Dialogic Pedagogy
an International Online Journal
ISSN: 2325-3290 (online)

# Dialogues in education: Exploring cases from music and mathematics education

**Hanne Rinholm**
Oslo Metropolitan University,
Norway

**Ida Heiberg Solem**
Oslo Metropolitan University,
Norway

**Inger Ulleberg**
Oslo Metropolitan University,
Norway

***Abstract***
*The aim of this study is to explore how aspects of dialogic teaching are concretized in classrooms to fill the gap between educational rhetoric and classroom practices. A central competency needed in our time is the ability to participate in democratic dialogue. Education for democratic citizenship can be connected to the notion of "becoming human," which is a central idea in the Bildung dimension of education. The national educational regulations in Norway state that the teacher's mandate is not limited to conveying knowledge and skills but also includes fostering the students' critical reflection, inquisitiveness, and participation. The research questions that guided the study are: What theoretical concepts can be helpful in understanding and analyzing dialogic classroom practices? How can participation be promoted through dialogic classroom practice? How do the dimensions of ontological and epistemological dialogue appear in educational settings, and how do they interact with each other? Methodologically, the article presents, analyzes, and discusses two cases from different educational settings: pre-service teacher education music courses and upper-primary-level mathematics education. The findings show that the chosen theoretical concepts of mathematizing, musicking, and Bildung, as well as ontological and epistemological dialogue, are helpful in making sense of dialogic classroom practices.*

***Keywords:*** *epistemological and ontological dialogue, education, Bildung, musicking, mathematizing*

**Hanne Rinholm** (previously Fossum) is a Professor of Music at the Faculty of Education and International Studies, Oslo Metropolitan University. Since 2018, she has been leading the multidisciplinary research group Teacher Education as a Process of Bildung at Oslo Metropolitan University and has been Program Co-Chair for the International Society of Philosophy of Music Education Symposium 2017–2023. She has published on topics such as musical-aesthetic experience, dialogue in education, democratic citizenship, critical reflection, and teachers' professional diversity competences.

**Ida Heiberg Solem** is Associate Professor Emerita in the Faculty of Education and International Studies, Oslo Metropolitan University. She is engaged in the topic of communication in the mathematical classroom, and her research interests comprise the exploration of the students' questioning, reasoning, arguing and justifying mathematical ideas and concepts. Solem has written several textbooks for teacher students and

teachers in Norwegian, as well as research articles such as “Which questions should be asked in classroom talks in mathematics” (with Inger Ulleberg) and “Aspects of a teacher’s mathematical knowledge in his orchestration of a discussion about rational numbers” (with Bodil Kleve).

**Inger Ulleberg** is Professor Emerita at the Faculty of Education and International Studies at Oslo Metropolitan University. Her research interests are connected to communication between teacher and students in the classroom as well as between counselor and teacher in counseling processes. Ulleberg has published research articles, book chapters, and textbooks on these questions, such as “Which questions should be asked in classroom talks in mathematics” (with Ida Heiberg Solem), “Asking Questions in Supervision” (with Per Jensen), “What do I share – Personal and Private Experiences in Educational Psychological Counselling” (with Heidi Mjelve and Kristin Vonheim).

## Introduction

A central competency needed in the 21st century is the ability to participate in democratic dialogue on different levels: globally, nationally, and locally. Considering the political situation in the world at present, where democratic dialogue is threatened by currents such as neoliberalism, populist nationalism, and polarization between social and ethnic groups, such competencies seem to be needed more than ever. The foreword to the United Nations Educational, Scientific and Cultural Organization (UNESCO) report *Rethinking Education: Towards a Global Common Good* (2015) calls for a changed education to meet these challenges:

> The world is changing – education must also change. Societies everywhere are undergoing deep transformation, and this calls for new forms of education to foster the competencies that societies and economies need, today and tomorrow. This means moving beyond literacy and numeracy, to focus on learning environments and on new approaches to learning for greater justice, social equity, and global solidarity. (UNESCO, 2015, p. 3)

New forms of education must prepare citizens for the changing world. Moreover, with the ongoing coronavirus disease 2019 (COVID-19) pandemic, as well as the Russian invasion of Ukraine, the world is facing the biggest global existential threats since World War II, and the term “global solidarity” used in the UNESCO report has thus gained new relevance. The climate crisis is another global threat. Education plays a key role in developing the knowledge, skills, attitudes, and values that are vital to upholding the democratic dialogue needed to address such problems.

On a national level, the Norwegian Education Act states that “pupils and apprentices must learn to think critically and act ethically and with environmental awareness. They must have joint responsibility and the right to participate” (Education Act, 1998, 1-1). The Act further states that pupils must have the “opportunity to be creative, committed and inquisitive” (Education Act, 1998, 1-1). These statements draw a picture of an active, participative student who is taught to be a full and responsible member of society. The global engagement with environmental issues in recent years, such as the school strikes for climate change initiated by the Swedish teenager Greta Thunberg, has shown that young students’ voices can be heard and can make a difference both locally and globally.

