students and what values they regard as intrinsically part of joint music making. These beliefs suggest that student agency from the teacher perspective is an ongoing negotiation between the individual resources students bring to the classroom, the collective resources the community can generate, and the relationship with the teacher. The characteristics outlined here point to the resources and aspects of student agency teachers believe are important in the WCP context. The following section outlines in more detail how these beliefs and values inform teacher action as they curate WCP in music education.

Teacher actions

As teachers beliefs and values guide their actions (Turner, Christensen, and Meyer 2009), the ways they engage with their students can be regarded as their enacted beliefs that provide us another lens to view student agency. The teachers provided insights into how they supported their students' interest, for example, by asking students' opinions of songs to be played, choosing a song they knew their students liked, involving students to plan the lessons, providing clear goals for action ('just playing' vs. making a music video or a gig at school festival), letting students choose which instrument to play, or by first teaching students an easy riff in order to be able to participate in whole-class playing. Each teacher participant described their role and supportive acts concerning

students' learning in the whole-class playing, and the analysis identified many descriptions of support provided by the teachers directed either toward student's interest, feeling of trust and their sense of being capable of or musical aspects so that students would find their own ways of acting and participating. Their descriptions of how they usually build whole-class playing situations provided many examples of how they seek to support and give instructions in a musical way. The teachers supported their students to perceive music by using visual auxiliary materials, adding different levels or instruments one by one, using backing tracks, guiding students to listen, accompanying them with an instrument and showing or counting out loud to maintain the tempo (supporting entrainment). Teachers 2 and 3 explained how they achieved this:

> Teacher 2: There is at least one element that everyone learns to play, and we do that in the beginning of rehearsing a new song. And by learning that element, we also learn the structure of a song which is always the same no matter if you sing it or play the song. . . . And after we have learned to play one element, it is easier to keep the whole group engaged continuously. . . . I usually have the structure of the song on the whiteboard where I can show stuff and maintain the tempo. I show where we are going and maybe sing the melody at the same time.

> Teacher 3: Well, now we get to the core of whole-class playing and the significance of whole-class playing which is to listen to each other. . . . I do a lot of rhythmic practices with my students so that it's not a new thing for students to keep up together, listen to each other, and do the same with everyone.

The environmental aspects highlight what teachers believe students need to support their agency. Teachers described their actions by being strict in placing students and guiding the physical transition to the instruments to avoid chaos, by using the class or rooms nearby in 'creating spaces for concentrating' (Teacher 1) or 'dividing the class in smaller groups where students can feel safer to rehearse to play something new' (Teacher 3). All participants described how they rarely stay in one place while they teach whole-class playing but how they consciously choose the physical spot that serves the students' supportive needs; moving around the class helping individuals, leading the start many times from the front of the class to keep everyone engaged, or hopping from one instrument to another to support entrainment, that is maintaining everyone 'in the moment' by the means of social and musical impulse.

The teacher actions outlined here indicate how teachers prepare for and participate in the creation and maintenance of WCP. Moreover, the findings provide insight into the ongoing interaction between teacher and students, the way teachers guide and facilitate student participation and provide support towards their individual and collective resources of agency. The data analysis also indicates how the teachers carefully observe and respond to their students during the realisation of WCP, as outlined in the final theme.

Teacher observations

Whereas teacher values are enduring across classrooms and teacher actions can be regarded as their enacted beliefs, teacher observations can be regarded as a form of 'sensitised beliefs' that focus on individual and collective levels in the real time of the classroom, providing insights into consequences and effects of action, and the adjustments teachers make to response their students' agency. If the instruction was not clear or if the task was too hard, the teachers explained in their experience the students would become resistant and not participate in whole-class playing. Every participant had experiences of difficult and challenging situations where they had felt clueless with a resistant student or a class they just did not manage to get to play together. Teachers described how the students begin to take responsibility for their participation when they feel safe, they are able to participate, when the task is achievable and not only offers experiences of success but also challenges. The descriptions of participatory aspects of agency as perceived by the teachers provide insights into how musical aspects like playing, perceiving the music and the experience of entrainment connect to the sense of being capable, being safe and belonging, as illustrated in the following extracts:

Teacher 10: I can see the enjoyment from their faces when they sound like really good and when they realise they are part of it.

Teacher 11: What engages a student in whole-class playing is when he feels and hears that now this playing of ours goes together and now we are in the same . . . and, 'hey, now I got those beats in the right place' and 'now I managed to change that chord on time.'

Supporting students in perceiving music or playing instruments was described as increasing students' competence beliefs, self-efficacy and interest toward things to be learned and, hence, enhancing the possibilities to participate. The teachers noted that aspects that enabled participation increased student engagement in whole-class playing. Different aspects of identity were also recognised as strongly influencing students' motivation and readiness to participate whole-class playing since it affected how they identified with a certain piece of music. The comments from the participating teachers, however, indicate how the learning environment can play a significant role in orienting students to the music. As Teacher 9 points out:

Students might react like 'that kids' song is so stupid!' but if we are going to perform that song in a kindergarten, the older students might become totally infatuated with the song.

The participants noted how through the music, playing together and entrainment the way opens to not only exploring social relationships but also affirming and exploring collective identity. Teachers often emphasised that once the playing starts, it often engages even restless students to participate because there is no room for anything other than being present in the moment if they aim to be in synchrony with others. Teacher 8 described how a student would refuse to play any instrument but as the playing started, the student immediately started to physically 'sulk in tempo'. The participants also underlined music as a connector for establishing a collective identity as they described for example how whole-class playing reaches the next level when a class has composed its own song (Teachers 8 and 11), how the hard work of the class and a successful gig at school festival made students united (Teachers 1, 5, 8, 9 and 11) or how there have been smaller collectives, bands, that have engaged in certain genres and performed in school band festivals. Moreover, Teachers 5 and 11 emphasised how whole-class playing 'strongly mirrors the social skills of the class' and Teacher 2 described the situation where a class of students found a new way of being together through whole-class playing:

They wanted to play that song all the time together, many hours. . . . They had this tension in the class all the time and students were stressed because of that. It was like 'we can do this together and we are able to do this together,' and there was this ease of doing.

Teacher observations as a form of 'sensitised beliefs' provide insight into the dynamic, relational and contextual nature of student agency. These extracts call attention to the non-musical outcomes of whole-class playing as the social aspect is merged through the musical act. The key seems to be how the group learns to listen to each other, how they take responsibility in the interactions with each other, and how they explore and affirm relationships through collaborative musical action. This is a notable finding because here the musical aspects intertwine reciprocally with the relational and participatory resources of agency, like safe atmosphere, peer support and participation activity, in the most significant way.

Discussion

The study examined teacher beliefs of students' agency in WCP by exploring characteristics of student agency in different levels of teacher belief system; teacher beliefs and values, actions and observations. In response to the first research questions about what characteristics of student agency are highlighted in teacher values, the findings suggest that student agency in WCP is inextricably associated with students' diverse sociocultural, physical and temporal starting points, and with the environmental considerations that either facilitate or limit the chance to be agentic. Teachers

believe students' interest play a crucial role in successful WCP but they also acknowledge how motivation is a sum of several multifaceted factors that are intrinsically central in student agency, such as competence beliefs in perceiving music and playing an instrument, self-efficacy, musical identity and possibilities to influence and choose. Values of safe atmosphere, providing students social affirmation and the experiences of belonging through music emerged throughout the interviews. The enacted beliefs of teachers, the focus of research question two, highlight student agency in WCP as highly interactive and relational, where teachers' supportive multimodal actions directed towards the different aspects of students' interest and trust enable students' participation to joint music making. The findings to the third research question, through teachers' sensitised beliefs, draw attention to the challenges of resistance, aspects enabling students' participation, non-musical social outcomes of joint musical action and highly agentic special characteristics of student agency in WCP, entrainment, which is active being, feeling and sharing the moment collectively by the means of music. These findings highlight the value of examining teacher beliefs within the specific context of described WCP as a multimodal and multidimensional platform where, through participation and the experience of entrainment, the way opens to strengthen beliefs in one's ability and capacity as a learner and establishing the collective by creating a safe atmosphere, social cohesion and the possibility to explore or experience new collective ways of being by the means of music. Consequently, our findings emphasise how WCP cannot be understood only by exerting individual agency within a shared environment, but goes beyond the individual without losing the individual. Above all, the findings highlight that teachers believe the enactment of different aspects of students' agency as essential features for whole-class playing to succeed. The synthesis of the aspects and the process of the development of student agency in WCP are illustrated in Figure 1. At the bottom of Figure 1 is the starting point of an individual, which forms the foundation for an individual to approach whole-class playing as a learning environment, and the circle that surrounds the aspects of agency illustrates how teacher support affects every aspect of student agency in WCP.
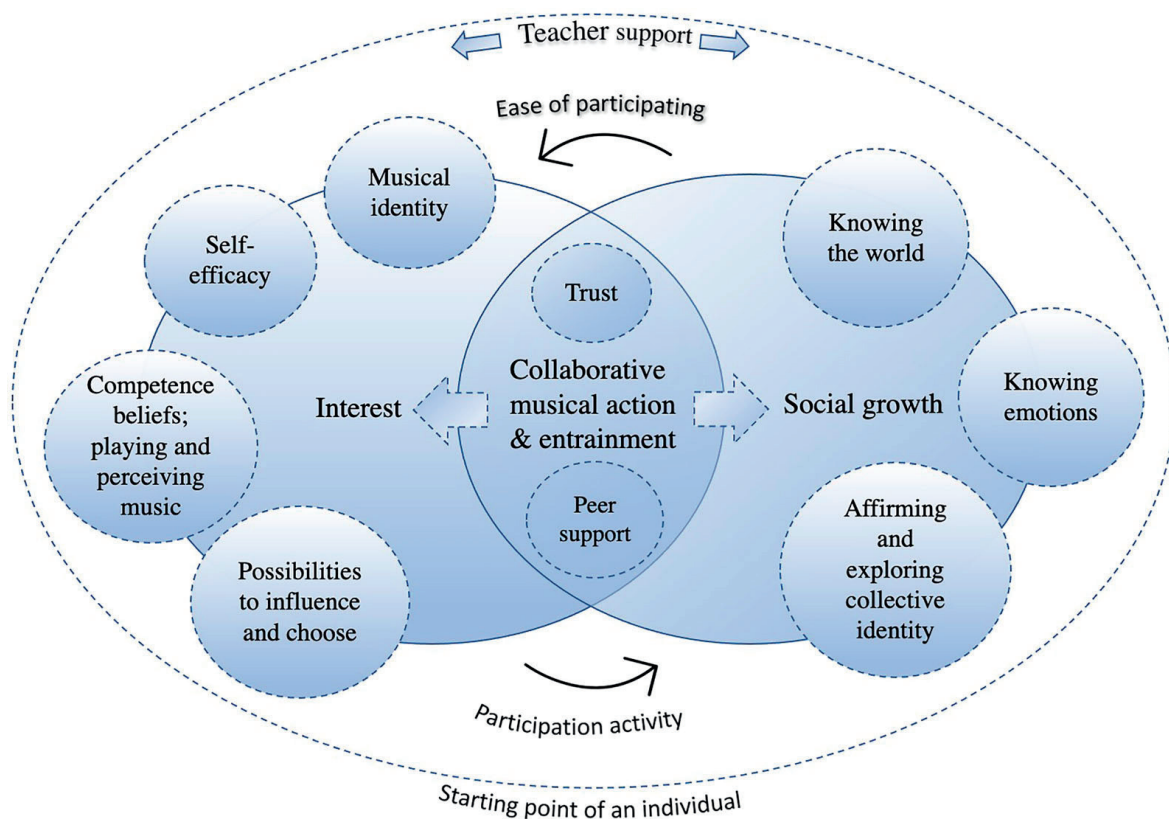

Figure 1. Synthesis of different aspects and the process of student agency in whole-class playing through teacher beliefs.

The findings indicate how individual, relational and participatory resources of student agency connects with and through musical aspects of agency and how the role of teacher support is significant in bringing students through music into collective exploration socially and musically. The teacher beliefs reported in this study provide insight into how they see themselves as facilitators who support and enable the students to find individual ways to participate and create the path step-by-step toward the opportunity of entrainment for the entire collective. Therefore, the key finding suggested by this study is the profound relationship between teacher beliefs meaning their values, enacted and as sensors, in the development of student agency. Furthermore, the high degree of pedagogical sensitivity required of teachers could be framed as 'pedagogical entrainment' on the basis of this study. Pedagogical entrainment highlights teacher ability of being adjustable and responsive when encountering students from diverse starting points, reading the musical and social situations and taking actions in guiding their students towards and through entrainment. Thus, our study provides further insights into how teachers' belief systems drive the way teachers support their students (Gallimore and Tharp 1990; Spruce, Marie Stanley, and Li 2021; Turner, Christensen, and Meyer 2009), which emerges as an incremental element for increasing student agency (Niemi et al. 2015; Ruohotie-Lyhty and Moate 2015).

This study highlights the role of entrainment, a complex interactive process among people that points at the ability to adapt one's behaviour to social and musical entities and perceiving oneself as a part of an entity by means of music (Clayton 2012). It is a profound way of being present, in the moment and in time collectively. The earlier conceptualisations have recognised synchrony (Karlsen 2011) as a part of musical agency, entrainment as a part of student agency and as a way of understanding student agency are new. This study clearly shows how playing together and the experience of entrainment open the way not only to exploring the social relationships and establishing collective, but also to recognising and investigating an individual's unique way of acting and participating through music. Thus, entrainment is a key factor in the success of WCP. The findings support the understanding of music as a 'human encounter' wherein a joint playing of music can create mutual commitment (Hauge 2012; Juntunen et al. 2014; Karlsen 2011; Small 1998). Furthermore, the current study contributes to explaining how social affirmation and establishment, equivalent with experience of trust and significance of peer support recognised in other studies of educational settings (Jääskelä et al. 2020; Niemi et al. 2015), develops in WCP by clarifying the realisation of how making music together is dependent on individuals investing in the forming of the collective 'one' through entrainment.

Our findings emphasise the diversity that could be part of a group of students, including not only the present physical sensations, such as hunger, alertness and diagnoses, but also the sociocultural and temporal context, such as previous experiences and starting points to social interaction and music. We suggest that these aspects need to be carefully considered as they significantly affect the enactment of students' agency, as the individuals' agentic action in the present is realised through bringing their experiences and understanding from the past as well as orientation toward the future into a certain context (Biesta and Tedder 2007; Emirbayer and Mische 1998). Moreover, this study suggests that not only the earlier aspirations of the past of the individual form the present and prefigure the future, but also the concrete and physical considerations and environmental considerations are notable aspects of agency here-and-now. We would thus argue that student and musical agency should be reconceptualised to acknowledge the importance of the immediate physical environment in educational settings.

