

‘The Whole World Is There to Relate to’: An Actor Network Analysis of the Conditions Needed for Gender Equality in Music Education

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Abstract

In music education research, gender inequality in the Western music classroom is a well-known and considerable problem. By applying a posthuman theoretical framework and a non-hierarchical ontology, this paper seeks a different perspective on traditional gender structures in music education. The aim is to investigate which actors, networks and entanglements are at play when music practitioners discuss gender equality between males and females in the music classroom, and to consider why envisioning a gender-equal music classroom is complex. Based on an actor-network analysis of interviews, the findings reveal that polarized networks with intertwined discursive actors diminish the variety of views on gender. This hinders an inclusive way of envisioning gender becomings in the music classroom that is not already role modelled in the surrounding society. Hence, the networks in play seem to have an impact on the possibility of envisioning a gender-equal music classroom.

Introduction

Research in music education indicates that in Western countries, opportunities for musical learning in schools remain unequal across genders, which continues to affect students' achievements in today's music classrooms. (Onsrud, et al., 2021). Previous studies have suggested that gender is performed in a stereotyped heteronormative manner in the music classroom, which implies a significant obstacle for gender-equal musical learning, and a tendency to reproduce musical performances constructed on gendered normative values and norms in society (Borgström Källén & Lindgren 2018; Ferm Almqvist 2019a). Such values and norms become limiting for some students' musical learning and open options for others. Despite a significant research body on gender related issues in music education (Abeles, 2009; Green, 2010), the problem of gender inequality between male and female gender identities¹ in music classrooms is still present (Borgström Källén & Ferm Almqvist, 2024; Onsrud, et al., 2021).

This paper will discuss possible reasons for why a gender-equal music classroom is hard to achieve and why envisioning solutions are complex for music practitioners. By discussing what music education is and can be from a gender equality perspective with music practitioners, the study investigates human, non-human and discursive actors at play. An actor-network theory analysis is applied, implying an approach that challenges traditional constructivist approaches by defining non-humans as actors equal to humans (Muniesa, 2015). Hence, our ambition is to contribute with a different perspective on the matter and a broader view of the well-known but complex problem of gender inequality in music education.

Post-anthropocentric perspectives in music and art education studies have been shown to offer new possibilities and different ways of understanding the subjects (Asplund, 2022; Jamouchi, 2019; Jusslin & Eklund 2022). Kvile and Christophersen (2023) show that intra-actions of pupil(s) and music(s) at school from a posthuman and new materialist perspective connect with norms and rules regulating the music classroom and have material effects. In an ambition to stretch the boundaries of music education research and practice through a posthuman approach, Fjeldstad et al., (2024) trace how and why the authors' research voices transform during a transition from humanist to feminist posthuman scholars. Through performative stories, they intra-actively forefront feminist matters in music education, as a means of making these matters issues of importance.

¹ This paper focuses particularly on the inequality between male and female gender identities. However, this focus does not contradict a recognition that other gender identities, such as non-binary and gender expansive, lack gender equality.

One study (Zimmerman Nilsson et al., 2022) approaching the future music classroom from a posthuman perspective shows that thinking “outside the box” (i.e. thinking beyond gendered traditional conventions in the music classroom) is a complex and challenging task for music practitioners. This indicates a need for more studies that further explore possible reasons for why envisioning a gender-equal music classroom is difficult. That is, to discuss the potential to facilitate a music education progress in schools that moves beyond gendered traditional conventions. By adopting a posthuman theoretical framework, in which actors intra-act with each other, as well as with the systems in which they are intertwined or entangled (Barad, 2007), our ambition is to bring a different perspective on gender equality-related issues to the table. Hence, this article aims to investigate which actors, networks, and entanglements are at play when music practitioners discuss gender equality between males and females in the music classroom, and to consider why envisioning a gender-equal music classroom seems complex. Here, entanglements (Barad, 2010; Bennett, 2010) imply that the diversity of beings, humans, more than humans, materialities and discourses, are interweaved and intertwined.