The values from the Education Act are defined more explicitly in the Core Curriculum of Norway’s new national curriculum (Core Curriculum, 2020), which has been implemented in Norwegian schools since August 2020. The Core Curriculum states that “[t]he teaching and training must give the pupils rich opportunities to become engaged and develop the urge to explore. The ability to ask questions, explore,

and experiment is important for in-depth learning" (Core Curriculum, 2020, 1.4). Another basic value in the new curriculum is defined under the headline "Democracy and participation," which is one of the three new key interdisciplinary issues reflected in the curriculum. Here, the stipulation is that "[t]he school must be a venue where children and young people experience democracy in practice. The pupils must experience that they are heard in the day-to-day affairs in school, that they have genuine influence and that they can have impact on matters that concern them […] The dialogue between teacher and pupils, and between the school and the home, must be based on mutual respect" (Core Curriculum, 2020, 1.6).

The values highlighted in these educational regulations point to the fact that the teacher's mandate is not limited to conveying subject knowledge and skills but also includes helping the students become critical and inquisitive societal participants and citizens. Such education for democratic citizenship can be connected to the notion of "becoming human," which is a central idea in the *Bildung* dimension of education (Fossland, 2004; Humboldt, 2000; Rinholm & Varkøy, 2020). Democratic citizenship education can also be understood in the context of what Gert Biesta (2014) referred to as "the subjectification dimension" of education. An education that includes both epistemological and ontological dialogue will be supportive of democratic citizenship (Matusov, 2009). Due to the focus of this study, we do not deeply discuss the possible cause-and-effect relationship between dialogic pedagogy and the development of democratic capacities, which we realize is not necessarily given in a direct sense. However, we still believe, in line with the Core Curriculum (2020), that dialogic pedagogy can contribute to *Bildung* and the development of democratic capacities.

These educational challenges form the background context of this study, in which we explore how general aspirations and values could be concretized in classrooms. Our aim is to fill the gap between educational rhetoric and classroom practices. First, we introduce the theoretical perspectives and concepts that we developed as a framework for the study and the analytical tools that we employed. Next, we present, analyze, and discuss two cases from different educational settings: pre-service teacher education music courses and mathematics education at the upper primary level. Finally, we compare and discuss the cases according to some common features of dialogic elements. The following are our research questions:

What theoretical concepts can be helpful in understanding and analyzing dialogic classroom practices?

How can participation be promoted through dialogic classroom practice?

How do the dimensions of ontological and epistemological dialogue appear in educational settings, and how do they interact with each other?

The first question is answered through the presentation of the theoretical framework and the discussion of the cases. The second and third questions are answered through the analysis and discussion of the cases, as well as in the final discussion.

## Methodology

This study is an interdisciplinary qualitative project based on empirical material originating from two teaching situations at different educational levels and subjects. The collaboration among the researchers stems from a joint interest in understanding the dialogic dimensions in education, both theoretically and practically. The research team consists of teacher educators in pedagogy, music, and mathematics. The study applies a deductive approach, in which theoretical concepts function as lenses for studying practice.

### *Background*

This project was developed across many years through different opportunities for collaboration. We, who are colleagues from different departments of teacher education at Oslo Metropolitan University, Norway, first got to know each other through a joint interdisciplinary book project on dialogues in education (Christensen & Ulleberg, 2013), which was followed up by a symposium about dialogues in education at a conference in 2014. At this conference, we presented and discussed the material and findings developed in each discipline. We then decided to continue this collaboration by exploring our joint interest in how dialogues with students could emerge in different educational settings. We found that bringing together cases from educational situations in different disciplines would enrich sense-making processes and discussions. While we were studying and discussing the relevant literature and each other's cases, we came to develop a common understanding of both the theoretical concepts and the material.

### *Materials*

The cases were chosen from a portfolio of materials developed through different projects in each discipline. We had a multitude of cases, transcripts, and observations from which to choose and were searching for cases that could show a variety of educational settings and simultaneously capture aspects of dialogue. Our reasons for choosing the two cases at hand were that they offered possibilities for comparison as well as a variety in both form and setting. The cases were chosen through preliminary examination and discussions in the project group, and the teaching situations were transformed into two cases that had a plot-like form, with a beginning, a middle, and an end.