Implications

Teacher beliefs about student agency can provide new insights. After all, teachers spend a considerable time with their students, and how teachers work has a significant effect on the development of student agency. Music teachers in particular have to negotiate and come alongside students in the real time of the classroom in a way that other subject teachers don't have to. As illustrated in Figure

1, teacher support effects every aspect of student agency in WCP, and through 'pedagogical entrainment' needed in WCP, the teacher should be able to discover whether the support should be directed to individual, participatory, relational or musical aspects since they blend with each other. The findings highlight the potential of entrainment as special characteristics of student agency in WCP, by its musical and social aspects, as it is a very effective tool for profound participation and belonging. This understanding should help to create new pedagogical approaches to support and shape student agency in music educational contexts, which can insure the relevance of music as an essential school subject in the future.

Limitations and future directions

The current study has certain limitations that need to be considered before making any generalisations. First, while the interviews shared the beliefs of the participating teachers, future research could include observations to examine how understanding emerges in practice. Second, a larger sample size would provide a more diverse picture of the beliefs and perspectives of music educators. Finally, the study was conducted in a Finnish educational context, and to see whether the findings are reflective of other teachers, future research should include teachers in different countries. However, our study offers a pragmatic tool with which music educators can reflect upon not only their work but also their personal relations to music. Furthermore, to gain a better understanding of the full potential of whole-class playing, the experiences and thoughts of the students should be examined.

Conclusions

This study invites us to acknowledge how teachers' values are inseparable part of the activities they curate with their students, and how teachers' role is central in the formation of students' agency. Furthermore, the findings help us, as music educators, to recognise what affordances whole-class playing has to offer for children's agency, so that we could more consciously develop new pedagogies to support our students. Based on our findings, we can conclude that, in WCP, the collective, relational and participatory aspects of student agency appear to precede somewhat the individual elements. In a way, in a joint musical activity, 'being part of something' allows 'being someone'. This characteristic feature of whole-class playing may hold relevance for understanding how this activity may support the development of students' agency and social growth.

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Disclosure statement

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Appendices

Appendix 1

The questions used in the interviews in this article are as follows:

> What kind of experiences do you have of playing as a group in your personal life, and what kind of meanings do they have for you? In your opinion, what affects how an individual student participates in whole-class playing? In your opinion, what affects how a whole group of students starts to play together, and how is the whole-class playing situation built? How do you support an individual student and the whole group in the whole-class playing situation as a teacher? Is there something concerning whole-class playing we have forgotten to talk in addition to what we have discussed already? Is there something you want to mention/talk about?

Appendix 2

Table A1. Teacher beliefs about student agency in whole-class playing.

Meaning	Sub-theme	Main theme
Motivation, finding a task pleasant, enthusiasm, interest, finding a task meaningful and worth pursuing.	Interest	Individual resources
Beliefs and experience of capacity and being capable, experiences of success, self-confidence.	Self-efficacy	
Experience of one's ability and know-how, conception of what is demanded in the task, too challenging tasks vs. achievable goals.	Competence beliefs	
Safe vs. unsafe atmosphere, possibility to be oneself and be accepted as a oneself, supportive atmosphere, feeling of trust toward the teacher and peers.	Trust	Relational resources
Teacher's support, instructions given (also in a musical way) feedback, experience of being noticed.	Teacher support	
Cheering vs. flattening peers, impact of the peer, roles of the group and group dynamics.	Peer support	
Possibility to participate, responsibility of participation, asking questions/help, enjoyment of performing tasks.	Participation activity and ease of participation	Participatory resources
Opinions of the students being considered, opportunity to influence the contents.	Possibilities to influence	
Opportunity to choose one's way to participate, choosing an instrument or easy vs. difficult part when playing.	Possibilities to make choices	

Table A2. Teacher beliefs about musical agency in whole-class playing.

Meaning	Sub-theme	Main theme
Emotional and mood work mediated by music, using music for identifying how one feels.	Knowing emotions	Individual dimension
Shaping self-identity, the meaning of music for oneself.	Musical identity	
Musical perception and perceiving, perceiving self as a part of entity.	Medium for thinking	
Playing and singing, music as a hobby, playing tests.	Developing music-related skills	
Exploring the social relationships through music.	Knowing the world	Collective dimension
Playing together.	Collaborative musical action	
Using music as a connector for establishing the collective, for example, by having the class's own song or by establishing 'who we are as a class' or 'as a band.'	Affirming and exploring collective identity	
Adapting one's activity to create an entity together with everyone else simultaneously, perceiving self and the action of self as a part of an entity as the final result sounds good, becoming part of an entity by means of music. (Entrainment is enabled and supported by the teacher, for example, by counting in before and during playing, accompanying with any instrument, showing chords from whiteboard in tempo or using backing tracks.)	Entrainment	

II

STUDENTS' EXPERIENCES OF THEIR AGENCY IN WHOLE-CLASS PLAYING

by

Eveliina Stolp, Josephine Moate, Suvi Saarikallio, Eija Pakarinen,
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Students' experiences of their agency in whole-class playing

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Abstract

The agency of primary school students has been studied increasingly in recent years; yet, we know relatively little about student agency in music educational settings or how students experience their participation in joint musical action. This study explores sixth-grade students' experiences of their agency in whole-class playing. Qualitative content analysis of 11 pair interviews identified vulnerability as an essential element of participating in whole-class playing, highlighting the intrinsically emotional nature of the process, the immediacy of the musically shared moment and the safe place of entrainment. This study elucidates the enactment of agency and the resources facilitating and limiting agency within the context of whole-class playing from the perspective of students themselves.

Keywords

Agency, music education, primary school, whole-class playing

Introduction

Music education can support growth and well-being in a variety of developmental areas, such as identity construction and social connection mediated by the presence of music in shared experiences (Saarikallio, 2019) and joint musical action (Juntunen et al., 2014). The importance of

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children's active participation and agency has become increasingly acknowledged in 21st-century education (Niemi et al., 2015), even though student agency in music education has received little attention to date. Furthermore, listening to the experiences of students themselves to gain a deeper understanding of the teaching and learning processes is seen as a significant factor in fostering student agency and transforming practices in the classroom (Cook-Sather, 2020). Therefore, the aim of this study was to explore sixth-grade students' perspectives of their experiences of whole-class music playing to deepen the understanding of the concept of agency in whole-class playing. Whole-class playing is an important method and a part of the timetabled curriculum in the Finnish music education which aims at involving every student, despite their skill levels, to play music as a group (Stolp et al., 2022). Gaining a better understanding of students' experiences could bring to light the demands made on students and the commitment they have to make when they participate in whole-class music playing (Boeskov, 2018; Juntunen et al., 2014; Kompridis, 2011) and support the further development of pedagogical practice in music education.

The study was conducted in Finland, where music is presented in the core curriculum as an opportunity for musical activities, such as whole-class playing, and cultural participation that promotes social skills, well-being, creativity, imagination and cultural understanding in addition to musical skills and the perception of music (Finnish National Agency for Education [EDUFI], 2016). While whole-class playing assumes that all students can be part of this activity, teachers cannot assume that all students are musically proficient as students come from a wide range of backgrounds. Whole-class playing is an important starting point as an environment with its resources, opportunities and limitations for the agency of a student when the teacher seeks to bring students together through music to experience entrainment in both its social and musical synchronisational dimensions (Clayton et al., 2020; Ilari, 2016), to explore new ways of being together collectively (Karlsen, 2011) and to gain a sense of themselves as music makers. While teachers can offer the opportunity, students must be willing agents to enter the exploration of 'being the music' (Juntunen et al., 2014), and little is known about students' experiences as part of this process. Moreover, there is little empirical and theoretical knowledge on how agency is realised in a dynamic dialogue between the child and musical activity.

Subject-centred sociocultural approach to student agency

In recent years, there has been an increasing amount of research concerning primary-aged students' agency in different learning environments (Kangas et al., 2017; Vaughn, 2020). Supporting the agency of students can advance the prospects of developing a responsible society that has the competence and motivation to advance equity, to make a difference and to be adaptable to changes (Adair, 2014; Vaughn, 2020). In this study, we draw on subject-centred sociocultural approach to agency (Eteläpelto et al., 2013) that considers the complex interplay between individual, social, cultural and material entities of agency. This approach sees subjects as individuals with not only their skills and competencies, but also their feelings and will, as subjects actively consider and choose what is worth pursuing. Hence, there is an accordance to socio-cognitive perspective where agency is often presented as an individual experience of motivation, determination, competence, self-esteem and self-management (Bandura, 1986). However, subject-centred sociocultural approach sees agency more like a process where agency is constantly evolving through social practices in environments and circumstances that constrain or resource agency. Furthermore, Eteläpelto et al. (2013) acknowledge the temporal dimension where agency in the present is argued to always be realised through past experiences, future orientation and the current context (Biesta &

Tedder, 2007; Emirbayer & Mische, 1998). They also emphasise how agency should be analysed by focusing on both manifestations of agency and on subject's interpretations, meanings and purposes as agency can manifest itself in various ways, like resisting or willing to maintain something that exists, and not for example only as events of actions.

Although there is a wealth of research on student agency, the prerequisites for and the development of primary school student agency have received little attention to date. In tertiary educational research, student agency is defined as the experience of being empowered to act through relational, individual and participatory resources and engage in learning situations (Jääskelä et al., 2020). Moreover, previous studies have indicated how college students' agency is crucially dependent on the experiences of trust and how an emotionally safe climate facilitates student agency (Jääskelä et al., 2020; Juutilainen et al., 2018). In their work, Slaby and Wüschner (2014) argued that emotions are closely linked to our agency and to the sense of what we 'can' or 'cannot' do, what we are capable of and the active sense of potential doings and potential happenings. In a way, emotions might limit or facilitate our active participation in social action and play a crucial role in how we reconstitute our worlds (Ruud, 2020). Even though agency is generally seen as a positive orientation and educational goal, Skinnari (2014) argued that students' expressions of resistance, which are agentic, should be considered significant as they are signs of avoiding meaningless activity.

Adair (2014) advocated education as an opportunity for children to have a broad set of learning experiences that expand what they have the potential to be and do, not only at the individual but also at the collective level. In this sense, teachers play a significant role in promoting students' active roles, resulting in effective learning and an increased sense of agency (Niemi et al., 2014; Ruohotie-Lyhty & Moate, 2015). Nevertheless, while the appreciation of student agency is visible across research in education, it remains unclear how agency is constructed in different learning environments and how it can best be supported. Furthermore, it appears that current music education does not develop an understanding of how student agency can be conceptualised in the context of whole-class playing due to its multifaceted nature, where along with the various notions of agency, music itself is agentic and creates opportunities and new ways of relating to others (Ruud, 2020). Therefore, we chose to fill this gap by exploring students' experiences and investigating how they reflect upon their own actions.

Approaching agency through musical activity

As participating and engaging in musical activities seem to play a significant role in understanding the nature of agency in the context of music education, it is important to focus on what characterises participatory music. The sociological approach to music (DeNora, 2000) considers music engagement as an act of emotional and aesthetic agency, and music education research recognises individual and social levels of musical agency in the context of musical learning (Karlsen, 2011). Juntunen et al. (2014) discussed the importance of building learning environments that would encourage students to participate, explore and experiment with music here and now to promote their personal agency, but also their social agency by emphasising the power of Small's (1998) ideas of 'musicking' as a human encounter and its essence of exploring human relationships. However, Boeskov (2018) argues how social analyses of music educational practices many times overemphasise the positive effects and overlook their complex entanglement, neglecting the different experiences of those who are involved and thus, disregard the ambiguous effects and conflictual consequences of social music making.

Ruud (2020) emphasised how the participatory aspect needs to be considered *in the moment among the participants*, where the degree of success is measured in the contribution of individuals

and democratic values in the musical interaction among the participants, instead of musical qualities. Turino (2008) described how a determined form of music, where learning the formulas through repetition opens the participatory musical forms that are favourable for the beginners, creates a sense of safety, the essence of which lies in the constant repetition and social synchrony. In the work of Clayton et al. (2020), interpersonal entrainment is understood as the interaction and coordination between human beings, and the ability to adapt one's behaviour to social and musical entities by means of sound and movement. Musically spoken, this synchrony, or more precisely, interpersonal entrainment (Clayton et al., 2020), is the core focus for participatory forms of musicking, but it also involves the dense sounding musical texture, which makes it easier for participants to contribute at different skill levels without being obvious for playing 'wrong' (Ruud, 2020). The work of Ilari (2016) sheds the light to the prosocial behaviour and social competencies resulting from the rhythmic entrainment that has a potential to bond individuals and foster a sense of togetherness. In this sense, music itself carries a sort of agency as it creates possibilities for action and new ways of relating to others (Ruud, 2020). In this study, we use a subject-centred sociocultural approach (Eteläpelto et al., 2013) to explore the agency of students in relation to self, others and music in the context of whole-class playing.

Aim of the study

In the present study, we investigated students' experiences of their agency in whole-class playing. Moreover, two sub-questions focused more specifically on (a) what kind of aspects of agency become highlighted in these experiences and (b) what kind of agency sixth-grade students demonstrate in whole-class playing.

Methodology

Participants and procedure

The participants in this study were one class of sixth-grade students ($N=23$, age 12–13) in primary school located in Central Finland. The participants' (11 males and 12 females) backgrounds in music varied greatly, which meant that there were students who had music as a hobby and those who only engaged with music as a compulsory school subject. In Finland, research with human participants must comply the guidelines of the Finnish National Board on Research Integrity TENK. Since the focus of the study was on minors, we consulted our university's Human Science Ethics Committee to find out if our study needed an ethical review to be carried out. However, collecting consents from our participants' parents or guardians prior to gathering data was enough to comply the guidelines of TENK and no ethical review was required. Before contacting the participants, permission was obtained from the municipal's school authorities. Participants were recruited by first asking for the principal's permission, determining the music teacher's interest and finally asking if the students were interested in the study. Participants and their parents were informed about the purpose of the study and its methods and ethical commitments, after which students gave their oral consent; the informed consents were signed by their guardians prior to the data collection. The students were interviewed in April 2021.