In music education, there is a body of research showing that gendered structures are operating in almost all kinds of musical educational settings (Abeles, 2009; Borgström Källén & Lindgren, 2018; Green 2010, McBride & Palkki, 2020; Partti & Devaney 2023; Onsrud, Vestad & Blix, 2021; Palkki, 2015). Gendered patterns are shown as gender-coded choices when it comes to instruments such as the voice, the flute, the guitar, the drum set, and music activities such as singing in choirs and playing in rockbands (Borgström Källén, 2014, Hentschel, 2017). Gendered patterns are also shown when boys and girls are playing together in school bands or in school ensembles. Studies show that boys are allowed to claim more space for their musical performances than girls (Borgström Källén, 2014; Ferm Almqvist, 2019a; Hentschel, 2017; Onsrud, 2013).

Further, the music classroom as a space for reproduction has been acknowledged within music education research for decades (Green, 1997; Onsrud, Vestad & Blix, 2021). In Scandinavian countries, research shows that similarities in music teachers' own musical backgrounds may underlie a transmission of a traditionalist mindset that governs norms and values in music education practices (Borgström Källén, 2014). Borgström Källén & Lindgren (2018) show that this similar educational background constructs a closed cycle of educational levels, where norms and values for musical canons and teaching practices in the music classroom are reproduced from one generation to the next. Since gender is always present in human activities, including intra-actions (human-materiality interactions) (Haraway, 1998) in classrooms, these reproductions of norms and values include gendered musical performances (Borgström Källén & Lindgren, 2018; Green, 2010; Richmond, 2012). Also, leisure-time music-making with the intention of promoting gender equality in formal music education, and the relation between music technology and girls and transgender persons from a post-

humanist theoretical perspective have been studied (Jonasson, 2020). The study found that individual knowledge of music technology enabled the girls and non-binary participants to take control of their composing processes, i.e., becoming music-making hybrids.

Another aspect of the gendered music classroom is the role the students play as actors in the surrounding networks of the society, where gendered role models are interacting with the students outside as well as inside school. Research also points out that students, since they intra-act with gendered networks in their everyday life, show a lack of awareness regarding gendered division of activities and power in the classroom (Onsrud, et al., 2021; Onsrud, 2013). One example is that students in upper secondary schools with a music profile showed that popular culture genres in the surrounding society served as role models for how gender should be performed in a specific music piece and when played in school. Since these role models were gender-marked from the start, the performances in school were gender-marked in the same manner (Borgström Källén, 2014; Borgström Källén & Lindgren, 2018). Another example is a study from Hentschel (2017) where Swedish choir traditions, when celebrating Saint Lucia, an event connected to Christmas, traditionally are gender-marked. When these gendered traditions were included in school performances, boys were reluctant to sing in the choir and perform in the traditional costumes required.

According to Armstrong (2011), Borgström Källén, (2014) and Onsrud, (2013), students' performances in the music classroom, for instance, with instruments or music genres, are more gender stereotyped if the teacher is not involved in leading the musical activity. Additionally, studies show (Borgström Källén, 2014; Ferm Almqvist, 2019a; Hentschel, 2017) that when musical learning is led by a musically skilled teacher who teaches and practices in a playful, process-oriented way, gendered structures are not present to the same extent. A possible explanation is that such a teaching style has less focus on performing in concerts, where students and teachers tend to aim for a professional level. Thereby, they tend to act more pragmatically and instrumentally (to make the best result possible within a set deadline for a concert), following gender-stereotyped ways of performing music, since this is what they are familiar with and therefore more skilled in doing. A more playful and process-oriented focus when playing together, where the goal is experimenting and finding new ways of expressing music without the pressure of performing the result in a concert, has been shown to reduce gender-marked performances. This process focuses on trying out new ways of playing rather than performing in front of an audience. This stresses the need for teachers as actors to engage with students, to encourage networks that offer equal opportunities for learning (Hentschel & Ferm Almqvist 2021), since stereotyped gender performances are entangled through different actors, such as teachers, students, computers and instruments in the work of creating music (Ferm Almqvist, 2019b; Onsrud, 2013)