The first case draws on experiences from a choir project as part of a pre-service teacher education music course in 2013. The part of the project portrayed in the case was chosen because of its complexity and many-layered character in terms of its different levels of communication and of being imbued with many not-outspoken qualities, which lent itself to an interpretation based on the theoretical framework used in this study. The choir project went on for 4 weeks, with six 2-hour rehearsals, one general rehearsal, and one final public concert. Forty students participated in the project. One of the researchers, who was also the teacher educator in the choir project, documented the project through diary notes and constructed the case shortly after the project ended. The researcher especially focused on existentially meaningful and significant events in the writing of the case (Polkinghorne, 1995, p. 19), which corresponds with the notion of ontological dialogue in the theoretical framework we are applying (Åsvoll, 2006; Matusov, 2009).

The second case stems from a project in which the researchers observed, audiotaped, and transcribed a 45-minute classroom talk that transpired in an upper-primary-level mathematics class (Ulleberg & Solem, 2015). This session was chosen because the lesson involved some of the theoretical aspects addressed in this study. The case was constructed through a selection of sequences from the transcript of the classroom talk. The selection was theory-driven, and sequences were chosen by the researchers as relevant for exploring traces of epistemological and ontological dialogue, as well as *Bildung* in the classroom talk. The sequences should also be rich enough to present a picture of the communication between the teacher and the students.

The music case is an account of the experiences from an event in which the researchers' interpretation played a role in constructing the story. Thus, the case is also based on and expresses the researchers' emotions and thoughts regarding what happened in the situation (Chase, 2005). For example, the researchers sensed that the event described in the case could be interpreted as an educative encounter with learning material involving the students' whole being (Bollnow, 1959, 1972). The same applies to the case of the mathematics classroom talk, in which the researchers' interpretation helped in choosing the relevant parts of the talk to be highlighted in the study. The cases belong to different genres, as one is a

constructed story, while the other presents transcripts of conversations from the classroom. Mathematics and music are also school subjects belonging to different knowledge traditions. These differences comprise some difficulties, as well as some opportunities for comparisons that could yield a richer and more complex understanding of dialogue in education.

### *Analysis*

The analysis was inspired by the narrative study method, which can underline the interrelatedness of theory with practice (McEwan, 1995). Narrative analysis is case-centered and grounded in the particular but general aspects that can be derived across narratives. Thus, "[the] particularities and complexity of the narratives come to the fore" (Riessman, 2008, p. 13). This can prompt the reader to go beyond the surface of the text and move toward a broader understanding of the text (Riessman, 2008). The narrative study method is closely connected to a hermeneutic line of thought, with a focus on the researchers' interpretation and meaning-making processes (Gadamer, 2004).

Each case was developed and analyzed by the researchers in each discipline independently and in the project group. The researchers participated in a hermeneutical process (Gadamer, 2004) in which the empirical cases served as the lenses for reading theory and where the theoretical concepts simultaneously guided the meaning making of the cases. The researchers moved toward a broader commentary and reached a consensus on using some common theoretical lenses in analyzing the two cases and drawing on concepts specific to each narrative. This process resulted in a focus on the common concepts of "epistemological dialogue," "ontological dialogue," *musicking*/*mathematizing*, and *Bildung*, which are elaborated on in the succeeding sections.

The researchers' voices merge in the methodological and theoretical parts of the article and in the discussion section, allowing for a multi-faceted view of the topic at hand. The aim of this study was not to provide fixed answers to specific questions but, in line with the ideals of dialogic pedagogy and hermeneutics, to arrive at new questions that may prompt an extended understanding of dialogic education (Gadamer, 2004).

## Theoretical framework

The theoretical framework of this study draws on multiple sources and traditions, such as the philosophy of education, hermeneutics, and different concepts concerning dialogic education. In this section, we present the joint framework for the study, in which the concepts of dialogue are central. In subsequent sections, we also present subject-specific concepts connected to the analysis of each narrative: *musicking* (Small, 1998) and *mathematizing* (Freudenthal, 1991).

In education, teachers and students meet, talk, argue, joke, and make faces and gestures; in short, they are in dialogue with each other. Arguably, life itself is fundamentally dialogic (Bakhtin, 1984, p. 293; Trevarthen, 1992, 2008). In the following sections, we first present different aspects of the theoretical concept of dialogue, including the notions of epistemological and ontological dialogue. Next, we introduce the notion of *Bildung*, which has vital intentions and aims in common with the concept of dialogue and may prove fruitful for an extended understanding of dialogue. At the end of this section, we present characteristic features of a dialogic classroom as identified in the literature in the field of dialogic pedagogy.