Semi-structured interviews were conducted as they provide opportunities for understanding, reflection and elucidating subjectively lived experiences from the perspective of a respondent (Tracy, 2013). Interviews were guided by the subject-centred sociocultural approach to student agency (Jääskelä et al., 2020) and musical agency (Karlsen, 2011) outlined above, but they also provided space for the participants to share their perspectives and experiences of whole-class playing. Since our participants were sixth graders, we wanted to ask them very concrete and open
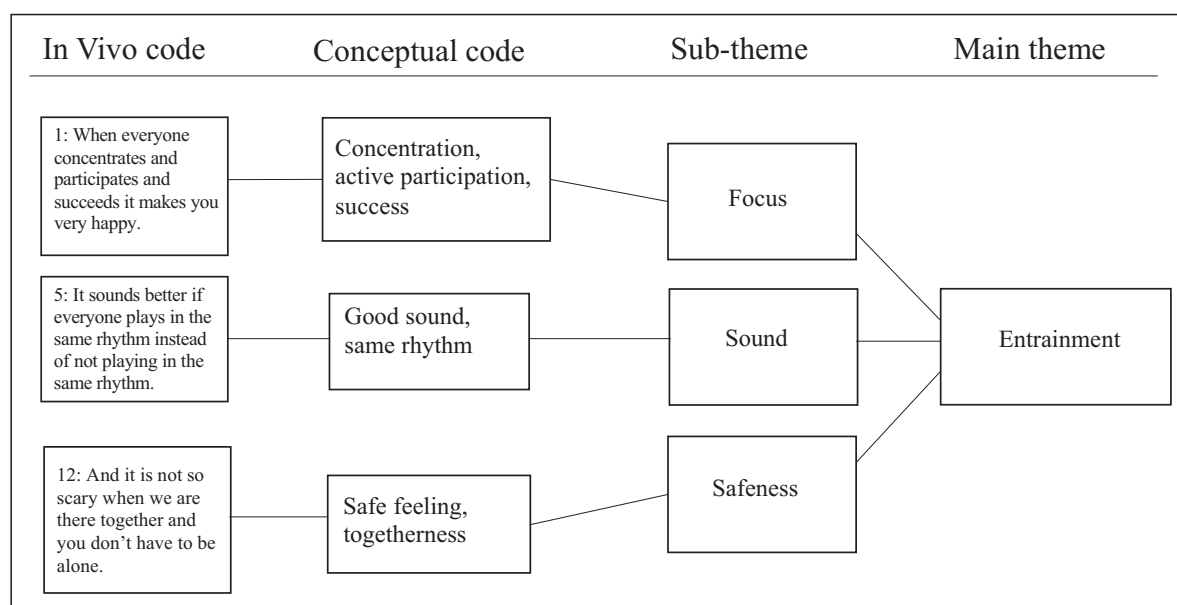
Figure 1. Phases of coding and theme development.

questions about their relationship with music and instruments, whole-class playing processes and actions during whole-class playing, inviting them to describe their experiences in their own words, avoiding closed questions. For example, a typical question was as follows: *When you begin to play a song with your class, what are the things leading you to participate?* All the questions used in the interviews are presented in the Appendix.

The class teacher was asked to divide students into pairs and one triad prior to the interviews by allowing the students to freely choose their pairs. This free choice was evident in the data in the form of honest opinions and openly shared experiences, but also as inner circle humour and occasions where students began to stray from the topic. The interviews (lasting from 6 to 15 minutes) were conducted as a pair interview (with one triad) in a small room by the first author during the regular lessons of a class. The interviews were recorded, transcribed and anonymised. The final dataset included 103 pages of transcribed text (double-spaced, 12-point font).

Data analysis

An inductive approach was used in the qualitative content analysis of the transcribed interviews, adapting Vaismoradi et al.'s (2016) theory of theme development process (see Figure 1). The goal of the qualitative content analysis was to understand how the students described their experiences of agency in whole-class playing. The first analytical step was to familiarise ourselves with the data, search all the manifestations of agency in the transcribed text and utilise them as In Vivo codes, which results in rich data in research (Rogers, 2018; Vaismoradi et al., 2016). The second step was to work with the dataset and sort the In Vivo codes for conceptual codes, cluster the codes into categories that might become sub-themes and then further sort them into main themes (see Figure 2). Next, distancing from the data and discussions among the co-authors enabled self-correcting, after which all the codes were revisited throughout the dataset to ensure that all the participants were represented in the dataset (Vaismoradi et al., 2016). In the final phase of the analysis, the findings were linked to existing theories and literature, thus facilitating a deeper understanding of the phenomenon (Vaismoradi et al., 2016).
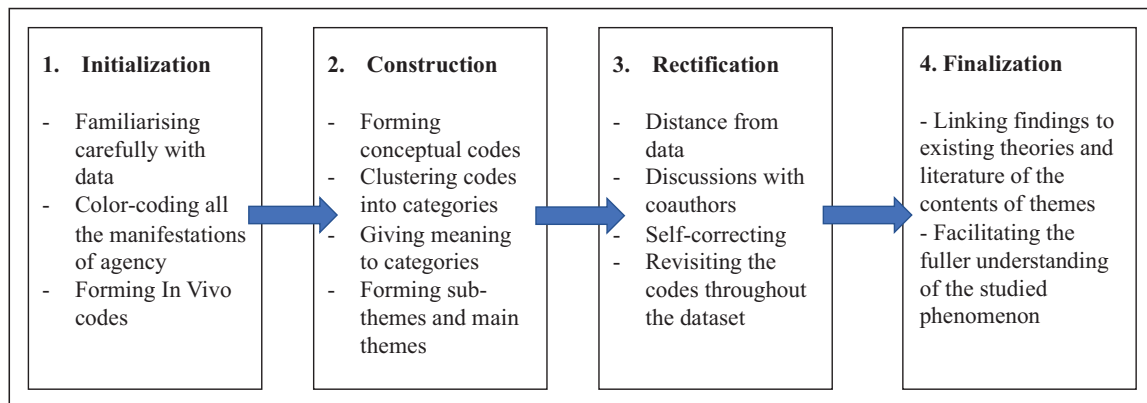
Figure 2. Theme development process adapted from Vaismoradi et al.'s (2016) theory.

Findings

The analysis led to the identification of three intermeshed main themes of the students' experienced agency in the context of whole-class playing, which are presented in their own sections. *Openness* illustrates the very personal level of agency; *Entrainment* involves the understanding of the collective aspect and finally *Relational and individual resources of agency* points to the limitative or supportive resources or conditions in the here and now. Together, these themes provide insights into the rich and complex nature of student agency in the context of whole-class playing. The synthesis of the final themes and sub-themes is presented in Figure 3a. The relationship among the themes and the implications this has for how agency can be conceptualised are addressed in the Discussion section.

Figure 3a. (a) Synthesis of the aspects of student agency in whole-class playing from the perspective of students.

Openness: Perceived skills, musical taste and familiarity

Openness in the interviews was connected to the interaction of aspects of perceived skills and musical taste and familiarity which seemed to some extent to determine individual relationships with music, willingness to engage in musical activity and resources to actively participate in joint musical action. The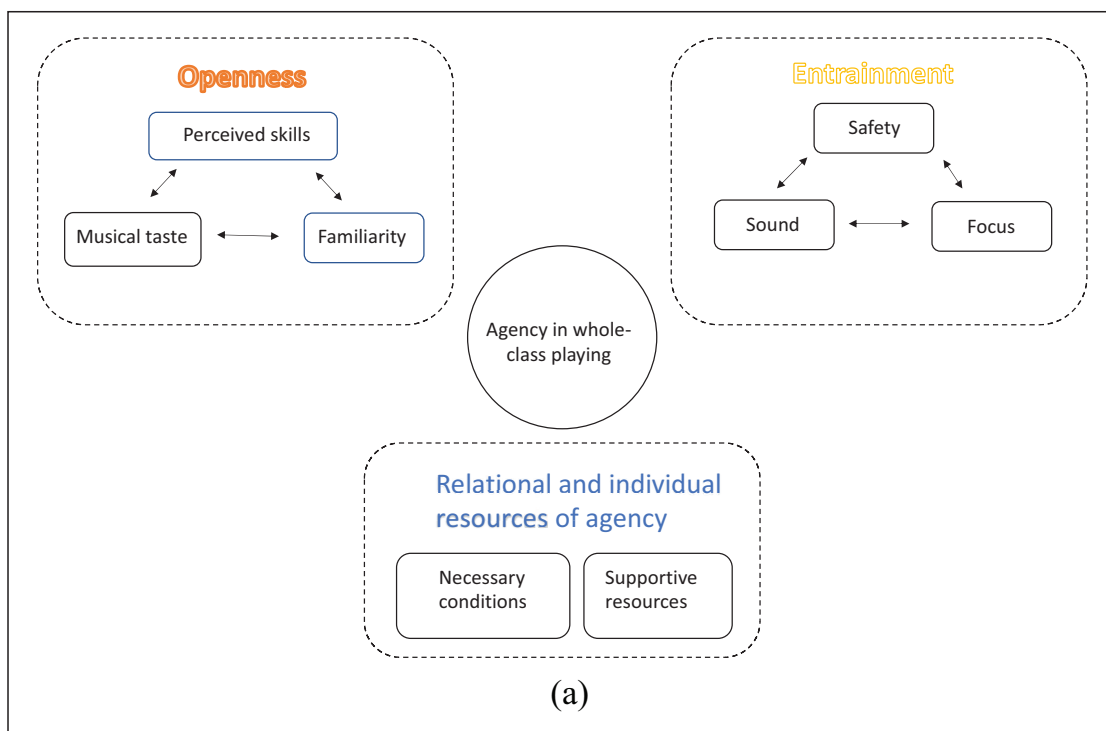 participants demonstrated that the sense of being competent seems to play a crucial role in whole-class playing and that the sense of one's ability is connected to a strong emotional load. However, the findings indicate how competence alone is not enough to describe the phenomenon of what it means to be in the situation when you actually *are* the sound (or silence), the nature of which is in its immediacy, both to be shared and to be heard. In addition to perceived skills, openness includes not only individuals' musical taste, that is, the experience of what instrument or music sounds good and what does not, but also the familiarity with the music or access to instruments and playing instruments as a hobby in free time.

Students described how whole-class playing is enjoyable as long as the song to be played is not too difficult and the goal is achievable for them. Students described numerous ways of increasing their competence during whole-class playing when it comes to perceiving the music and concrete ways of learning to play an instrument, demonstrating active determined agency to be able to reach a certain goal. Those aspects included memorising the structure and lyrics of the song, perceiving different musical elements such as rhythm or melody and exercising motoric performance when playing an actual instrument. According to the students, feelings of success, motivation, self-efficacy and satisfaction come from moments when one finds that their own capacity meets the demands of the task, such as learning to play something new correctly, or being able to perceive music. Also, music and the sound itself were mentioned, as Student 23 explained:

> It sounds good when you learn it, and sounding good is the nicest thing once you learn it.

There were students who emphasised that they would not take part in whole-class playing, demonstrating resistant agency as they actively withdrew from playing, if they felt it was too hard to play, if they did not know what the task was about or if they did not perceive the music easily. Feelings of disappointment, dislike and failure were present when students described experiencing low points. Students described how they hate an instrument because it is hard to play, how they lose their motivation if they cannot play and how it is possible to begin to 'hate the song, like if there are difficult lyrics or rhythms' (Student 11). There were students who 'try to play but it never succeeds' (Students 14 and 19), while Student 8 stated, 'If I play something wrong, I notice it right away'. These aspects indicate how emotions are strongly linked to the perceived skills of an individual and how the music's power is in its immediacy, the instant feedback of success or failure.

Familiarity was described as involving the aspects of using music (listening or playing) inside and outside the school environment as well as the emotions involved and motivation as a result of familiarity manifested through musicking. In the interviews, students described how they have access to instruments at home or have music as a hobby, which seemed to connect with the instruments they like to play the most. Music lessons in those cases were activities in which to learn something that could be taken outside the school environment. A song was described as nice and easy to play if 'you have listened to it before' (Student 14) or 'you have played it before' (Student 11). Student 2 stated how 'motivation increases if I get to play an instrument I like and if the song is familiar', and Student 1 emphasised 'how good it felt when I got to play my favourite instrument' and 'you notice if we sing loudly or silently if the song is nice or if it is more boring and no one knows it'. What we found interesting was that there were students who considered musical action an opportunity to manifest their personal preference and enjoyment of the music, as Student 9 noted:

I always vibe out when I play the music, because you enjoy more the music if you tap your feet or something like that.

In addition to perceived skills and familiarity, musical taste is the last aspect that relates to the theme of openness. It speaks to the power of music and the relationship between the music and an individual as to how the music itself calls one to participate, as the statements below illustrate:

Student 13:   If the song sounds nice, you feel more like singing it.
Student 7:   If the song sounds nice, then I start to work.
Student 10:   If the song sounds good and fits your musical taste, then it is easy to start to play it.

Interestingly, it seems that the amiable sound itself functions as a strong motive that contributes positively to the agentic participation of a student and makes one actually willing to participate. All these extracts point to the experiences, feelings, temporality and circumstances with resources or constrains (Eteläpelto et al., 2013) students are carrying with them when considering and choosing if entering into the musical action. The characteristics here suggest that student agency from a student's point of view is temporally constructed ongoing negotiation between their perceived skills, familiarity and musical taste which together form their relationship with music and hence, create affordances for the practice of their agency.

Entrainment: Focus, sound and safety

Students described whole-class playing at its best as moments and an environment where everyone manages to aim at the same goal, concentrate and seriously take an active role in a group. Those moments were described as moments of intense focus, great team spirit and success, as Student 9 described:

The moments when everyone is able to concentrate and is happy in what they do are precious moments. It feels like we have a good team spirit in those moments.

Our findings highlight how a safe atmosphere and the musical aspect of entrainment often intertwine. Many times, the students described the musical aspects of how in the moments of success the students in the class 'have a very good rhythm' (Student 10) and how 'we sound like a real band together' (Student 17). Students emphasised that the end result sounds very good when everyone plays together in the same rhythm as well as how nice it is to play together in the same rhythm. The power of entrainment and the dense musical texture are in creating places of safety, as can be seen from the following comments:

Student 21:   When we play together, it is not scary to play wrong because there is rhythm that continues, and you can hop on more easily.
Student 20:   You don't have to be scared if you say lyrics wrong or play a wrong chord. You are not alone, because we are together in it.

These findings indicate how aiming for entrainment as well as the experience of entrainment can positively contribute to the agentic participation of students in whole-class playing, as the experience of entrainment seems to be a space that students are willing to actively maintain. Moreover, the findings provide insights into the ongoing interaction between subject and both social and material environments which can be analytically separate but constitute each other (Eteläpelto et al., 2013). As entrainment points to forming a collective whole, it is clear how

dependent it is on everyone's active contribution and, on the other hand, how delicate the entity is in respect to disruptions.

Relational and individual resources of agency: Necessary conditions and supportive resources

We found that the relational and individual resources of agency include the aspects of necessary conditions and supportive resources, meaning that the agency in whole-class playing might be either limited or facilitated by the conditions or the support received. The individual level encompassed the here and now sensations, expressed as 'It hurts my fingers to play the guitar' (Student 7) or 'having a bad day and nothing succeeds' (Student 17), which can be understood as necessary conditions that might strongly limit the possibility of being agentic. Students recognised how peers play an essential role in whole-class playing and how their behaviour and participation level determine the end result of whole-class playing. Peers seemed to be a supportive resource of learning and, on the other hand, the major challenge in endeavouring to reach goals also in a musical way, meaning that peers sitting next to a student might support or disturb their work by their social or musical impulses, as the following excerpts illustrate:

Student 21:   If you are playing the same thing with someone who is good at playing piano, then you can learn from them.
Student 14:   I go to ask help from my classmate because I don't understand what the teacher is saying.
Student 17:   Once, I was the only girl in a group, and the others were boys, so I couldn't ask help from them.
Student 5:   If we all play together, then it might lose the same pace if everyone plays in different tempos.