Theory, Materials and Methods

The posthuman theoretical perspective emanates from a socio-materialistic onto-epistemology (Barad, 2010). Based on the current research frontier in music education, there is a need to proceed towards studies in the Anthropocene. From an anthropocentric view of education, humans are considered as superior, and at the focus of attention. Humans stand above all other species and have specific values, rights and privileges, based on the fact of being perceived as human. Consequently, a reconfiguration of the subject is needed which considers the entangled relationships between humans and more-than-humans. Only after this configuration does research have the potential to defy present gendered structures (Brennan & Devine 2020). The Anthropocene enables researchers to be participants in an entangled world, where explorative investigations are carried out in a tentative, “trial and error” way (Gibson-Graham, 2011). In the first article from the research project, this implied trying and evaluating new ways of designing group conversations, when focusing on how gender-equal options could be realized in the future music classroom (Zimmerman Nilsson et al., 2022).

A significant concept in post-humanism is “entanglements” (Barad, 2010; Bennett, 2010), implying that humans and more than humans are interweaved and intertwined. Entanglements occur within the diversity of beings, of humans, materialities and discourses. As such, the post-human is perceived as one who embodies different identities and perceives the world from multiple, heterogeneous perspectives (Haraway, 1991). Accordingly, the world is becoming through coexistence between complex hybrid combinations of humanity, materiality, and discourse in constant change. In a previous article based on our research project (Zimmerman Nilsson et al., 2022), entanglements of human actors and diversities of spaces revealed that spaces intra-acted with different student groups, which seemed to enhance conditions for gender-equal music learning in the music classroom. The materiality of the body (Barad, 2003) is in a constant intra-action with the ever-changing expressions of the socially gendered body. Actors such as cultural and discursive power relations are at play, socially reproduced by humans as actors.

In this paper, gender as a theoretical concept is to be understood as socially constructed (Butler, 2000; Connell, 2009). The concept of gender equality (Petö, et al., 2025) is based on this social constructionist assumption and points to equal rights in society regardless of gender identity.

The selection of participants followed what Flick (2014) describes as convenient and strategic sampling, based on inclusion criteria requiring representation across age and gender, as well as involvement in studying, teaching, or producing music within both formal and non-formal educational contexts. Based on these criteria, four participants were recruited to participate in the study, and all agreed (see Table 1). The participants were: a music producer with a decade

of experience (Brian), a music teacher with five years of experience of teaching in lower secondary (compulsory) school (Gabriella), and two music education students in their fifth semester of an eight-semester higher education program, studying to teach music in upper secondary school (Alice and Mitch). Brian had a degree from higher music education with music production specialization. His experience of producing music included working in music studios, having the overall responsibility for music productions. At the time of his participation in the study, he was working full-time as a music producer. Gabriella had a higher music education degree and her experience as a music teacher comprised primary and secondary school. At the time of her participation in the study, she was working as a full-time music teacher in secondary school. Alice, Mitch, Gabriella and Brian each had a great deal of experience in playing musical instruments. We felt it was vital to include a music industry practitioner to include wider experiences, (e.g perspectives) from outside the music education context in the participants' conversations about a gender-equal music classroom beyond gendered traditional music conventions.

All participants received written and oral information about the study and its aim, including the ways in which the findings would be communicated and published as well as information for communicating with the researchers, in line with the National Research Council's guidelines. The group discussions with the participants were accomplished via Zoom. Participation was voluntary, and participants could withdraw at any time without giving any reason. The empirical material has been handled confidentially. In addition, the information from participants has been used only for research purposes and participants were assured that outsiders would not be able to identify individuals. In the presentation of the study's findings, the participants have been given pseudonyms. The research meets ethical guidelines and adheres to the legal requirements of the study country F2023/194. The authors of this article are trained teachers, both in school and higher education settings. Together, their research comprises music education and music education gender studies, where gender is considered as socially constructed.