### *Dialogism, dialogue, and dialogicality*

Dialogism is a comprehensive, meta-theoretical framework for understanding human sense and meaning making (Linell, 2009, 2017). It is a way of understanding how we see the world and ourselves in it. Dialogism understands the human being as a dialogical and social being, and meaning and knowledge

as being created in the dialogical interactions between individuals. Mikhail M. Bakhtin, who developed the classical dialogism theory based on his reading of Dostoevsky's novels, claimed that the human mind is dialogic by nature. He found this displayed in Dostoevsky's work and stated that Dostoevsky, in his novels, "could hear dialogic relationships everywhere, in all manifestations of conscious and human life; where consciousness began, there dialogue began for him as well" (Bakhtin, 1984, p. 40). Bakhtin regarded Dostoevsky as the first author to create characters whose consciousnesses were different from his own, which to Bakhtin meant that his works were permeated with a profoundly democratic spirit (Bakhtin, 1984).

In a review article summarizing the current state of understanding of dialogue, Linell (2017) identified and categorized about 20 approaches to the study of dialogue or interaction. He distinguished between dialogue in the sense of overt exchanges of utterances, dialogicality (or dialogism), which denotes a general capacity for sense making through interaction with others, and interactivity, which implies that action, communication, and cognition are interactional in nature and must always be understood in the relevant context. Most theorists in this field agree that dialogism has moral and ethical dimensions (Linell, 2017, p. 307). Thus, dialogism allows for both an analytical, descriptive perspective and a normative perspective with epistemological and ontological dimensions. An approach inspired by normative dialogism is dialogic pedagogy, which advocates for democratic practices in the classroom (Alexander, 2008, 2018, 2020; Barnes, 2008; Dysthe, 2012, 2020; Matusov, 2005, 2009; Mercer & Hodgkinson, 2008; Wegerif & Phillipson, 2016).

In this article, we particularly refer to this approach, whose representatives intend to develop the theoretical and practical concept of dialogue in education in a certain normative direction. Arguably, it is a form of applied dialogism that elaborates on certain moral and normative aspects (Linell, 2017, p. 310). However, we also refer to dialogism as a non-normative theoretical framework and analytical tool, as dialogism, in this sense, may be used to understand and describe human learning, development, and change in general (Rommetveit, 2008; Trevarthen, 1992, 2008). This implies that we operate on several levels in our analysis because we describe both external dialogue and interactivity on the one hand and internal dialogue and more hidden aspects of dialogical education on the other hand, including the epistemological and ontological dimensions, and even silence (Hägg & Kristiansen, 2012; Linell, 2017; Matusov, 2009). Therefore, we relate to aspects from all the basic categories of dialogue, dialogicality, and interactivity, and our approach is both descriptive and normative (Linell, 2017).

Even though dialogism is not a normative theory per se, its statements function as a critique of monologic, traditional educational accounts and dichotomic understandings of education (Alexander, 2008). Dialogism recognizes duality, complexity, and heterogeneity and facilitates culture-sensitive, genuine, and humanizing teaching practices (Linell, 2009). As monologic and dialogic classroom practices are not good or bad per se (Matusov, 1996), we acknowledge that monologic teaching can have a place as a part of the repertoire of classroom practices, but we will not discuss this issue in detail in this article.

### *Epistemological and ontological dialogue*

In this study, we are especially interested in the relationship between the epistemological and ontological dimensions of dialogue in education. In line with Åsvoll (2006, p. 451), we understand the epistemological dimension as being mainly about the development of subject knowledge. Arguably, education is always concerned with the development of subject knowledge, which means that all dialogues in classrooms are basically epistemological. Epistemological dialogue can be connected to Biesta's (2014) qualification dimension of education, which we will elaborate on in the next section. The ontological dimension of dialogue in education, by contrast, concerns questions that are central to students' lives and self-understanding. It implies that what takes place in school engages the students on a deeper level (Dysthe, 2006, pp. 465–466; Matusov, 2005). Ontological dialogue is characterized by being uncompleted,

unpredictable, and experimental, besides having a transformed quality of time and space (Åsvoll, 2006, p. 449). There is also an existential dimension to ontological dialogue. Åsvoll (2006) claimed that there is a gap between the epistemological and ontological dimensions of the dialogic perspective and that they are not commensurable because they belong to different levels of interpretation. Such a view resembles the German educational philosopher Otto Friedrich Bollnow's existential-hermeneutic notion of the "continuous" and "discontinuous" forms of education, in which the former is systematically planned, while the latter is offered only as educative encounters with learning materials involving the students' whole being (Bollnow, 1959, 1972; Koskela & Siljander, 2014, p. 73).

A focus on the ontological aspects of teaching leads to the whole-person engagement of both the teacher and the students in the studied curriculum (Matusov, 2009, p. 125). This means that the teacher, as a person, must come forward and participate with genuine engagement in the classroom. Students also need to be recognized and engaged as persons, not merely as knowers (Barnett, 2005, p. 795; Fossum, 2015a; Hansen, 2011, p. 251). An ontological-dialogic, being-oriented approach to education acknowledges openness, wonder, commitment, and passion as integral to learning (Dall'Alba & Barnacle, 2007) and as instrumental in the creation of meaningful educational events (Matusov, 2009, p. 376). When subject-specific discussions are allowed to merge with or even emerge from the students' own experiences and lifeworlds, they have the potential to attain ontological-dialogic qualities. These facilitate dialogues that further ontological engagement (Matusov, 2009, p. 125).