In the interviews, students described how peers determine the level of how they are able to concentrate and learn. This indicates that student agency is dependent on the conditions and the surrounding environment. Students acknowledged the importance of being able to focus on perceiving and learning the music, which is one of the necessary conditions for whole-class playing to succeed, and how they need to use their cognitive capacity to be able to actually play, as Students 1 and 16 described:

Student 1:   If you can't concentrate, you start to play wrong chords and then it just doesn't sound good anymore. It doesn't sound right.
Student 16:   Can't concentrate because someone is yelling.

The role of a teacher was considered to be a facilitator and supporter from the students' perspective. The findings highlight how the students perceived the role and effort of the music teacher in supporting students' skills in multimodal ways to help them perceive and play music with different instruments. Students mentioned how the teacher demonstrates how to play with different instruments, comes to help if needed, plays along with them, helps to perceive music by guiding how to listen and separate details in music, accompanies them until it is not needed anymore (entrainment), encourages, shows or tells which note to play and offers options if something feels too difficult. The teacher was also described as 'increase the voice to get us to concentrate' (Student 9). Students described the kind of support they get and how, little by little, their teacher constructs the path for them so that everyone can participate with their perceived skills. Three students noted this as follows:

Student 12:   First, we sing the song and only after that, the teacher accompanies us, and we sing. And only after that we take instruments along.
Student 21:   Teacher gives options of how to play more easily. 'Try that one first' and then 'after that you can start to play more', and it makes it much easier.
Student 2:   We always do it first in an easy way and we slowly quicken the tempo. So that everyone gets to come along.

Students also stated how they could sometimes influence the song to be played and how they were occasionally allowed to choose an instrument in a particular song to be able to master their favourite instrument. The students' perspective on teacher support makes it obvious how the teacher directs support of not only the skills of an individual but also the musical taste, familiarity and entertainment as a whole. These insights from the students indicate their awareness of the teaching–learning situation as well as their active, that is, agentic, response to these conditions.

The meaning of the instructions given by the teacher was expressed as leading to very different experiences from success to failure. Instructions are an essential starting point for any kind of action in a school environment where there is a task with a goal. Instructions are therefore seen as a necessary condition for agency, as the excerpts below illustrate:

Student 14:   I don't like the teacher because I never understand what the teacher is talking and explaining about. I always ask my classmate's help (not the teacher), and if my classmate can't help, then I won't understand anything.
Student 21:   In my opinion, the teacher gives good instructions of how to get started.

These two very different comments on the perceptions of the same teacher illustrate how students within the same environment can experience the conditions in very different ways and the way in which students can be agentic in diverse ways in the same environment. These extracts above provide insights into the resources and constraints of the social and material environment (Eteläpelto et al., 2013) that create a platform for whole-class playing. The extracts point to the students' awareness of how the teacher guides their participation and provides support, and the role of peers as resources or constraints. The findings indicate that there are clearly prerequisites for agency in whole-class playing that are above all relational, such as peers and teacher, as they can either facilitate or at worst preclude the chance to be agentic.

Discussion

Our study aimed to examine students' experiences of their agency in whole-class playing from the subject-centred sociocultural perspective. The findings provide insights into how student agency takes shape and develops in whole-class playing and deepen our understanding of agency in the context of whole-class playing that goes beyond the existing theories to consider the multifaceted aspects involved: the merging in time, music as agentic, the emotions involved, the struggle of facing the unknown, our human vulnerability, making decisions about when to be open or when to answer the call of entrainment.

Our study indicates the multifaceted connection among aspects that are combinations of musical, individual, social, temporal and environmental factors, and suggests how they are intertwined tightly in the context of whole-class playing, as they all need to be regarded as agentic in order to understand the whole concept (Eteläpelto et al., 2013; Ruud, 2020). Openness involves an individual's point of view that is an emotional and shared combination of perceived skills, musical taste and familiarity, which determines the way an individual resists or enters into the exploration

and experience of whole-class playing. Entrainment is described as highly intensive, actively participated in and focused moments of success, musical satisfaction and places of safety that music itself facilitates in many ways but which is dependent on individuals investing in the collective whole and their will to maintain it. Finally, there are relational and individual resources of agency that involve the necessary conditions and supportive resources limiting or facilitating the agency of a student in whole-class playing. Our research points to the vulnerability that is required to be open to music, the immediacy of the moment in which music is shared and the struggle in the path from the individual level to the safe place of entrainment. Our findings emphasise how whole-class playing cannot be understood only by pointing out individual agency because it is a multifaceted entity and a combination of music as agentic, musical, individual, emotional and social agency.

Figure 3b depicts the dynamic interplay and the quality of connections among different themes, where the arrows indicate the directions of interaction and influence. There is a strong interplay between *openness* and *entrainment* as they overlap in whole-class playing, featuring emotions and the nature of these being shared. It is a matter of the in-time emotional experience of a being, one's social and musical constantly evolving relationships that become shared, and finally, the will and vulnerability to explore and engage with the unknown. There are *relational and individual resources of agency*, involving both social and musical impulses, which are constantly affecting or drawn on at both the individual and collective levels in whole-class playing. These aspects provide insights into how delicate the interaction both socially and musically is in this context. Thus, the key contribution of this study is recognising the resonant quality of agency in whole-class playing, which highlights the intrinsic relationship between self and others mediated through music in whole-class playing.
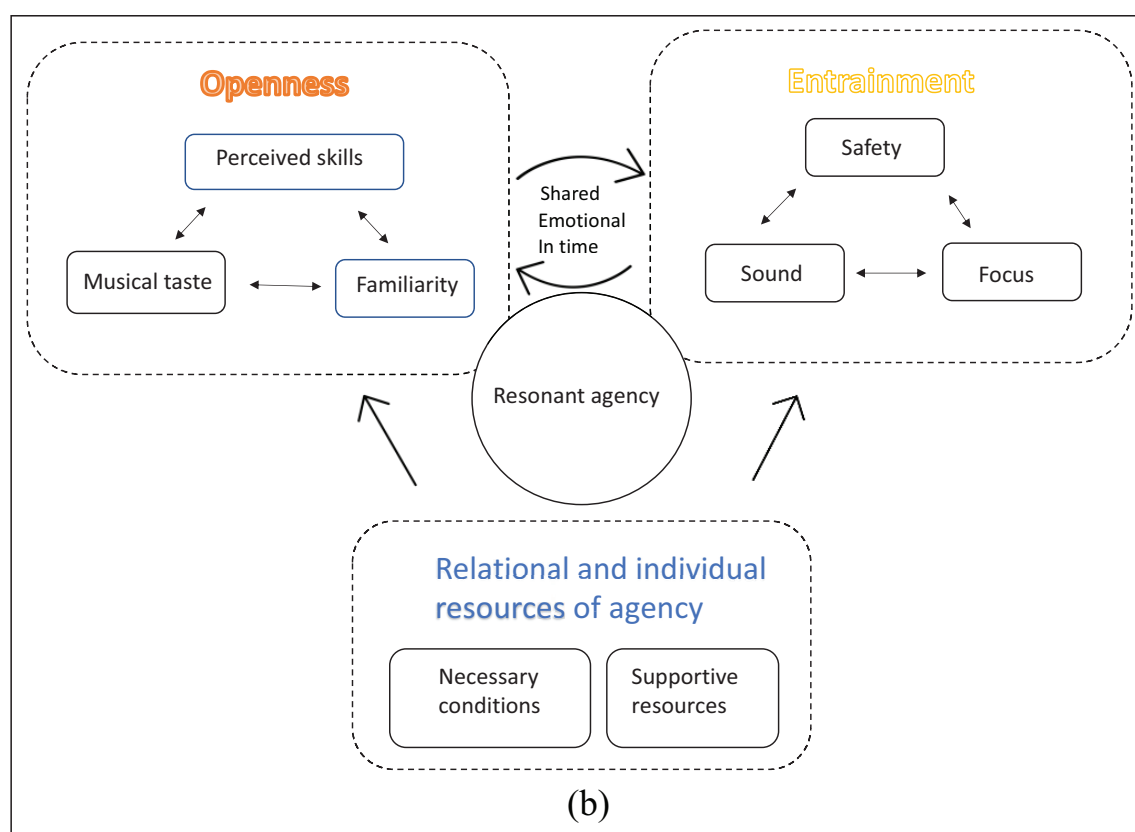

Figure 3b. Interplay among themes of resonant quality of agency.

Our study shows how being competent seems to lead to experiences of success and satisfaction with increased motivation, but how this can also bring about experiences of failure that might distance a student from participating in whole-class playing and thus make students resist activity that does not serve as meaningful anymore (Boeskov, 2018; Skinnari, 2014). The findings support understanding how emotions are closely linked to our agency and how they reconstruct our worlds, resulting in either facilitating or limiting our agency (Eteläpelto et al., 2013; Ruud, 2020; Slaby & Wüschner, 2014). In music making, the sound and its immediacy mirror concretely the skills of an individual and the nature of sound being shared because it can be heard and can make it quite a scary and vulnerable space to enter for an individual. That is why in whole-class playing, the experiences of trust and emotionally safe climate are especially important aspects in fostering agency, as the studies in tertiary educational settings have found (Jääskelä et al., 2020; Juutilainen et al., 2018). The findings indicate how the quality of instruction, help and support from both the teacher and peers affect the perceived skills of a student. In other words, agency is inextricably affected by relational resources and is continuously developing in interaction with others. Therefore, it requires teachers to demonstrate a high level of pedagogical expertise and musical competence as they work to develop not only the musical understanding and abilities of children as individuals and as a group, but also to facilitate joint explorations and curiosity towards what is musically unknown (Juntunen et al., 2014). The findings are in line with the studies from tertiary settings emphasising not only the necessity of the teacher's expertise, but also sensitivity in guiding the learning of students and planning the tasks that enable individuals to participate at their own level (Jääskelä et al., 2020; Niemi et al., 2014; Ruohotie-Lyhty & Moate, 2015).

Interpersonal entrainment (Clayton et al., 2020; Ilari, 2016) and the notions of participatory music (Ruud, 2020; Turino, 2008) may hold relevance for understanding not only how music as an agent may support the development of students' social relations and social cohesion, but also how actively aiming to foster students' experience of entrainment and the experience of being part of both a social and musical entity connects to the students' agentic participation. This study highlights the role of musical aspects, such as experience of entrainment and repetitive, continuous and dense musical texture, that together create places of safety and possibilities to participate. This participatory element of the joint playing of music underlines the value of individual contribution, presence and in-time musical interaction that also supports the understanding of music as a 'human encounter' creating mutual commitment (Juntunen et al., 2014; Karlsen, 2011; Ruud, 2020; Small, 1998). However, as there is a sound in whole-class playing, a unique moment that is a little different every time and as it primarily depends on individuals' contributions musically and socially, it is a new, unpredictable collective musical exploration that individuals have to be willing to enter. We believe that this study sheds light on the actual demands (Kompridis, 2011) made on students, the complexity of social music making (Boeskov, 2018) when asking them to play together and the vulnerability they feel when entering into an unexplored and active openness to make room for responding to the call of others and music itself. This study contributes to the discussion about agency in music educational environments by highlighting the intertwined nature of individual, social, emotional and musical aspects being present in joint music making.

There are some limitations to this study. First, there was only one class of sixth graders represented who had the same music teacher. It would be worthwhile to conduct a study with different classes from different music teachers to get an even richer understanding of the experiences of students. In the future, it would also be valuable to investigate how a teacher's behaviour in the classroom and the quality of instruction affect the agency of students. Second, the study was conducted in a Finnish educational context of music which might differ from music education in other school systems and cultural contexts. Future research should include students in different countries to see whether the findings can be generalised. Nevertheless, our study contributes to

understanding the complexity, richness and resonant quality of the notion of agency in whole-class playing, which also verifies the relevance of music as an essential school subject. Future research could also explore whether the resonance of agency is present in other contexts. Listening to the experiences of students is especially important in creating new pedagogical approaches to support student agency in whole-class playing and for teachers to be able to transform their classrooms into platforms that facilitate and enable students to be agentic.

Declaration of interest statement

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Appendix

The questions used in the interviews were as follows:

Do you listen to music in your free time? What? Is there an instrument that you especially enjoy playing, and why? Is there an instrument that you don't enjoy playing, and why? If you begin to play a new song with your class, what do you usually do, and how does the process go? When you begin to play a song with your class, what are the things leading you to participate? Are there things that make you not want to participate? In your opinion, what is the nicest thing when your whole class plays and sings together? Is there something that makes it not so nice? What does your teacher do when you start to play together as a class? How does your teacher teach you?

III

EXPLORING AGENCY AND ENTRAINMENT IN JOINT MUSIC-MAKING THROUGH THE REPORTED EXPERIENCES OF STUDENTS AND TEACHERS

by

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Exploring agency and entrainment in joint music-making through the reported experiences of students and teachers

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This qualitative interview-based study draws on the reported experiences of students and teachers to explore how agency and entrainment resource and constrain each other in joint music-making. The participants were 23 students of Grades 6 and 11 music teachers from different primary schools. The qualitative content analysis of the 11 student pair interviews and 11 one-to-one teacher interviews indicated that experiences of music-related interpersonal entrainment intertwine with different dimensions of agency. In the analysis, four themes were identified as follows: presence, belonging, safety, and continuity. These findings provide insights into the relationship between agency and entrainment in classroom-based joint music-making and provide a novel lens through which to examine the complementary experiences of students and teachers. This study builds bridges between the concepts of agency and entrainment in the context of music education, offering theoretical clarification as to how and why joint music-making can be considered an intersubjective activity that fosters group cohesion and social interaction. The findings further present a view of the constitutive nature of the relationship among agency, entrainment, and intersubjectivity in joint music-making. The findings offer educators concrete grounds for using joint music-making as a platform for an agency.

KEYWORDS

agency, entrainment, joint music-making, music education, teachers, students, intersubjectivity

Introduction

A number of studies show how singing together promotes one's wellbeing and has a significant impact on various factors of social cohesion (Pearce et al., 2015; Salminen, 2020). Many individuals find joint musical action profoundly and emotionally satisfying—being part of socially constructed music-making results in positive experiences and emotions (Pearce et al., 2015). Feeling, hearing, and sharing togetherness through music are experiences that many of us can identify with. These moments and encounters with music are highly affective, relational in nature, and based on communication that goes beyond words (Trondalen, 2016). When individuals come together to dance or to make music, their joint action is characterized by entrainment, that is, mutual sharing and complex rhythmic timing (Phillips-Silver and Keller, 2012). However, little is known regarding how entrainment benefits from and contributes to student agency, that is, students' willingness, capacity, and interest to act (Skinnari, 2014; Rajala et al., 2016) in music education. Thus, this study explores how agency and entrainment resource and constrain each other in joint music-making. As a qualitative study, this research focuses on the social nature of music and the potential of music to help children move beyond a sense of individual self to a shared sense of "us."