Table 1*Participants*

| Interviewees | Genders | Work |
|---------------------|----------------|---------------------------------|
| Brian | Man | Producer within music industry |
| Mitch | Man | Student of music education |
| Alice | Woman | Student of music education |
| Gabriella | Woman | Compulsory school music teacher |

Data collection consisted of two recorded discussion meetings over Zoom. This article presents an analysis of the material produced in the first meeting. While the second meeting concerned visions of a future gender-equal music classroom (Zimmerman Nilsson et al., 2022), it also revealed difficulties in “thinking outside the box,” that is thinking beyond gendered traditional music conventions in the music classroom. Therefore, we have now returned to the first meeting to explore why envisioning a gender-equal music classroom is complex. The discussion during the first meeting lasted two and a half hours, was transcribed verbatim and comprised 23 pages of text. During the interviews, the researcher asked questions and followed up the discussions. The actor network analysis (ANT-analysis), conducted on a micro-level implied a detailed and thorough process where every utterance was considered related to fundamental values and how they could be seen as connected to further reasoning. The design of the meetings was created, tested, and developed in advance by the researchers (Zimmerman Nilsson et al., 2022). During the first meeting, attendees discussed the purpose of music education for the pupils and the ‘gender-equal’ classroom by relating to today's music classroom.

An actor-network theory analysis (ANT-analysis) (Callon and Law 1995; Latour 2005) was applied to the transcribed discussions. Fenwick and Edwards (2012) state that ANT is suitable in educational studies focusing on tracing and exploring new ideas, practices and technologies. The ANT as a device for analysis means that worlds (social and natural) are considered as entangled, implying that materiality is situated as an aspect of social practices (Ahn, 2011). Here, an actor is defined as human beings or non-human actors, in other words, any material. (Jackson, 2015). This implies that an ANT-analysis challenges traditional approaches by way of defining humans and non-humans as equals. Each actor influences the becoming in and of the network, and the relations between actors are reciprocal and

symmetrical (Callon & Law, 1995). This implies that entanglements involve human, material, and discursive actors. In turn, this means that material-discursive entanglements also include discursive actors. Hence, applying ANT implies that music classrooms are investigated as networks where human, non-human, and discursive actors become intertwined when forming and re-forming meaning. By way of the analysis, intra-actions between significant actors were discerned in processes of coexistence within the network. Actors move along paths and connect in networks (Ahn, 2011). Hence, the research project identifies significant actors' intra-actions in music classroom networks.

Step one of the ANT-analysis discerned which human, non-human and discursive actors were present in the networks, by way of the participants' reasoning during the interviews. More specifically, this involved the researchers listing the actors mentioned in a separate document. Step two focused on what the different actors did in the networks by way of their reasoning and how they intra-acted. Here, the analysis was guided by questions about what the actors did in the networks and how they intra-acted in the process of becoming. Step three concerned the effects of the process and different meetings and connections, entanglements that took place by way of the actors being discerned and connected with each other. In the findings, each network is illustrated by a quote that represents the characteristics of the actors and the intertwining herein. The quotes have been translated from Swedish to English by the authors.

Findings

When discussing music education and gender equality, the participants and the researcher are seen as human actors giving voice to/channeling intra-actions within the networks. Music education becomes through intra-actions with discursive actors permeated by expressions such as: "Music is fun and art is important and the fact that music is a popular art form makes it a good context where you can take advantage of the students' interest." "Give students who don't have music at home a chance to develop." Hence, intra-actions within music education are envisioned as flowing, entangled possibilities. Within the networks in play, actors emerge and intra-act in different ways, entangled in the gender equality issues of music education, which are presented in the findings that follow. They are presented by way of four networks: Gendered Music Education Network, Cultural and Musical Equality Network, World Network and Society Network.