### *Dialogue and Bildung*

In line with our view of the tension between the epistemological and ontological aspects of dialogue, Biesta (2014) emphasized that the goal of education is multilayered and complex. He identified three central dimensions that are at stake at the same time. First, education should deal with *qualification*, which involves providing students with knowledge, skills, and understanding. Second, education should promote *socialization*, introducing students to traditions and culture. Both qualification and socialization can be connected to the notion of epistemological dialogue. Third, Biesta (2014) described *subjectification* as a dimension of education that has to do with the students' process of personal development and becoming independent and responsible citizens. These ideas can be related to the ontological aspects of dialogue and the theory of *Bildung*. Subjectification, as Biesta used the term, is connected to the process of becoming a human subject. Education should contribute to students becoming more independent in their acting and thinking.

The concept of *Bildung*, which was developed in the German-speaking area between 1770 and 1830 by the thinkers Lessing, Herder, Kant, Pestalozzi, Schleiermacher, and von Humboldt, among others, considers education important for the cultivation and development of humans as persons, not only for conveying scientific knowledge to them (Klafki, 2001a). The cultivating aspect of *Bildung* is about being educated in true humanity and about fostering wise and virtuous human beings. A person who is *gebildet* is well educated and able to think critically, behave politely, wisely, and responsively, and treat others with respect (Rinholm & Varkøy, 2020, p. 42).

A central idea of the concept of *Bildung* is the notion of *Mündigkeit*—the empowered, critical, and independent citizen (see, for example, Klafki, 2000, 2001b, 2001c). Kant stated in 1784 that "[e]nlightenment is man's emergence from his self-imposed immaturity (*Unmündigkeit*)." Thus, Kant advised human beings to "Have courage to use your own understanding!" (Kant, 1983, p. 41). In line with this, von Humboldt, ten years later, described this aspect of *Bildung* as educating the individual by helping him obtain a "fresh view of the world" and his "own perspective." The educated person "no longer wants only to prepare knowledge or tools for men's [sic] use, no longer wants merely to help further just a part of

his Bildung" (von Humboldt, 2000, p. 60). Rather, according to von Humboldt, the educated person will achieve a more holistic measure of *Bildung* that emphasizes her self-determination.

The two aspects of *Bildung* described in this section, the humanizing aspect and the notion of autonomy (*Mündigkeit*), are especially relevant to dialogic pedagogy. Dialogic pedagogy is particularly concerned with helping students develop their own voices and their whole person (Dysthe, 2001; Matusov, 2009). Moreover, the dialogical dimensions of teaching value equal participation as an important condition for learning and *Bildung* (Dysthe, 2001; Wells, 1996).

### *The dialogic classroom*

Not every dialogue has genuine dialogic qualities, and simply proclaiming that there should be dialogue in one's teaching is not sufficient. In Matusov's (2009) view, focusing too much on achieving dialogue in the classroom may even have a counterproductive effect: "The more one focuses on learning and dialogue, the farther they become. Dialogue like nirvana, like happiness, like love, like learning cannot be achieved by the direct desire to have a dialogue" (Matusov, 2009, p. 385). Accordingly, it is not merely the use of dialogue as an overt exchange of utterances that characterizes teaching as dialogic. Rather, dialogic teaching can be defined as whether the teacher facilitates genuine dialogic communication (Dysthe, 2012, p. 46; Matusov, 2009). Dialogic qualities are manifested both in explicit utterances and in implicit acts (Ulleberg & Solem, 2015). It is even possible for these qualities to be manifested through silence or through tacit agreement (Hägg & Kristiansen, 2012).

Arranging a classroom where genuine dialogic communication is allowed can be understood as establishing a didactic contract (Brousseau, 1997) between the teacher and the students, in which they agree on certain dialogic values. A didactic contract consists of the implicit or explicit rules for interaction in a classroom, often as a tacit agreement between the teacher and the students that determines what is at stake in the classroom. The teacher's genuine engagement in the activities held in the classroom, as shown by the fact that she listens to her students, will be part of a didactic contract that affords genuine dialogic communication between the teacher and the students. Of course, such a didactic contract also needs to consider institutional and formal structures, such as scheduling or the demands for assessment. However, the teacher is the most important factor in shaping an atmosphere that gives room for genuine dialogue, even within a strict schedule (Nordenbo et al., 2008). Thus, genuine dialogic dialogue is imbued with many nonverbal qualities. Further, being silent may pave the way for students and teachers to participate in dialogue if the other participants are listening carefully with all their senses.