Entrainment in sociomusical contexts is used to describe and characterize in-time interactive synchronization between two or multiple participants through music (Phillips-Silver and Keller, 2012; Cross, 2014). Although entrainment is often regarded as a spontaneous neurophysiological process influencing cognition, the concept of interpersonal entrainment, defined as the interaction and coordination between human beings mediated by sound and movement (Clayton et al., 2020), highlights entrainment's social nature. Moreover, the social nature of entrainment is highlighted in different levels of musical entrainment. One level is intra-individual entrainment which involves the perception of metrical structures in music and the coordination of actions. A second entails inter-individual and intra-group entrainments, which pertain to coordinating actions between individuals in a group, while a third is an inter-group entrainment which includes coordination between different groups (Clayton, 2012). These different levels emphasize the embedded nature of social context, conscious awareness, the experience of being in time, and the contribution to sociality (Kim et al., 2019). They also suggest that entrainment can also be explored and examined at different levels through different approaches (Clayton et al., 2020).

Although interpersonal entrainment is affected by social considerations, such as the participants of the group, their interactions and the environment, resources available, the knowledge the participants hold, and how their internal representations enable them to participate (Clayton et al., 2020), these aspects of interpersonal entrainment have received little attention to date. Recognizing that interpersonal entrainment is characterized by intentionality, active participation, and mutual sharing (Trondalen, 2016; Clayton et al., 2020) creates an opportunity to explore joint music-making from a qualitative rather than quantitative perspective. Our study took place in Finland, where joint music-making is one of the core curriculum's central methods used in music education in basic education (EDUFI, 2016). Joint music-making involves every student in the classroom playing together as a group, despite their background or perceived skill. In joint music-making, students are encouraged to try different instruments, body percussion, a range of musical genres, and various ways of participating in promoting their musical and social skills. The goal is to teach and bring the whole class of students together to play at the same time and to experience interpersonal entrainment through musical activity. While including joint music-making as part of the curriculum is an opportunity for students to develop the ability to be entrained with others and to be in time (in sync) with others (Cross, 2014), it cannot be assumed that students will automatically enter into joint music-making. Arguably, as in other areas of the curriculum, joint music-making requires skills that develop through practice and the willingness to act and participate (e.g., Skinnari, 2014; Rajala et al., 2016). In other words, joint music-making is in part resourced by the agency of students.

Student agency has become a central concept in recent educational research (Niemi et al., 2015; Kangas et al., 2017; Vaughn, 2020). It is widely acknowledged that supporting the agency of children advances the development of a responsible society by increasing their competence and motivation to encounter changes in life, advancing equity, and encouraging them to take responsible actions that will make a difference (Vaughn, 2020). In this study, we use a sociocultural conceptualization of agency as a dynamic process interdependent on the individual and social aspects where a subject actively chooses, acts, and reconstructs their worlds (Eteläpelto et al., 2013), thus complementing the social considerations of entrainment. Furthermore, student agency is fostered through *a student's experience of having access to or being empowered to act through personal, relational, and participatory resources, which allow him/her to engage in purposeful, intentional, and meaningful action and learning in study contexts* (Jääskelä et al., 2020, p. 2).

However, to date, a limited amount of research has shed light on student agency in music education, where interpersonal entrainment plays a central role in the joint music-making of everyday classroom settings. Furthermore, little is known about children's or teachers' experiences in this process. Thus, the current study contributes to the discussion about the agency not only by exploring the relationship between entrainment and agency but also by investigating both student and teacher experiences of the process to gain an understanding of joint music-making as a forum for the

agency. The aim of this study is to explore children's and teachers' experiences of joint music-making and to ascertain whether and how student agency contributes to joint music-making and whether entrainment supports the agency of students. This is particularly important when we are developing new pedagogical practices and transforming music education practices to support human agency and to understand the social aspects of interpersonal entrainment.

Subject-centered sociocultural approach to agency

In this study, we drew upon a subject-centered sociocultural approach to conceptualize agency (Eteläpelto et al., 2013). Previous studies on student agency have indicated how both teachers' and students' active participation in education leads to effective learning, and how teaching practices can increase the agency of the students (Niemi et al., 2015; Vaughn, 2020). The subject-centered sociocultural approach (Eteläpelto et al., 2013) views individuals as feeling and willing agents who actively and continuously reconstruct their realities by choosing and considering what is worth pursuing within a complex interplay of individual, social, temporal, cultural, and material aspects of agency. This approach conceptualizes agency as a constantly evolving process over time in relation to social and material environments in terms of their constraints and resources (Priestley et al., 2015; Jääskelä et al., 2020). The work of Jääskelä et al. (2020) highlights how student agency in tertiary settings relates to certain *individual* resources, such as competence beliefs, self-efficacy, and intrinsic motivation, *relational* resources including emotional atmosphere, experiences of trust, support, and power relations, and finally, *participatory* resources referring to subjects' experience of the opportunities for active participation, influencing, and making choices. Eteläpelto et al. (2013) argued that agency should not be analyzed by focusing on the events of action, as the agency can manifest itself eclectically. Rather, the subject's interpretations, meanings, and purposes in the process of manifesting agency need to be considered, which can appear, for example, as resistance to or purposeful maintenance of existing practices.

A subject-centered sociocultural approach connects with the socio-cognitive perspective of Bandura (1986, 1999) in that perceived self-efficacy is the most central foundation of human agency. From a socio-cognitive perspective, the agency is approached by emphasizing the individual capacity to influence and produce the desired effects by one's actions, where the belief in that capacity is intrinsic to the evaluation of goal setting. While a socio-cognitive perspective (Bandura, 1986, 1999) usefully highlights the individual experience of determination, self-esteem, and competence, which play an influential role in motivation, the focus on the individual tends to bypass

the significant role of others and environmental conditions in the realization of agency. Nevertheless, the subject-centered sociocultural approach acknowledges the processes by which subjects construct and practice their agency and focuses on how the subject learns through these processes (Eteläpelto et al., 2013). Furthermore, it is acknowledged that agency cannot be considered as a power that an individual possesses but, conversely, as a dynamic process where the agency can be achieved through engaging with unique temporal–relational contexts and environments (Emirbayer and Mische, 1998; Biesta and Tedder, 2007). Thus, the agency can only be realized in the present moment; it cannot be separated from the involvement of the past and the future, or the available resources or structural factors provided by the environment (Biesta and Tedder, 2007; Eteläpelto et al., 2013; Priestley et al., 2015).

An increasing amount of research acknowledges the role of emotions in enhancing or hindering the actions and agency of an individual (Eteläpelto et al., 2013; Slaby and Wüschner, 2014; Ruud, 2020). In particular, tertiary educational research has indicated how an emotionally safe climate in learning situations facilitates student agency (Ruohotie-Lyhty and Moate, 2016; Juutilainen et al., 2018; Jääskelä et al., 2020). As emotions are the primary indicators of what we regard as potential doing or potential happening (Slaby and Wüschner, 2014), we believe emotions are a significant prerequisite in the process of agency as they demonstrate resistance or active participation in social action. The research on students' agency recognizes the presence and range of emotions children experience and use to inform and understand their agentic action and participation (Kirby, 2020; Mameli et al., 2021). Students' agency is not just carrying out the instructions of teachers, but students' actions alter the shared space of the classroom, the possibilities of teaching and learning activities, and their experiences (Kirby, 2020). Arguably, this creates a foundation for future action or inaction (Emirbayer and Mische, 1998).

Approaching agency through interpersonal entrainment and intersubjectivity in joint musical action

In addition to student agency, musical agency, as an important part of music education practices, has been acknowledged in research (Karlsen, 2011; Juntunen et al., 2014; Saarikallio, 2019; Ruud, 2020). Musical agency refers to both individual and collective ways of interacting with music (Karlsen, 2011), becoming aware of one's personal, relational, and material resources (Ruud, 2020), and being a resource for development, empowerment, and identity construction (Saarikallio, 2019). For example, in Karlsen's (2011) work, the individual dimension of musical agency includes aspects of how one can use music to extend one's position in the world and to construct oneself in relation to others, such as perceiving and

playing music, shaping self-identity, and using music for self-regulation. The collective dimension of musical agency (Karlsen, 2011) includes aspects of how collectively, through music, it is possible to explore social relationships, regulate and structure social encounters, and affirm and establish collective identity.

Musical entrainment, to a degree, is present from the early stages of a life span (Winkler et al., 2009; Zentner and Eerola, 2010), and it continues to develop and change over time. Entrainment for a primary school student, for example, is not as precise as for professional musicians (Clayton et al., 2020), which suggests that entrainment is something that can be partly learned and developed. Entrainment has been widely studied in music education and music therapy contexts, as it has been regarded as a significant factor in uniting humans throughout their life span. Rhythmic entrainment has been argued to result in prosocial behavior and foster the social competence of children (Kirschner and Tomasello, 2010; Ilari et al., 2018). Furthermore, in the work of Mogan et al. (2017), synchronous actions were found to affect prosocial behavior, perceived social bonding, social cognition, and positive affect. As previous studies have indicated that entrainment contributes to prosocial behavior and social cohesion, they justify entrainment being further studied from a social perspective. Thus, in our research, we focus on the social dimension of interpersonal entrainment in a joint music-making context. From the social theory perspective, musically entrained behavior, like music and dance, connects profoundly to human sociability (Clayton et al., 2020), which plays a central role in the conceptualization of a subject-centered sociocultural approach to agency (Eteläpelto et al., 2013).

Research suggests that synchrony drives prosocial effects, such as cooperative behavior and empathy, through affective mechanisms (Mogan et al., 2017). Also, Launay et al. (2016) have argued how synchrony, active engagement in musical activities, and moving together influence social bonding by emphasizing the role of neurohormones, such as oxytocin and endorphins. Furthermore, Trost et al.'s (2017) work illustrates why entrainment could be experienced as a desirable and pleasant state, as they found that a level of mostly positive and arousing emotions is induced through perceptual, autonomic physiological, motor, and social entrainment. However, although the mechanisms between entrainment and emotional experiences remain unclear (Clayton et al., 2020), the connection between affective entrainment of sharing affective states between individuals in joint music-making and social bonding has been strongly suggested (Phillips-Silver and Keller, 2012). Thus, entrainment in joint music-making should be understood through social and interpersonal synchronization with complex affective experiences, in addition to synchronizing with the beat alone (Phillips-Silver and Keller, 2012; Clayton et al., 2020).

The work of Clayton et al. (2020) proposes a new model of interpersonal entrainment that compares two separate components, synchronization and coordination within musical contexts, in terms of their role in culturally shared knowledge and the connection between entrainment and social processes. They argue that there is a need to study this phenomenon in relation to other social processes in order to increase our understanding because, alongside aspects of evolution, development, psychology, and neurophysiology, there are also social and cultural dimensions that have a clear impact on interpersonal entrainment. They describe how social, material, environmental, and cultural aspects affect interpersonal entrainment, and how knowledge, in other words, being able to plan and anticipate, plays an important part in the process of interpersonal entrainment. As participation and engagement are necessary for the realization of interpersonal entrainment in joint music-making, it requires highly agentic action and will from an individual to take part in social music-making. In other words, entrainment in collaborative musical action does not just happen; rather, individuals have to want, be able to, and actually act for entrainment to be possible. Repetition and loops open participatory musical forms and create a sense of safety (Turino, 2008), whereas the dense musical texture hides "mistakes" made by individuals and eases the contribution at different skill levels (Ruud, 2020). Ruud (2020) suggests that the participatory aspect of making music together emphasizes contribution and democracy among participants instead of musical skills. Possibly, the music itself creates a safe environment, thus resourcing opportunities for agentic action by students.

As in the work of Phillips-Silver and Keller (2012) and Trondalen (2016) points to the significance of affective experiences and intersubjectivity (Stern, 2004) when seeking an understanding of the relational nature of joint music-making in the here and now. According to Trondalen (2016), intersubjectivity, at the practical level, encompasses awareness and the exchange of affects in time, as well as experiencing each other through the body, affect, and such experiences of "I feel that you feel that I feel." Microprocesses, such as movements, facial expressions, timing, and intensity of moment to moment, are unspoken and relational, and they form the basis for subjectivity, togetherness, possibilities of action, and language itself in the intersubjective process among participants (Stern, 2004; Trondalen, 2016). Similarly, Vass (2019) argues how musical encounters, embodiment, and mutual resonance open the way to dialogical space that is a prerequisite for intersubjectivity, the nature of which reaches beyond the verbal world and intellectually constituted thought. Furthermore, Vass (2019) highlights students' embodied agency in the joint musical activity that opens a unique way to the center of learning through the embodied experience of knowing and relating. These aspects of intersubjectivity in joint music-making elucidate the multimodal environment and the available and constraining resources for the construction and development of agency, as likewise, intersubjectivity is regarded

as a key quality of agency (Damşa et al., 2010; Vass and Littleton, 2010).

Becoming entrained points to conscious relational experiences and the non-verbal interactive processes that are inseparable aspects of joint music-making (Trondalen, 2016). As Cross (2014) highlights, interaction in music is something other than interaction in language because music can provide a space to sense others in which the participants can align their attitudes and motivations with those of others. Similarly, Trondalen (2016) emphasizes that through verbal conversation, it is possible to describe the meaning of musical experiences, but it can never replace the experience of meaning at the non-verbal level. These experiences also shed light on *implicit relational knowing*, that is, one's feeling of oneself and others in the here and now when making music together. Implicit relational knowing emphasizes one's feeling of how to do things with others in a musical presence, as its essence lies in the attunement of affect and involves joint intersubjective recognition. This expands an individual's state of consciousness and increases the opportunities to create new ways of being together (Trondalen, 2016). Thus, in this study, joint music-making is considered to be a holistic, highly interactive, embodied, and affective process among individuals through music, which creates a platform for subjective experiences and agentic action. While measurements provide insight into physiological changes and alignments, quantitative research provides little insight into the conscious activity of participants. Interpersonal entrainment no doubt involves spontaneous neurophysiological processes, but more understanding is needed about the intentional participation of individuals as a part of entrainment as well as the individual, social, and cultural processes that influence interpersonal synchronization and coordination in music.

Aim of the study

In the present study, we explored the relationship between entrainment and agency through the reported experiences of students and teachers in joint music-making. The following research questions focused more specifically on:

(1) What characteristics of agency are present in the reported experiences of students and teachers in joint music-making?
(2) In what ways do agency and entrainment resource and constrain each other in joint music-making?