Gendered Music Education Network

The gendered-music classroom network consists of intra-actions between human, material and discursive actors. Human actors mentioned by the interviewees include "boys," "guys," "girls," "women," "someone," "men," "music teachers," "everyone"; material analogue actors are "guitar," "drums" and "the classroom," and the material digital actor is EDI (electronic

data interchange). (EDI implies that the computer is the main instrument.) Examples of discursive actors are music education values and gender perspectives permeated by expressions such as “Well, we know that this one is doing this, but there was never any talk about any girl.” /.../ “It was the guys who were asked for concerts and such.” In the following quote, Alice analyses her music teaching experience:

Alice: When there was talk about EDI, it was the boys who got the opportunity and were asked the question [not the girls]. ‘Well, we know that this pupil is doing this,’ but there was never any talk about any girl. It might happen that someone is [playing an instrument] but it is not visible to the teachers, and the girls were not asked the question. It was the guys who were asked for concerts and such. And I was a little provoked by that. Well, also not to set stereotypes or to use the girls to sing and the boys to play the guitar or drums. Instead, everyone should be heard and seen, be allowed to be heard and seen... I came to think that as a woman, I can feel that I have a different role in the classroom than the man has as a teacher. We get different status or authority depending on which gender steps into the classroom... I think that is also an important issue.

The ANT analysis implies that the students and the music teachers as human actors, intra-act with cultural discursive actors like notions on gendered expectations and traditions, showing what actions are seen as suitable for actors labelled as boys and girls, respectively. Consequently, girls intra-act with non-human actors such as microphones while boys intra-act with guitars and drums. Thus, discursive actors by way of gendered stereotypes, entangled with networks in the surrounding society, intra-act with the contemporary music classroom, implying different possible becomings for boys and girls. Hence, the way in which possibilities of intra-acting differ between girls and boys in the gendered music education network becomes entangled with discursive differences in authority that pre-decide possibilities and obstruct gender equality. The network, permeated by an accentuated dichotomy between boys and girls, seem to be decided beforehand through entangled discursive actors such as norms and values, which might aggravate the possibilities to envision a gender-equal music classroom.

Cultural and Musical Equality Network

Through intra-actions within the cultural and musical equality network, human-, material- and discursive actors make possible becomings on equal terms for human actors of varied genders. The human actors mentioned are “students,” “people,” “you” and “role models.” Material actors mentioned are “instruments” and “sound technology.” Examples of discursive actors are “identity” and “diversity,” in expressions such as “highlight diversity and role models that students might not otherwise come across.” Further, discursive actors are perspectives on

gender equality, Western culture and music, role models and genres:

Brian: Music is perhaps, in a clearer way than many other subjects, connected with identity. Like, not only when it comes to the instruments but also the music you listen to. It's important to simply bring out diversity there. And it's important to highlight diversity and role models that students might not otherwise come across. To strengthen self-confidence without making it uncomfortable for people. You should be able to find ways to strengthen the students' self-esteem and self-confidence on their own terms, that it feels okay. Balance in challenging without making it difficult... This relates to highlighting diversity in abilities. Different abilities, different ways of relating to music. You can be interested in sound technology, or in music production. You can have different styles of expression and different cultures. We are a Western culture and stuff like that. Highlighting different types of music and that it's not that classical music is better. And as Mitch said, being a DJ is not a less impressive way of making music, but a different way...

The music subject as a possibility for gender equality is characterized in Brian's quote by entanglements between identity, instruments, and musical preferences. The discursive and human actors "diversities and role models" benefit the students, by highlighting "different ways of relating to music" in the classroom. The network seems to allow for a wide range of discursive actors from the surrounding society to intra-act with students as human actors in the music subject. The human actor's possible intra-actions, emanating from diverse identities and abilities, are open and widespread, embracing sound technology, music production, different types of music and different ways of making music in the entanglements.