Arguably, the most basic value of dialogic pedagogy is the safeguarding of human dignity (Fossum, 2015b; Michelet, 2020). According to Matusov (2009), dialogic pedagogy is an educational practice guided by a pro-dialogic project of education, which has three characteristics. First, it is expressed through the teacher's attitude toward the students; that is, she does not simply manage their learning but is also a learner and learns together with them (Freire, 1972; Matusov, 2009, p. 5). Second, dialogic pedagogy is expressed through the belief that stable knowledge does not exist; rather, knowledge is always social and dialogic and must be problematized and negotiated. In this negotiation process, the students' and the teacher's consciousness are valued as equally important (Matusov, 2009, p. 5). The third quality is shown through genuine information-seeking questions that both the students and the teacher ask each other (Matusov, 2009, p. 5).

As already indicated, a dialogic educational perspective is not necessarily merely about conducting dialogues in the classroom in a concrete and everyday sense. Dialogue does not even have to include the use of words. Through the teacher's many words and activities and through their wish to become effective and successful, they may miss important dimensions of education that are connected to the more hidden

and contemplative aspects of existence. Teachers may too hastily deem quiet students as "passive" or "doing nothing" (von Wright, 2007). Such notions often bring up negative associations in today's teachers, who are professionally rooted in dominant activity-based educational theories (i.e., Dewey, 1926, 1938). Even in dialogic pedagogy, it often seems that active participation in dialogue is regarded as a key premise. Moira von Wright (2007) suggested seeing "passive" students' behavior from an alternative viewpoint: that these students may merely be "at ease" with themselves.

In the next section, we present and discuss two cases from different educational settings: a pre-service teacher education music course and an upper-primary-level mathematics education course. As already indicated, the aim of this study was to fill the gap between educational rhetoric and classroom practices. This means that we looked for elements of dialogic pedagogy in the two educational situations. The cases exemplify how dialogic pedagogy may be found and carried out in different educational settings.

## Classroom practices

### *The case of a choir project*

> Music teacher educator Ann organized a choir project with her pre-service music teacher students. She invited them to suggest songs to be included in the program, together with some classical choir works of her choice. One student, a musical enthusiast, suggested the song "Seasons of Love" from the musical *Rent*. Ann initially doubted that this song would be suitable because of its style and content. *Rent* was staged in the arts venues in New York around 1980, at the time of the first global HIV/AIDS epidemic. The song itself is about enjoying life with your loved ones while you are still alive. Ann found this theme somewhat odd for a concert program, but she finally decided to go for the song. During the first rehearsal, she discussed the lyrics of the song with her students. A little hesitantly, she decided to tell them about her own experiences with AIDS. Her brother had been infected with HIV while studying in the U.S. around 1980. He died of AIDS later, just before life-saving treatment was found for the disease. There was a deafening silence in the room while she was telling this story, which later drove Ann to ask herself if she had made the right decision to share this personal story with her students. After the rehearsal, however, some students thanked her for her openness. During the concert, the song was performed in an atmosphere of cheerfulness and joy. Along with this cheerfulness, the song became a deep, existential undertone for Ann and maybe also for her students.

In the following sections, we will analyze and discuss the situation described in the case through the theoretical lenses of the concepts of *musicking*, epistemological and ontological dialogue, didactic contract, musical-existential experience, and existential *Bildung*.

### *Analysis and discussion of the choir project case*

#### Musicking

Arguably, in the encounter between music and human beings, there are manifold relations at play. Christopher Small (1998) introduced the term *musicking* to thematize music's character as an event, something people *do* and participate in, rather than being just a thing or an object. When people participate in musicking, meaning when they participate in a musical event in one way or another as musicians, listeners, or audiences, or even as ticket sellers, there is a set of relations at stake. That is, "[m]usicking is a ritual that explores, affirms and celebrates relationships – the pattern which [sic] connects, Batesonian mind in nature – at a biosocial and gestural level that is deeper and more complex than mere verbal languages [do]" (Keil, 2000, p. 161). For Small (1998, p. 8), the meaning of music is not individual but social. The relations created between the people participating in a musical event are the meaning and the end of

music. These relations act as metaphors for the ideal relations between persons, between the individual and society, and between the human being and the world, both the natural and the supernatural (Small, 1998, p. 13).