Methodology

This qualitative interview-based study draws on the reported experiences of 11 teachers and 23 students. The findings reported here belong to a larger study examining different aspects of music education in Finnish primary education. The overall dataset comprises 11 teacher interviews and 11 student pair interviews. The first study focused on teacher beliefs about student agency in whole-class playing, in which an abductive approach was used to identify and examine the manifestations of student agency and musical agency (Stolp et al., 2022a). An abductive approach (Timmermans and Tavory, 2012) was chosen as it allows the interplay between data and existing theories as well as the extension of theoretical perspectives through the creative process. The abductive analysis was double-coded by two coders for teacher interviews, and intercoder reliability was 93.75%. The findings highlight the significance of student agency in joint music-making from the teacher's perspective. A second study examined students' experiences of whole-class music playing (Stolp et al., 2022b). A complementary insight from the two initial studies was the significance of interpersonal entrainment in relation to agentic activity and joint music-making, described as, for example, *"The most significant thing in joint music-making is that through music, through musical experience, and with the help of music, you become part of something bigger than yourself and you have a special role in the group. That you kind of disappear and you become part of an entity. Once you get the experience that you are part of the wholeness of the sound, with the sound you produce, and once the wholeness sounds very good, you want to do it again"* (Teacher 10) and *"Everyone is focused and concentrated on the same song. The best thing is that we have a good rhythm, and everyone is participating actively and seriously"* (Student 10). The study reported here brings the teacher and student interview datasets together to specifically explore the interpersonal entrainment resources and benefits from student agency in joint music-making.

Participants

The individual teacher and student pair interviews were conducted when strict guidelines were in place due to the COVID pandemic. While the pandemic significantly limited access to research participants, the participants in this study include 11 music teachers and a class of sixth-grade students (23 students, 12–13 years old). In Finnish schools, there is usually only one specialist music teacher who teaches music to nearly all pupils in one comprehensive school, although a willing and qualified class teacher can also teach music. The teacher participants from various schools in Central Finland were recruited through school email or social media. Student participants were recruited *via* one of the music teacher participants. The selection of Grade 6 students was guided by the timetables of the school and the interviewer (first author) as well as the willingness and ability of the students to participate in the pair interviews.

TABLE 1 Backgrounds of the participants in the study.

Participants	Number	Age	Male/Female	Work experience (teachers)	Education (teachers)
Teachers	11	28–55	2/9	2–25 years	Class teacher ($n = 3$) Music teacher ($n = 4$) Class + Music teacher ($n = 3$)
Students (Grade 6)	23	12–13	11/12		

With regard to increasing the diversity of the teacher participants, we sought variation in their educational background, the schools they taught in, work experience, and age. All of the teacher participants taught music in Grades 1–6 in Finnish basic education. Three of them were qualified as music teachers and three as class teachers, and four of them had the qualification of both music and class teachers. The teacher participants' backgrounds, including their gender, age, education, and work experience, are presented in Table 1. Due to the pandemic, it was not possible to recruit more student participants; nevertheless, the class of 12–13 years old included 11 male students and 12 female students with a variety of musical backgrounds, ranging from enthusiastic hobbyists to those who only regarded music as a compulsory school subject.

Ethics and procedure

Before contacting the student participants, we contacted the ethics committee of the university for the evaluation of the need for an ethical review to be carried out for our study. However, consent from student participants' guardians was enough to comply with the guidelines of the Finnish National Board on Research Integrity (TENK, 2019). No ethical review was required. Consent forms were collected from all teacher participants. Permission for the study was obtained from the municipal school authorities and the principals of the schools involved, and teacher participation was voluntary. Before data collection, the teacher participants, as well as the student participants and their guardians, were informed by the first author about the purpose of the study, methods, and ethical commitments, after which oral consent was given by the students, and written consents were signed by their guardians and teachers. Prior to the student interviews, the first author also visited the students' class to give them information, such as explaining that the questions would be about their experiences of joint music-making and to reassure them that there would be no need to prepare for the interviews. The students were also told to just be honest when answering the questions and that they would be able to ask questions. Teacher participants were interviewed in October 2020, and the students were interviewed during normal school hours on the school premises in April 2021.

Student interviews

Semi-structured interviews (Tracy, 2013) were conducted by the first author and guided by the subject-centered sociocultural approach to student agency (Jääskelä et al., 2020) and musical agency (Karlsen, 2011). The class teacher divided the student participants into pairs and one triad prior to the interviews by allowing the students to freely choose their pairs. The questions were designed so that the students could easily answer descriptively and concretely but also be able to share their experiences and perspectives of joint music-making. The questions concerned the students' relationships with music and their actions in the process of joint music-making. For example, a typical question was as follows: *When you begin to play a song with your class, what are the things encouraging you to participate?* As theories (Karlsen, 2011; Jääskelä et al., 2020) indicate, there are individual, relational, participatory, and musical resources of agency that either foster or limit agency; our questions were formed in a way that participants could give us examples of what affects agency in joint music-making. All the questions used in the interviews are presented in Appendix 1. The interviews (lasting from 6 to 15 min) were conducted as pair interviews (with one triad) in a small room during the lessons. It was noticeable during the interviews that when one student shared their reflections, their pair often built on this reported experience by sharing something similar or using this as a contrast. The interviews were recorded, transcribed, and anonymized. The final dataset included 103 pages of transcribed text (double-spaced, 12-point font).

Teacher interviews

Interviews were conducted remotely on a one-to-one basis by the first author *via* Zoom or Microsoft Teams. Before the interviews, the teachers were asked to complete a short questionnaire on their background information, including their gender, age, education, and work experience. This information was used only to ensure the diversity of the sample and was not used in the analysis. The semi-structured interviews (Tracy, 2013) were guided by a subject-centered sociocultural approach to student agency (Jääskelä et al., 2020) and musical agency (Karlsen, 2011). The questions allowed teachers to reflect on their own experiences and meanings of being part of joint musical action, and space was provided for them to share their

FIGURE 1

The process of theme development after Vaismoradi et al. (2016).
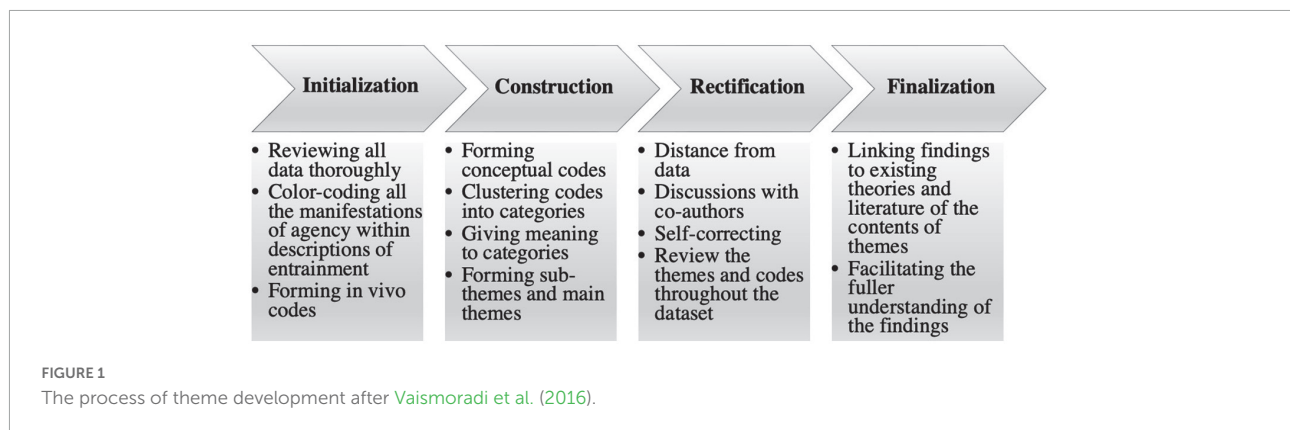
experiences and perspectives of joint music-making playing as teachers. An example of an interview question is the following: *In your opinion, what affects how a whole group of students starts to play together, and how is the joint music-making playing situation built?* All the interview questions are presented in Appendix 2. The average length of interviews varied from 30 to 60 min, and the recorded interviews were transcribed and anonymized. The final dataset included 260 pages of transcribed text (double-spaced, 12-pt. font).

Data analysis

The data were analyzed within a qualitative content analysis framework (Vaismoradi et al., 2016). While our interest in the agency in music education informed the data collection process, our four stages of analysis included both abductive (first stage) and inductive (second, third, and fourth stages) approaches to be as open as possible to the themes raised by the student and teacher participants. In the analysis, we adapted Vaismoradi et al.'s (2016) theory of the theme development process, as shown in Figure 1. The goal of the qualitative content analysis was to identify the themes that reflected the experiences of the participants regarding agency during entrainment in joint musical action.

Teachers' interviews were double-coded by two independent coders for calculating intercoder reliability, which was 93.75%. Since the first author ran the double-coding process of the teachers' interviews, she was also responsible for the coding of the student interviews, which were not double-coded. However, the third stage of the data analysis process included going through the data analysis with the co-authors and discussing the codes and themes as there were also some unclear codes that were placed together under certain themes to ensure the integrity of the analysis. The overall analysis consisted of four stages. The first stage, which was abductive, was to become familiarized with the data through careful rereading, identify the manifestations of agency based on the individual, participatory, and relational dimensions of student agency in the descriptions

of experienced entrainment in the transcribed text, and utilize them as *in vivo* codes. The second stage was to sort the *in vivo* codes, based on their similarities, into conceptual codes and further sort these codes into potential themes (see Figure 2). After 11 student pair interviews and 11 one-to-one teacher interviews, data saturation was reached, meaning that the data were collected until nothing new was apparent (Tracy, 2013). Third, after distancing, discussions with co-authors, and self-correcting, potential themes were reviewed to ensure that the themes were representative of meanings that arose in the data. The final stage in the analysis was to examine the findings in relation to existing theories and literature to facilitate a deeper understanding of the findings.

Findings

The findings of the study are presented through four themes identified in the analysis: presence, belonging, safety, and continuity, which opens a unique pathway to view the relationship between experiences of agency and subjects' experiences of entrainment and the resources and constraints involved. Each theme is presented in its own sections.

Presence

When discussing playing together as a group, both student and teacher participants emphasized in many ways the meaning of being present in the moment, here and now. In a way, presence crystallizes the collective, focused moment where individuals become visible and aware of not only their environment and themselves but also others, as Teachers 11 and 9 described:

> Teacher 11: It starts from the moment, while we play, when I get to engage every single student in that very moment by saying that "you are here now, I see you, and you are part of this thing that we do together" and "you, as yourself, are

part of this and it is enough" and "how cool [it] is that you are here and part of our band!"

Teacher 9: It is like living the music in the moment together. It means that our awareness and our attention is focused on the mutual thing that we are doing together. It requires that our attention cannot be focused on anything else at that moment. It is, like, here and now, meaning that it is something you cannot do remotely tomorrow or alone during the break.

Students also described entrainment in their experiences of joint music-making as having a "good rhythm," and as intensive moments of collective concentration and focus, which they seemed to be willing to aim for and maintain. Experiences of entrainment made them feel positive emotions when succeeding or, on the contrary, disappointment if the level of engagement of peers was low, as indicated in the following extracts:

Student 1: When everyone concentrates and participates and succeeds it makes you very happy.

Student 10: Everyone is focused and concentrated on the same song. The best thing is that we have a good rhythm, and everyone is participating actively and seriously.

Student 8: I think it is because we are playing in the same rhythm and we all play the same thing, and when everyone concentrates, then everyone stays in the same rhythm.

Student 12: The attitude of the others, like how they come to participate and if everyone concentrates. If they don't, you can't concentrate either.

These extracts indicate how experiences of entrainment, which is often related to an unconscious body synchronization process, connect not only with various aspects of musical agency, such as consciously perceiving a good rhythm that participants produce collectively by playing their instruments but also becoming aware of relational and individual aspects of agency, such as peers' support, active participation, and motivation.

Interestingly, teacher participants provided insights into how presence in joint music-making is a strongly embodied experience, as teachers described how they became aware of themselves physically. Playing together was felt in their bodies as "resonance" (Teacher 9), "vibe" (Teacher 2), or how "the body just starts to go along" (Teacher 7). There were also comments in the teacher interviews about how the presence in music was experienced bodily by their students. Teacher 8

described how a student would refuse to play any instrument, but as the playing started, the student immediately started to physically "sulk in tempo." Teacher 7 described how when there were not enough instruments for all students, those without instruments began swinging and moving to the music while others played.

The findings indicate how presence in joint music-making includes becoming aware of the embodied experience but also actively sensing and becoming aware of shared feelings that are present in the moment, as in the following comments from teachers and students:

Teacher 10: There is always shared emotional experience that takes shape in playing together, like enthusiasm for example. I can see the enjoyment from their faces.

Teacher 1: It was a memorable experience for all of us, me and the students, because we were so excited. We just went to play together during the breaks because we enjoyed it.

Teacher 6: It is a kind of emotional language, or a way to experience emotions together. You have to experience it and be part of that before you can give meanings to your experience.

Teacher 11: We [students and teacher] always stop at some point just to reflect on how we feel after we manage to play something together.

Student 9: The moments when everyone is able to concentrate and is happy in what they do are precious moments. It feels like we have a good team spirit in those moments.

The findings indicate how presence and the immediacy of the moment in joint music-making are elements that often defuse the resistance of a student and help them to focus. Teachers described how "a resistant student changes course quickly" (Teacher 11), "no one bothers to fool around" (Teacher 1), and 'hyperactive and unfocused students just start playing without a problem" (Teacher 10) once the music and playing start.

The findings point to the active and intentional way of becoming aware of the moment with music, self, and others, engaging with the moment by concentrating and participating, and feeling the shared positive emotions that are taking shape through the collaborative act. These experiences connect with individual resources of agency, such as motivation and self-efficacy, through experiences of success and positive emotions,

FIGURE 2
Phases of coding and theme development.
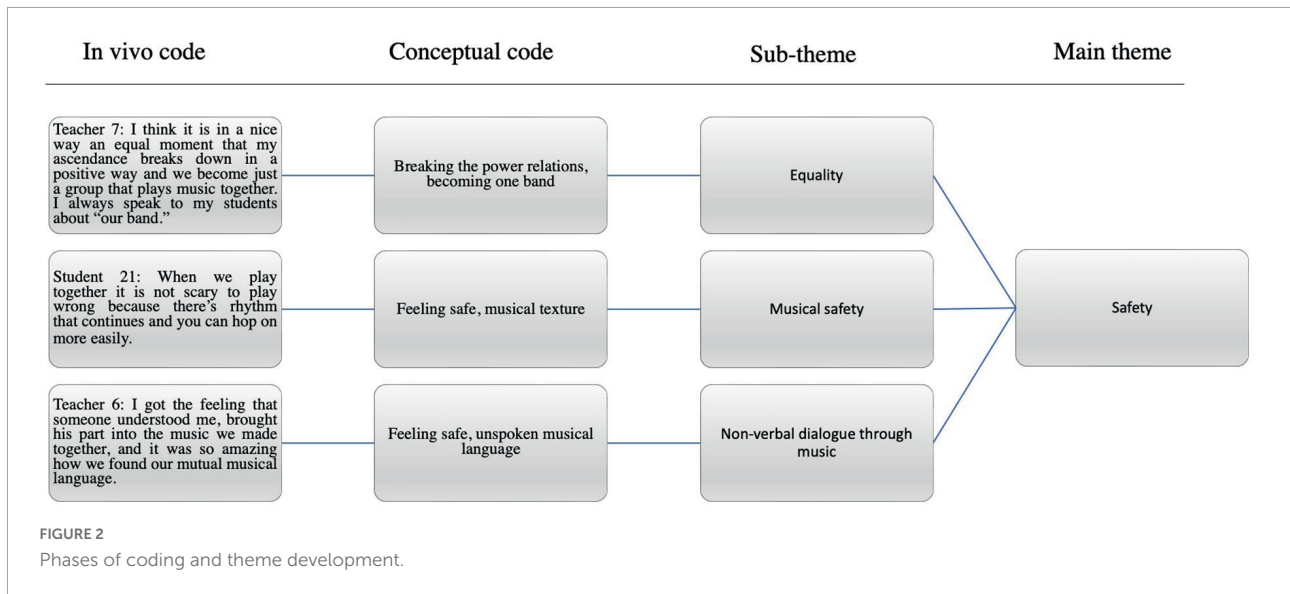
but also with relational resources, such as peer support, which intertwine with participation activity and a will to be part of an experience. Becoming entrained with others in these experiences leads to increased agentic participation, affect attunement, and joint focus in the very moment, which are central aspects in intersubjectivity and supply feedback to agency. However, the environmental constraints, such as peers having problems with concentration and the availability of instruments, during joint music-making have a significant impact on the participatory resources of agency, as to at what level it is possible to take part in the activity. It is, after all, that "music lives in time. It is a unique sound that we produce in this very unique moment, and this sound and moment will never come again" (Teacher 10).