World Network

The world network is wide and all-embracing, with gendered norms and values. When enabling and highlighting gender equality issues, there are intra-actions between human actors, music classrooms, politics, feminism, and society, which will be presented in the following quotation of Brian and Gabriella below. In this quotation, the human actors are "Jonas Sjöstedt," a left-wing party leader, "daughters," "students," "Elvis," "Michael Jackson" and "Madonna," while material actors are "the classroom," "school," and "preschool." Discursive actors are perspectives on gender equality issues in society, the world, feminism, and role models, exemplified by expressions like "Nothing that only happens in the classroom or classrooms" Below, Brian and Gabriella discuss conditions outside the music classroom. Here, sociopolitical issues are put to the fore, by way of referring to a former leader of the political left party leader, who had strongly argued for feminism and gender equality during his political assignments in line with his party's ideological foundation:

Brian: I was thinking it's such a huge and difficult issue [gender equality in music education]. Nothing only happens in the classroom or classrooms. I remember when I read about the former left party leader Jonas Sjöstedt 'Well, how do you deal with the fact that you call yourself a feminist and you have daughters? How do you relate to that?' And he said: 'I do my best, but then they go to school and preschool, so the whole world is there too.' So, it's like very difficult. I'm not saying that you shouldn't work for change, but it's very difficult. It's so huge ... our whole history, the whole world is there to relate to, like. ... But I find role models to be very important, and they have been very important in my life. And I've had like, obvious role models in music in a way that has been very simple for me. There are role models everywhere for whatever I would like to do with them. Role models that bring forward people who do things that students may not encounter otherwise.

Gabriella: Every time I talk about music history, Elvis and Michael Jackson are mentioned as the greatest because they are the ones who have influenced and developed music etcetera. I mean, Madonna is one of the world's biggest icons. We should talk about that more. And I am going to do that.

The world network as wide and all-embracing makes the discursive actor gender equality issue a globality. The daughters of the left party leader, Jonas Sjöstedt, as human actors intra-act with school and preschool as material actors and with feminism as a discursive actor within the society in the world network. This implies that societal discursive actors become just as, or even more influential when it comes to promoting feminism for the young generation as a parent. As such, feminism intra-acts with "our whole history, the whole world," making gender equality issues entangled. The significant discursive actors, "role models," within the network are allowed to intra-act with all human actors. These intra-actions make possible entanglements that are "outside the box." Discursive actors, male role models like Elvis and Michael Jackson, allow the pupils to intra-act with music history, while the female role model Madonna has not been allowed to intra-act, making issues of gender-equal musical "becomings" visible in the network. When Gabriella suggests talking more about the female icon Madonna than about male artists such as Elvis and Michael Jackson, this constitutes a concrete proposal of how to move forward in the classroom.

Societal Network

The talk about a gender-equal music classroom shows entanglements of human and discursive actors, characterized by intra-actions, emanating from music education and from society as an underlying network. Significant human actors in the following quotation are "boys," "girls," "people," "teachers," and a "societal influencer," while the material actor is "the music classroom." Examples of discursive actors are approaches to gender equality in music

education, empowerment in society, equality, social values, and norms, exemplified by expressions like: “I feel that the boys take that place in the classroom. They are so loud and then it kind of feels like a solution would have been if the boys backed off a bit and took up less place and made room for girls.” “And I still think it’s like ‘Boys will be boys’ and stuff like that...” In the following, Mitch reasons about boys and girls in the music classroom:

Mitch: In terms of speech, I feel that the boys take up space in the classroom. They are loud and then it kind of feels like a solution would have been if the boys backed off a bit and took up less space and made room for girls. It doesn't have to be boys either, but it can be people who just are calmer than others. Reflecting on how to divide that power, you as a teacher must consider how it is distributed. Society has not prioritized this and that’s a pity. And I still think it’s like ‘Boys will be boys’ and stuff like that ... And then what is it that makes so many young people think that what Jordan Peterson thinks is so damn exciting? He is a man who likes to be seen and heard. He is famous. He has done research showing that ‘boys are boys’ and ‘girls are girls’ and if we as boys don’t get to go watch Mixed Martial Arts, then we’re going to be depressed. Evolution has led us [boys] to become violent and if we are not allowed to be violent, we are not happy. And people say that’s not true. And he says that on the contrary because ‘research shows’ [referring to claimed biological differences between boys and girls] /.../ It’s such a damn ‘us-or-them’ feeling in the debate. Weird, how did that happen?