Musicking is thus a way of knowing the world, a world of experienced relations in all their complexities (Small, 1998, p. 50). Seeing the music classroom from such a perspective creates a wider, higher, and deeper classroom than the one that is visible, with a "heaven" above and a wide space of invisible relations encompassing it, allowing ideas, emotions, and existential overtones to resonate behind and beyond what, in a concrete sense, happens in the music classroom. Due to what happened during the rehearsal, the performance of the *Rent* song in the concert increased in complexity. Existential themes such as different forms of sexuality, sickness, and death, even the tabooed theme of HIV/AIDS, but also the joy of life, love, and friendship and the excitement of performing music together with fellow students in front of an audience consisting of friends, educators, and family, were all at stake during the concert performance. However, to Ann, the hesitation, doubt, and shame she had felt during the rehearsal because of her openness regarding her brother's death was also at stake.

This narrative illustrates how music can be experienced as a multi-spectral universe of meaning that allows the complexity of the emotions and experiences belonging to the human condition to exist and be felt simultaneously (Nielsen, 1998, 2006, p. 166). The relations that were awoken and celebrated with such a performance were those between the musicking participants (the students, Ann, and the audience), but also the relations with the dead brother and with all those who have suffered from and died of AIDS were brought into remembrance and celebrated. In this way, the relations between the living and departed human beings and between the natural and supernatural worlds were brought into being (Small, 1998, p. 13). The musicking perspective thus encompasses both the epistemological and ontological dimensions of dialogue in the pre-service music teacher classroom.

### Epistemological and ontological dialogue as a didactic contract

Ontological and epistemological dimensions are simultaneously at play in all classrooms, in visible and invisible forms, and in heard and unheard ways (Pio, 2007; von Wright, 2007). During the choir project, as described in the narrative, the teacher conveyed concrete subject-specific knowledge content through dialogue and through music practice. The students were taught and had to learn by heart the songs and classical works included in the concert program. They learned to sing and convey songs and classical works musically in a certain way, and they also acquired practical knowledge and pedagogical skills related to how to manage and direct a concert performance in school. Such aspects of teaching and learning arguably belong to the epistemological dimensions of classroom dialogues.

However, the ontological dimensions of dialogue in the music classroom are more hidden. By giving room for the students' own song suggestions, Ann set a standard for which and whose music choices were legitimate to express. The students' musical preferences were valued as equal to her own. The values and patterns of communication she conveyed to the students became part of the didactic contract in this pre-service teacher classroom (Brousseau, 1997). Ann modeled to her students how to give room for the students' voices without abandoning her own voice and her subject-specific authority. She did not abdicate from the professional leadership of the project. This feature is a dialogic quality in line with Bakhtin's idea of letting "consciousnesses of equal rights" have their say in the classroom. Neither dogmatism nor relativism regarding musical taste was allowed to hinder authentic dialogue (Dysthe, 1999, p. 15). According to Bakhtin, there is no contradiction between dialogic teaching and conveying subject-matter knowledge. On the contrary, the teacher's authority, both as an expert and as a person, is essential for developing "the internally persuasive word" in the students, which arguably is the paramount goal of dialogic education (Bakhtin, 1981, p. 345; Dysthe, 2006, p. 466). Here, we follow Dysthe's understanding of the notion of the

internally persuasive word as supporting students in finding their own voice. This idea coincides with von Humboldt's notion of *Bildung*, in which the empowerment of the person toward developing her own autonomy (*Mündigkeit*) is central, which includes developing a "fresh view of the world" and one's "own perspective" (von Humboldt, 2000, p. 60).

Ann also set a standard for what topics were legitimate to discuss in connection with the songs and music used in the classroom. Ann's decision to speak openly about her personal experience with AIDS can, of course, be called into question. The border between being personal and private in educational relations is subtle, and there is no clear answer to the question of which teacher attitudes are appropriate in such situations. Therefore, it is necessary to find a balanced way of handling emotionally charged issues in the classroom so as not to make students feel unsafe. The teacher should not allow herself or any student to step over this border by becoming too personal or even private, and she should be aware of the danger of letting the lesson content become "too close to home" or "too ontological" (Matusov, 2009, p. 376).

### Musical-existential experience

The question of whether existential themes, such as sickness and death, are relevant to classroom discussions can be further raised. Sometimes, things happen that necessarily put forward such themes, such as the mass shooting on the island of Utøya in Norway on July 22, 2011, where 69 mainly young people died. In the months after the mass shooting, the teachers were compelled to address these themes with their students, regardless of their grade level. In nearly all classes, some students were either personally affected because someone in their family was on the island when it happened, or they knew someone who was affected by the incident. In some classrooms, there were even students who went missing forever. In this situation, certain songs and music could better capture the sense of life and the atmosphere that reigned in Norway at that time than words could (Knudsen et al., 2014). This example shows the vital role that music can play in significant moments in students' lives. In the literature, such experiences with music are referred to as musical-existential experiences (Pio & Varkøy, 2012). Such incidents and situations have the potential to create ontological relevance (Matusov, 2009) for the themes discussed in the classroom, themes that concern the students at a deeper level. The 9-11 terror, the ongoing climate crisis, the recent pandemic, and the Russia–Ukraine war are other examples of such themes. Existential experiences with music, however, do not necessarily have to concern only negative or dramatic events; everyday issues and joyful life events may also be of existential importance to students. As the case shows, happiness may be conveyed simultaneously with more sorrowful or contemplative emotions through music. Of course, joyful singing does not necessarily reflect the singer's inner emotional state during a performance. It is a conventional musical practice to facially express the emotions of a text when performing songs. Still, it is not unreasonable to assume that at least some of the students remembered the rehearsal talk about the song "Seasons of Love" during the performance while simultaneously enjoying the joyfulness and success of the performance.