Belonging

The student and teacher participants provided insights into the belonging and sense of togetherness during joint music-making in both social and musical dimensions, a moment before students "disappear" into the entity and become a collective "one." They described how, through music, they perceived themselves as being part of a musical and social entity, through which they experienced strong positive emotions, such as feelings of success or enthusiasm, and which further strengthened their agency such as their willing to actively take responsibility in entering or maintaining activity. These descriptions of musical experiences where one disappears and becomes part of an entity with the help of music, and being part of the wholeness of the sound which sounds good, are interpreted as experiences of entrainment. Teacher 10 described this:

> The most significant thing in joint music-making is that through music, through musical experience, and with the help of music, you become part of something bigger than yourself and you have a special role in the group. That you kind of disappear and you become part of an entity. Once you get the experience that you are part of the wholeness of the sound, with the sound you produce, and once the wholeness sounds very good, you want to do it again.

Describing a special role in the entity and producing sound underlines the individual aspects of agency, such as active participation and competence, and the relational aspects, such as becoming collective "one" with and with the help of peers. By mentioning "you want to do it again" points to the individual aspect of agency where motivation, which is central to agency, seems to be fostered through the musical experience of entrainment. Moreover, there are both individual and collective aspects of musical agency present in this extract: actual playing, perceiving music and its elements, and collaborative musical action.

The theme of belonging was based on two sub-themes, the social and musical, which could partly be analytically separated but overlapped and constituted each other. In the interviews of students, these sub-themes were easier to separate, whereas, in teacher interviews, they were intermeshed in a way that made it almost impossible. The significant factor in all these experiences of belonging, in terms of the social and musical aspects, is that they awaken positive emotions that are closely linked to agency (Slaby and Wüschner, 2014) when considering and choosing what is worth pursuing or maintaining (Eteläpelto et al., 2013). In the student interviews, the social aspect was highlighted by Students 8 and 9, who stated how they "like to play with their class because you don't have to be alone" and by Student 11:

> The best thing is that we have a good team spirit when we play together.

There were a great number of comments by the students describing the musical togetherness, that is, actively perceiving the music and adapting their acts to collaborative musical action, which seemed to lead to satisfaction and experiences of success, as can be seen from the following comments:

> Student 13: It sounds like real music when we all play together.

> Student 4: The best thing in joint music-making playing is the fact how it sounds. When everyone plays instruments in the same tempo, it sounds really good.

> Student 8: The best thing is what the end result sounds like if we succeed.

> Student 17: We sound like a real band.

However, there were also comments from both students and teachers about how failing to maintain entrainment makes the sound unpleasant and causes feelings of failure, and how the entity is fragile and dependent on individuals and their efforts:

> Student 5: If we all play together, then it might lose the same pace if everyone plays at a different tempo.

> Student 4: If the class just messes around and does not succeed, then it just sounds stupid.

> Teacher 9: It doesn't work if we don't listen to each other. If we are missing the joint tempo, it won't work, and you can hear it and feel it in the same way you can hear and feel it when it works. And then the student gets the feedback right away if it works and whether he succeeded. That now we succeeded together. The feedback is immediate when something succeeds.

> Teacher 7: Unfortunately, if the drummer, for example, can't maintain the tempo, the whole group can get the experience of how the whole thing collapses.

In the teacher interviews, the social and musical aspects of belonging were more intertwined. Teachers shared their own meaningful experiences of joint music-making and moments of entrainment, as well as their experiences of their students playing together. These experiences shed light on the emotional aspect of both agency and entrainment, where the experience of entrainment opens the way to a sense of togetherness and which arouses positive emotions affecting and expanding participants' beliefs about what they are capable of and willing to enter, as can be seen in the following comments:

> Teacher 4: To me, the significance is in making something big together. Something much more than my own part alone. That together you can do more than you can alone. It is just the best thing being part of the great sound machine. Like it is such an amazing feeling if I play this, and you play that, and the entity sounds so good.

> Teacher 2: That you feel you can have an impact on the joint sound that is produced together, realize your own part in that entity and how your part influences the whole. That you hear what the others are doing and perceive yourself as a part of an entity. Those are rewarding and motivating experiences.

> Teacher 3: It was super nice when the class got the song to sound good together! When it starts to sound good, whether it was sung or played, it is a totally different thing to experience the moment of succeeding as a group than alone. I asked them, "Did you all notice?" and they were gasping, "It sounds ridiculously good!"

> Teacher 7: Maybe the feeling when you notice that this is a shared experience of succeeding, that together we got this done and we sound amazing. We always toot our own horn if we succeed.

These extracts indicate how the moments of success are perceived through the quality of entrainment and reached through active participation, enactment of individual competence, and are both responding to and becoming aware of the support and emotions of peers and the teacher. In other words, the agency is needed for entering, perceiving, and becoming aware of the whole experience of entrainment, and it further facilitates the motivation and self-efficacy of an individual.

An interesting aspect of belonging was highlighted in one teacher's comment that the sense of belonging in joint music-making can be so strong that it, in a way, can overcome a student's insecurity of being competent through the experience

and facilitate the self-efficacy of an individual, which is one characteristic of individual resources of agency:

> Teacher 3: It was incredible because there was this student who could not play all the chords, but he did not care, did not toot his own horn, but instead played those chords he could. The entity did sound so nice that he was engaged and felt being fully part of that.

These extracts reveal how the increased motivation, sense of self-efficacy, and being capable of having an influence, not only individually but also collectively, comes out of the enactment of belonging, which requires active participation, willingness, and taking responsibility as an individual. These extracts also provide insights into the experiences of entrainment, as perceiving the musical structures and coordinating actions that connect with the experiences of togetherness and extend the relational resources of agency, such as the sense of safety and peer support. These experiences outlined here depict the resourcing and constraining relationship between agency and entrainment. They show how the ongoing social and musical interaction and the perception of oneself as being part of a larger entity are followed by positive emotional and musical feedback, which, in turn, contributes to motivation and agentic participation.

Safety

Safety as a characteristic of joint music-making in the experiences of students and teachers relates to the interactional, musical, and relational aspects from a subject's point of view that construct and shape the social environment through musical experiences. Joint music-making connects to an individual's sense of safety, which is an important relational resource in facilitating the self-efficacy of an individual. Safety in joint music-making occurs through social interaction, such as listening, being responsive, respecting others, adjusting to them, and taking them and the responsibility for the collective into account. Students and teachers provided insights into the experiences of entrainment of how music itself creates a safe place to become part of something more because once the rhythm and dense musical texture go on, it is safe to make mistakes, as noted in the following comments from students and a teacher:

> Student 21: When we play together, it is not scary to play wrong because there's rhythm that continues and you can hop on more easily.

> Student 20: You don't have to be scared if you say lyrics wrong or play a wrong chord. You are not alone because we are together in it.

> Teacher 11: I feel very safe and nice when together with people I do the same thing at the same time.

Experiences of teachers also point to the concept of equality, which is one central aspect of relational resources of agency, as differences in skill levels blend into the music and as the power relations break down as a result:

> Teacher 6: Everyone plays the same. so there is nothing like someone being way better than anyone else *per se*.

> Teacher 7: I think it is in a nice way, an equal moment, that my ascendance breaks down in a positive way, and we become just a group that plays music together. I always speak to my students about "our band".

Teachers emphasized the meaning of social skills during joint musical action, such as the ability to "listen to each other," "respect peers," "give space to others," "act responsibly," "adjust," and "be responsive." In joint music-making, these interactions are non-verbal and enacted through music, which creates a platform for a multimodal dialog to unfold, as expressed in the following extract:

> Teacher 11: In my opinion, successful joint music-making playing is an indication of the ability to listen to others and take others into account. I can demonstrate to my student that when he did this in music, he was part of the group, and that he respected his classmates by doing his role, and nothing else, and how, by doing so, he gave the space for others to do their thing.

Teacher 2 described how experiencing playing together is "like reading someone else's thoughts in a different way than you do while speaking," and Teacher 10 noted how "when we play together, we say much more than we can while speaking." In other words, the experience of joint music-making and entrainment gives rise to intersubjectivity, increasing a sense of safety and mutual trust through social dialog that goes beyond verbal understanding. These experiences arouse positive emotions and seem to establish the sense of unity between people, as one teacher described:

> Teacher 6: I got the feeling that someone understood me, brought his part into the music we made together, and it was so amazing how we found our mutual musical language.

Interestingly, this non-verbal social dialog might be one aspect that enables resolving tensions among a class that struggles with bullying and social fear. In joint musical action, the aspect of safety in the experiences of entrainment provides a group of students a chance to explore their mutual relationships and to affirm their unstable relational balance at an abstract level of social interaction. Another teacher shared an experience of classes with social tension that affected how they could (or could not) play together, and once the teacher had managed to get them to play together, there was an ease of doing and a will to keep on playing, as described in the following comment:

> Teacher 2: They wanted to play that song all the time together, many hours. They had this tension in the class all the time, and students were stressed because of that. It was, like, we can do this together, and we are able to do this together, and there was this ease of doing.

These findings emphasize the relational resources of agency, such as trust between peers and a teacher, equality, and a musical environment that creates a sense of safety as such. According to our findings, emotions such as relief and ease take over from fear and insecurity, and they nourish the self-efficacy and agentic participation of the individuals. The findings discussed here suggest that the safety in joint music-making is musically and socially constructed through the experience of entrainment and takes shape as dialog that goes beyond words. These aspects of intersubjectivity through the experience of entrainment are resourcing an individual so they can develop their competence without the fear of making mistakes and establish trust for peers by acknowledging their efforts and supporting them when personally playing something incorrectly. Non-verbal abstract dialog creates opportunities to search for new ways of learning how to build trust and affirm social growth when it is challenging in the verbal world.

Continuity

Continuity is the particular characteristic of the process in joint music-making, which describes the cumulative process toward and through entrainment and its connections to competence, self-efficacy, and motivation as it creates possibilities for participation. Both students and teachers described this continuity when they were relating the processes of joint music-making in their classes, and it was closely linked to interactions between the teacher and students, their relationships, and the way teachers facilitated and supported their students' participation. In particular, a comment from one teacher described the nature of continuity and its affordances for the mentioned characteristics of agency:

> Teacher 9: I see joint music-making playing as a puzzle. First, you give the easy pieces for everyone, and we start to slot them together where they belong. And when I see those easy pieces go to their own places, or if not, I can give those more difficult pieces to those students who managed to slot the easy pieces already.

Many teachers explained how they looped the song continuously so that every student got to come along and how they built up the song with their students by adding new layers, instruments, and rhythms on the fly and stabilizing the joint tempo. In the process, students could then choose their own ways of participation, as two teachers stated:

> Teacher 8: We start with the simple things, and only after that do we add something new so that every student can participate at their own level.

> Teacher 4: After the moment that everyone has had time to get to know the instrument and chords they are about to play, I start to accompany them with piano by looping the chord progression and say to them: "Come along and play those chords that you can and know," and once I see frustrated students who would want it to succeed right away, I remind them, "Play the chord that you can. It is more than enough!" And I see them calming down when they succeed. And they realize it is enough in this moment now.

Students were also aware of the nature of the process, interaction, and continuity as they described the support they needed and got from their teacher. They explained how the teacher "gives instructions how to get started," shows "chords from the screen to keep us together," or "accompanies" their students to help them maintain the entrainment and to help them to find their own ways of participating, as in the following extracts from students:

> Student 21: Teacher gives options for how to play more easily. "Try that one first" and then "After that, you can start to play more," and it makes it much easier.

> Student 2: We always do it first in an easy way, and we slowly fasten tempo. So everyone gets to come along.

The goal of the process seems to be the moment when the teacher no longer supports the entrainment, but students themselves carry the entrainment themselves. That means, from the agency point of view, that students have found their individual ways of participating in their environment and are competent enough to work safely and collectively with their peers, leaning on their peers' support

but bringing in their own efforts as well to that moment. Again, emotions related to pride, success, and joy are present in these moments, as a student and some of the teachers noted:

> Student 2: If it succeeds well, we do not need the teacher to accompany us with any instrument.

> Teacher 6: It is so nice when we can let go of the backing track and students can be, like, "Now WE played this!"

> Teacher 5: I always aim at that moment when I am no longer needed and my students themselves can maintain and go through the song. When I can leave my instrument and the song just goes on, I always praise my students, how they are so skillful and how wonderful it is that they can do it on their own.

> Teacher 3: The idea of using backing tracks is that they keep the whole thing together. But, at some time, you can let them go once the students can act independently enough that they can play the whole song through without any help.

> Teacher 11: In some classes, students just say to me, "Teacher, you don't have to show the chords to us any longer." because they just know. I just say to them, "You see how you start to learn and perceive? I am no longer needed because you know and feel when it is time to change the chord".

However, there were also teachers who were struggling with the resistance of the students:

> Teacher 3: I am wondering how the students are experiencing a classmate being resistant, like if he just refuses, does not want to, or is not able to participate in joint music-making. Like if there is someone who fools around or discloses not knowing how or refuses to do something, which I experience quite often. Like what can I do? Is it about the skill, insecurity, or maybe a psychological problem why it is so hard for someone? Like, can we know why joint music-making works with some class and why not with some other class?