Boys as human actors are continually becoming through intra-actions with the music classroom: “In terms of speech, I feel that the boys take up space in the classroom. They are loud ...” As such, boys and girls as human actors intra-acting in a shared classroom space, implying different possibilities to intra-act, making the boys significant in the societal network. Boys’ musical becomings are entangled with the music teacher as a human actor: “Reflecting on how to divide that power, you as a teacher must consider how it is distributed.” This shows that the gender-unequal music classroom is continually becoming through intra-actions with discursive actors such as social values and norms, dividing the classroom’s verbal space in favour of boys. Hence, there is a co-existence between boys as human actors and classroom space materiality. Girls as human actors become intertwined with people that “are calmer than others,” which influences how they are allowed to intra-act with materialities in the classroom. Intra-actions allowed for boys or girls respectively imply differences in space for human actors of different genders. Boys’ intra-action with the classroom becomes entangled with society promoting gender differences, through the significant discursive actor “boys will be boys.” The societal actor network in play with gender stereotypes implies entanglements of the discursive actors of “proof” and “evolution.” The discursive actor “research gendered stereotypes” interplays with boys’ intra-actions with the classroom by

referring to “research” and “evolution,” make the network all-embracing. “Boys are boys” becomes entangled with antagonisms toward feminism. Norms regarding what girls and boys “are” become decisive for the entanglements within the network. Hence, one reason why envisioning a gender-equal music classroom is challenging seems to be that the gendered music education network is entangled with the societal network where gendered structures are prominent.

Discussion

The main findings consist of four music education networks with intra-actions between human, material and discursive actors: the Gendered Music Education Network, the Cultural and Musical Equality Network, the World Network and the Societal Network. In the following section, these will be discussed from an overarching perspective.

By reconfiguring the subject (Barad, 2010; Bennett, 2010), the networks are considered entangled, suggesting that humans and more than humans are interweaved and intertwined. This implies that humans within these networks perceive the world from multiple, heterogeneous perspectives (Haraway, 1991). As the world is becoming through coexistence between complex hybrid combinations of humanity, materiality, and discourse in constant change, so are the networks.

Although this study understands the subject by considering the entangled relationships between humans and more-than-humans, intra-actions intertwined in the Gendered Music Education Network, are permeated by an accentuated dichotomy between boys and girls in the music classroom, which partly aligns with earlier studies focusing on gender inequality issues in the music classroom (Asplund, 2022; Borgström Källén & Lindgren 2018; Ferm Almqvist 2019a; Jamouchi, 2019; Jusslin & Eklund 2022; Kvile & Christophersen 2023; Onsrud, et al., 2021). The similarities to previous research confirm that gender is performed in a stereotyped heteronormative manner in the music classroom and that opportunities for musical learning in schools remain unequal across genders (Onsrud, et al., 2021). This implies that gender becomings for human actors - boys and girls, male and female music teachers in music education seem quite different, given that discursive actors such as gendered norms and values are interweaved with the surrounding society. These conditions/aspects make actions towards gender equality difficult to achieve.

Within the Societal Network, a gender-equal music classroom with entangled human and discursive actors is characterized by intra-actions, emanating from music education and from society as an underlying network. In comparison, a body of research show that gender is always present in human activities, in general social life and in specific intra-actions in music classrooms (Borgström Källén & Ferm Almqvist, 2024, 2018; Green, 2010; Richmond, 2012).

Hence, it is reasonable to suggest that gendered reproductions of norms and values in society are reproduced as gendered musical performances both in and outside of school.

However, our findings also further develop an alternative understanding of gender equality in music education by way of the Cultural and Musical Equality Network at play. Here, human, material, and discursive actors make possible becomings on equal terms for human actors of varied genders, by allowing for a wide range of discursive actors from the surrounding society to intra-act with students as human actors in the music subject. As such, a post-human perspective paved the way for illuminating new possibilities. Hence, the actor-network theory analysis (Muniesa, 2015) contributed with a different perspective of the complex problem of gender inequality in music education.

Given that the World Network characteristics are wide and all-embracing, the discursive actor gender equality issue becomes globality, where education as a part of society seems to mirror the entanglements in the gendered world. The findings lead to a possible way forward of detaching these classrooms from the world to become gender equal. Then, music education could be a “safe haven,” as advocated by one of the participants. However, such a scenario would make it difficult for music education to be a part of the society in which it belongs.

To enable a progress towards increased gender equality and the dissolution of gendered intra-actions in the music classroom, new discursive actors need to enter music education networks. Discursive actors that include notions of fluid genders, deconstructing a dichotomy where two possible genders are supposed to complement each other. This could have the potential to change the way in which students intra-act with gendered networks in their everyday life, creating an increased awareness regarding gendered division of activities and power in the classroom, in contrast to the findings of earlier studies (Borgström Källén 2014; Onsrud, 2013).

Since previous music education studies show that a reproductive mindset governs norms and values in music education practices, due to societal traditions and norms and to music teachers’ similar educational music background (Borgström Källén, 2014; Borgström Källén & Lindgren, 2018), it is not surprising that the actors at play in this study show similar patterns. One way to facilitate a change and interrupt such a reproduction would be to make possible a more diverse music teacher profession. From a broader perspective, this could also be relevant beyond “schools,” in higher education, non-formal education and other contexts where arts education takes place, given that these institutions presumably share similar societal traditions and norms.

As for practical implications, the findings indicate that possibilities for gender-equal

classrooms, where music education become a space for multiplicity and where boundaries of gender are fluid and allow for diverse becomings, might be realized by music educators' actionable strategies of further increasing awareness of the networks within the music classroom. The music teachers could discuss the networks at play with their pupils and adapt to alternative teaching strategies, where today's gendered classroom can be challenged. More specifically, an actionable strategy for increasing gender equality, suggested by one of the participants in Zimmerman Nilsson et al., (2022), is to consider broadening the visual representation in the music classroom:

On the walls in all rooms, make sure that there is representation, both in terms of identity and gender and genre and style. Not just Beethoven or Billie Eilish but you can also have Avichii or anything. Music is different from other school subjects as it includes many students - what they consume and meet every day, Billie Eilish, for instance, huge icons. There is a lot of potential in that, that you can use. (Zimmerman Nilsson et al., p. 13)

This could then also lead to broadening the practical music repertoire in the music classroom. Hence, it is important to allow for diverse identities and abilities that embrace equal possibilities to intra-act with actors as sound technology, music instruments, music production, different types of music, different artists and different ways of making music in the entanglements in the music classroom. Therefore, the teacher might strive to find an increased balance in music teaching by further challenging gender inequalities and highlighting diversities in abilities among pupils. This includes reflecting on how to divide power between male and female students, and on how power is distributed in the music classroom. These implications, deriving from the findings, could create better conditions to move towards creating a gender equal music education classroom where gender is fluid, porous, and inclusive.

In conclusion, the entanglements between the actors shown in the findings, exemplified by the participants as "the whole world is there to relate to" seem to be the main reason for why it is complex to think about what is not already in place concerning gender equality in music education. The complex entanglements are also shown by the non-human actors involved, such as instruments and computers bearing their materiality as conditions for human and discursive actors. Hence, music education mirrors the entanglements in the intertwined gendered social world, a complex hybrid combination of materiality, humanity, and discourse in constant change (Haraway, 1991). Although complex, since music education is in constant change, it also has potential to move towards gender equality in the music classroom. Altogether, this study's approach, analysing which actors are at play and how they are entangled when music practitioners discuss the music classroom, has contributed to a broader understanding of the conditions needed to achieve gender equality in music education. Since

gender inequality in music education is well-known across various music education contexts (Onsrud, et al., 2021), our study has offered a unique perspective on this not-yet-solved problem, particularly through the use of actor-network analysis and post-humanist lenses.

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