> Teacher 11: I see it almost every day how a student does not even try, or maybe tries a bit but then gives up. This same thing appears within different classes as well with the same student, like how you are able to try. And how quickly you

> tend to give up when you feel something is challenging and do not learn it quickly.

The extracts above provide insights into the unambiguous side of agency when students might refuse, or even reject, the opportunities to become part of the group or refuse to participate in a way that the teacher desires. However, the findings of the study underscore the richness of the positive experiences the students have outlined, which teacher perspectives have affirmed, like the cumulative process of joint music-making, thus highlighting the relational resources of agency, such as interaction, guidance, and support needed from the teacher and pointing to the opportunities of participating. Through participatory resources of agency, such as opportunities and possibilities to choose, students can move freely toward and through entrainment and thereby stabilize their skills and strengthen their sense of competence and self-efficacy. However, the agency in the joint music-making may be constrained by synchronous collaborative action since the possibilities for individual action are limited. Thereby, the complexity of the aspects of continuity in joint music-making form a significant constraint on agency, suggesting temporality and the individual's self-efficacy, which can create an unpleasant loop where an individual loses the freedom to be agentic and hence demonstrates resistant agency such as withdrawing from joint activity. The findings also emphasize the role of the teacher and their responsiveness and pedagogical sensitivity when guiding students through joint music-making.

Discussion

This study provides a unique view into how agency and entrainment resource and constrain each other in joint music-making. In response to the first research question concerning the characteristics of agency present in the reported student and teacher experiences in joint music-making, four themes were identified that offer different lenses through which to view agency. Presence in joint music-making approaches agency as an embodied, active, and intentional way of being aware and sensing the shared emotions that are taking shape through musical and social acts in the here and now. Belonging, in turn, involves the agentic participation that is at the core of the ongoing musical and social interaction featured by perception and emotions. Safety indicates how joint music-making creates a non-verbal dialogical space for agency and a platform to affirm social growth, but also how perceiving musical elements through entrainment in joint music-making facilitates emotions of ease and relief and creates a sense of safety for an individual to confront and overcome their insecurity. Finally, Continuity clarifies the agentic process of an individual during joint music-making and how, through the opportunities

and possibilities to choose, the way opens up to strengthen self-efficacy and competence.

Second, we investigated the ways in which agency and entrainment resource and constrain each other in joint music-making in the reported experiences of students and teachers. Our study suggests that music and joint music-making function as an invitation for individual agency, as joint synchronous musical action creates a potential environment and opportunity for participation by bringing individuals together in the present moment through entrainment. Musical entrainment becomes an intersubjective experience as individuals make their way to togetherness not only through the musical experience but also through relational and dialogical paths as they are responsive, respectful, and responsible toward others and where emotional encounters are taking shape through joint music-making. Our findings suggest that music produced in joint music-making functions as a form of feedback and a resource for an individual, as by perceiving the tightness or looseness of entrainment, as individuals and as a group, there is an immediate sense of togetherness, raising positive emotions that further enrich the sense of togetherness—we did this, and we sound good! In this feedback loop, awareness, anticipation, and reflection come together, reinforcing one another, fostering the self-efficacy of an individual, a sense of belonging, and confirming the intersubjective experience of joint music-making.

The findings of this study provide insights into the constitutive nature of the relationship among agency, entrainment, and intersubjectivity as they highlight the role of becoming aware of the present moment, emotions facilitating or limiting the process, musical and social togetherness, and the sense of safety, but also the complexity of aspects that may constrain agency and lead to resistance and withdrawal from the activity. The intersubjective experience of entrainment in joint music-making opens a dialogical space for relationships through music and body (Vass, 2019), for both students and teachers, which functions as a platform for agentic participation and the development of relational resource and social safety, which are central for agency (Juutilainen et al., 2018). Thus, this dialogical space can be regarded as a significant resource for agency. Particularly, as the experience of entrainment is often featured by positive affects, and as emotions are closely linked to our agency when considering what is worth pursuing, these emotions are featured by the experience of entrainment and resource agency in versatile ways. However, the temporal aspect of agency or the temporal ongoing process of the experience of entrainment shaped by emotions, in other words, the previous experiences of an individual and how an individual tends to give up when learning something new, seems to be either a remarkable resource or a constraint for agency. Moreover, the findings indicate that there is more to understand with regard to this phenomenon.

The findings of this study indicate how experienced music-related entrainment intertwines with intersubjectivity,

as the findings emphasize the active feeling, sharing, and being collectively in the very present moment by means of music. Hence, playing together opens a unique space for dialogical relationships that are an important part of intersubjectivity (Vass, 2019). The findings support the understanding of intersubjectivity (Stern, 2004; Trondalen, 2016), the core of which is becoming aware of the collective moment and experiencing each other through unspoken interaction as the microprocesses lead the way. Additionally, the findings elaborate on how in joint music-making, this shared understanding is highly interactive and non-verbal (Phillips-Silver and Keller, 2012) and how it forms a base for one's experiences of meaning, togetherness, possibilities for action, and subjectivity (Trondalen, 2016), which are also central to the human agency (Eteläpelto et al., 2013).

Through music and the embodied resonance in joint music-making, it is possible to sense and become aware of others, respond to and interact with them, and get the experience of both becoming visible and understood at an abstract level that goes beyond the verbal world. The emotionally safe climate has been recognized as fostering agency in previous studies of education (Eteläpelto et al., 2013; Ruohotie-Lyhty and Moate, 2016; Juutilainen et al., 2018; Jääskelä et al., 2020), but we believe that this study contributes to the discussion about the agency by emphasizing the importance of this unspoken way of interacting and relating to each other that forms a platform for building a significant resource of social trust. However, it is not only the non-verbal communication but also the particular role of music, the musical elements, and the experienced entrainment, such as perceived ongoing rhythm and dense musical texture (Turino, 2008; Ruud, 2020), that in joint music-making are essential to creating the sense of safety and giving rise to social contribution and equity. In educational studies, these are regarded as fundamental outcomes of agency (Vaughn, 2020). This might be the key in understanding how joint music-making can foster social growth (Pearce et al., 2015; Saarikallio, 2019), advance prosocial behavior (Kirschner and Tomasello, 2010; Mogan et al., 2017; Ilari et al., 2018), and bring people together regardless of their conflicting ways of thinking.

The findings of this study suggest that during joint music-making, the agency of an individual is constructed by and intertwined with the sense of belonging, which is achieved through perceiving being part of the musical and social entity and which is featured by strong affects. Previous studies link the experience of entrainment to positive feelings and the arousing of emotions because of the feeling of unity at different levels (Phillips-Silver and Keller, 2012), whereas in educational research, emotions are closely linked to the human agency as they lead the way to active participation (Eteläpelto et al., 2013; Slaby and Wüschner, 2014; Kirby, 2020; Ruud, 2020; Mameli et al., 2021). The results indicate that if there is a strong sense of belonging, there are likely also positive emotions and, therefore, a will to actively participate in and maintain

something that exists that involves apparent manifestations of agency (Eteläpelto et al., 2013). Moreover, the results elucidate how the experience of entrainment increases the sense of belonging, as it is characterized by intersubjectivity as the affects that are taking shape through unspoken interaction among participants. In other words, the key finding of this study is in line with previous research that the quality of agency is highly intersubjective (Damşa et al., 2010; Vass and Littleton, 2010) in joint music-making, relationally constructed, non-verbally experienced, and shaped by affects and an environment where relational resources are an intrinsic prerequisite for active participation of an individual.

However, even though this study shows the richness of joint music-making and its affordances to the human agency, there are complexities and contradictions when it comes to agentic resistance and when there are students who might refuse to participate in such an experience. It is a challenge, particularly in such activity, that depends on the social and musical contribution of individuals to even exist in the here and now. This study emphasizes the meaning of holistic and affective experiences that the verbal world cannot reach. This might also be the answer to why an individual demonstrates resistance in joint music-making. As human agency (Emirbayer and Mische, 1998; Biesta and Tedder, 2007; Eteläpelto et al., 2013) is temporally constructed, there are always previous experiences of an individual that are realized in the present moment. Consequently, an individual does what they know from experience, and it might be challenging to them to see what opportunities and possibilities exist in the present. Moreover, if emotions are inextricably linked to experiences and, thus, to agency (Eteläpelto et al., 2013; Slaby and Wüschner, 2014; Ruud, 2020), it is no wonder that teachers are experiencing challenges with resistant students. Emotions have an effect on how we participate and give rise to the possibility of experience, and experiences evoke emotions that are true to ourselves. Thus, we as music educators should never underestimate the power of emotions that are, according to our findings, an intrinsic part of joint music practices, but we should pay extra attention to the risk of social isolation and keep in mind the delicate and emotional construct of agency.

This study also contributes to the discussion about the agency by bringing together both students' and teachers' experiences of agency in joint music-making that is characterized by entrainment and intersubjectivity. These experiences provide insights into how teachers and students' agencies interact with each other in music classrooms, as resourcing or constraining, as together they create a human experience that makes them feel equal through collaborative musical act and entrainment. In other words, this study underscores the dyadic nature of agency in how teachers facilitate and continuously evaluate the opportunities for their students to participate in the musical environment and adapt their teaching based on the responses they get from

their students. Conversely, the students similarly negotiate and consider their agency based on the possible opportunities offered by their relational and environmental reality. With regard to further research, we suggest that this encounter between the agencies of teachers and students should be further investigated.

Limitations and future directions

The limitations of this study include the use of interviews of student and teacher participants without performative data that would provide insights into how the experiences and beliefs are enacted in practice. First, we are aware that some of the participants found it easier to share their experiences and thoughts than others, especially when it involved student participants. Yet, the data provided a broad picture of different individuals with diverse backgrounds and experiences. Second, a larger sample size, with more than one class of Grade 6 students and 11 teachers, would provide a more diverse picture of the experiences of students and teachers. Third, the study was conducted in Finland within an educational context that might differ from that of music education in schools in other countries. Future research could include students and teachers in different countries to see whether the findings are reflective of other cultures and contexts. Last, we are aware that our study did not measure how closely entrained our participants were, nor did we comment on the nature of entrainment. Moreover, if the data were explored from a different perspective, other considerations might come to light.

To reflect on the different levels of reflexivity of the study, it is worth acknowledging that this particular study belongs to a larger study examining different aspects of music education in Finnish primary education. The authors of this study have previously conducted two studies that have influenced the theoretical understanding of this study. Moreover, all the authors are not only researchers holding different specialties and supporting various epistemological and ontological positions but also teachers of different subjects, which influenced the way the study was conducted and how the data were collected, analyzed, and interpreted. However, data analysis included a double-coding process and discussions with co-authors to ensure the integrity of the results. Additionally, we have carefully described our interpretations of the data and linked these to existing theories throughout the findings to increase the reliability of the study.

The interviews provided insight into how, through music, our participants perceived themselves as being part of a musical and social entity, which made them experience strong positive emotions, such as enthusiasm when succeeding, which further made them willing to actively take responsibility in entering or maintaining joint music-making. Hence, based on our results, future research could investigate how the participants respond

to someone not maintaining tempo and how it affects their sense of belonging. Nevertheless, we believe our study provides valuable insights into the relationship between agency and entrainment in joint music-making and shows that there is more to be studied.

Implications

Based on the experiences of both students and teachers, it is clear how there are some human interactions such as joint music-making, which is characterized by entrainment and intersubjectivity, that cannot be replaced by providing verbal meanings in place of actual experience. Our study offers a holistic picture of the dialogical space of joint music-making where agency is resourced and constrained through the ongoing, affective process of interaction with music and other people in the here and now. We suggest that it is important to recognize the emotional side of agency, the inner experiences, and the importance of teacher sensitivity when guiding students through educational practices. These points should be addressed in both pre- and in-service teacher education since the holistic nature of joint music-making should be seriously considered as a means to better understand the complexity of agency in terms of both its richness and ambiguity. Moreover, as discussed earlier, the agency should not be understood only as a bare activity and eagerness to participate but also as passivity and withdrawal that often have social consequences. Based on our study, we suggest that the experience of entrainment is such an effective tool in fostering the agency of students and enhancing holistic learning but also that agency is a prerequisite for entrainment and intersubjectivity in joint music-making as it is dependable on the will and participation of an individual. Entrainment is not just an intrinsic part of music education; thus, we would encourage all educators to consider how education could better benefit from having music or experiences similar to those outlined in our study as part of the curriculum. After all, the most important goal of education is the development of human potential at both the subjective and collective levels.

Conclusion

In the present study, we propose how entrainment and intersubjectivity are significant aspects of joint music-making based on the reported agentic experiences of students and teachers. Agency is an important aspect in enabling entrainment in joint music-making, and, in turn, the positive experience of entrainment feeds back to agency in versatile ways. It is notable that agency and entrainment are intertwined with intersubjectivity in the experiences of joint music-making in a way that they together form the whole

experience. This means they can be analytically separated, but in practice, they complement each other. Furthermore, our study suggests how an experience of entrainment is conscious and which can be learned and aimed at, and how it feeds into the development of agency through the agentic processes.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent to participate in this study was provided by the participants' legal guardian/next of kin.

Author contributions

ES was responsible for the original study design, data collection, material preparation, and data analysis and wrote the first draft of the manuscript. All authors contributed to the study's conception and design, commented on previous versions of the manuscript, and read and approved the final version of this manuscript.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Appendix

The questions in Appendices 1, 2 are constructed in a way that they would cover the individual (competence beliefs, self-efficacy, and intrinsic motivation), participatory (subject's experience of the opportunities for active participation and influencing and making choices), and relational (emotional atmosphere and experiences of trust, support, and power relations) domains of student agency, as in the questions for students: "In your opinion, what is the nicest thing when your whole class plays and sings together?" and "Is there something that makes it not so nice?" Additionally, the important individual and collective aspects of musical agency, such as relationship with music, perceiving music, playing instruments, and collective coordinated action are present, as in the question for teachers: "In your opinion, what affects how a whole group of students starts to play together, and how is the joint music-making situation built?"

Appendix 1

The questions used in the student interviews in this article are as follows:

Do you listen to music in your free time, and if so, what do you listen to? Is there an instrument that you especially enjoy playing, and why? Is there an instrument that you do not enjoy playing, and why? If you begin to play a new song with your class, what do you usually do, and how does the process go? When you begin to play a song with your class, what are the things encouraging you to participate? Are there things that make you not want to participate? In your opinion, what is the nicest thing when your whole class plays and sings together? Is there something that makes it not so nice? What does your teacher do when you start to play together as a class? How does your teacher teach you?

Appendix 2

The questions used in the teacher interviews in this article are as follows:

What kind of experiences do you have of playing as a group in your personal life, and what kind of meanings do they have for you? In your opinion, what affects how an individual student participates in joint music-making? In your opinion, what affects how a whole group of students starts to play together, and how is the joint music-making situation built? How do you support an individual student and the whole group in the joint music-making situation as a teacher? Is there something concerning joint music-making we have forgotten to talk about in addition to what we have discussed already? Is there something you want to mention or talk about?