### Existential *Bildung*

In line with this, the Danish education philosopher Finn Thorbjørn Hansen uses themes from the students' lifeworld as a basis for reflection in his being-oriented, bottom-up approach to existential *Bildung,* starting from the phenomenological description of cases in which the students were emotionally affected (Hansen, 2011). This concept is built on the pedagogical concept of wonder inspired by Hannah Arendt, which also includes a reflection on the "unsolvable mystery" that life experiences often represent (Hansen, 2009, 2010, 2011). A specific type of "cautious listening" is applied to produce "real education" (*Bildung*) in a Heideggerian sense, which Hansen calls "ontological education" (Hansen, 2011, p. 252).

It is evident that the concepts of existential experience, existential *Bildung*, and ontological education resonate with the notion of ontological dialogue described and discussed in connection with the choir project case. Hansen's notions of cautious listening and existential *Bildung* have commonalities with von Wright's reminder of listening carefully (with all one's senses) to silent students so as not to miss the important aspects of education connected to the more hidden and contemplative aspects of existence (von Wright, 2007).

### *The case of a mathematics education class*

The classroom dialogue described in this case from a mathematics education class took place in a large city school where the students had mixed backgrounds. The setting was a classroom where 25 seventh-grade kids sat on benches in a circle in a corner. The two researchers sat in the background, audiotaping the lesson, and taking notes. The teacher had prepared a classroom talk that included comparing rational numbers and placing them on a number line. The numbers were written on a flip-over, as shown in Figure 1:

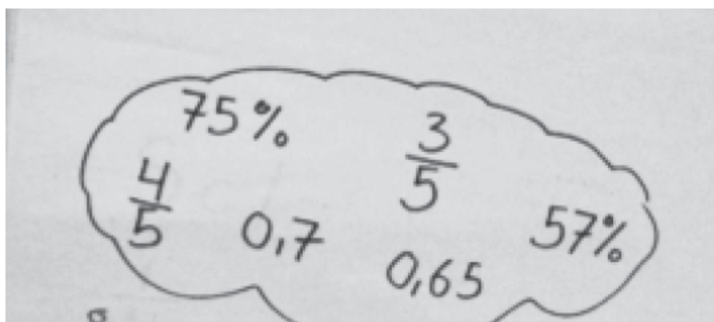


Figure 1. From the flip-over

The teacher started by saying:

Teacher: I will give you some time to think on your own before you answer. You are allowed to discuss this with the student next to you. I am not very concerned about whether this is eventually completely correct. However, the important issue is for you to explain how you are thinking. […] [W]e are going to place numbers on a number line, and I do not want you to place them right away. I want us to talk about the numbers first. OK? Therefore, the goal of this lesson is to be able to place fractions, percentages, and decimal numbers on a number line.

The students discussed different aspects of the numbers by comparing and exploring them. After about 25 minutes, the teacher posed a challenge to the class:

Teacher: Can you find a fraction between 3/5 and 4/5?

The students worked with the challenge by expanding the fractions: 3/5 to 6/10 and 4/5 to 8/10 and finding 7/10 between them. Suddenly, some of the kids made a discovery.

Neda: Now the same happens again; 4 plus 3 is 7!
Elias: It was like that the last time we did it!
Kim: It happened then too, but you said it was a coincidence.

Teacher: But maybe there is a pattern here?
Students: Yes, yes…
Teacher: Wait a minute …
Lisa: Last time it wasn't ten, but now it is ten, isn't it?
Neda: We can add them both, the denominators, and get ten.

The students discovered that they could find a fraction between 3/5 and 4/5 by adding the numerators (3 + 4 = 7) and the denominators (5 + 5 = 10). They also remembered that this happened the last time they had worked on similar tasks, so they claimed that they had found a mathematical pattern. The teacher, however, could not see the pattern clearly.

Teacher: Some of you are starting to see some patterns that I'm not sure I can see.
Hanna: Yesterday, we had the same, or we multiplied both by two. Then we saw that – that those numbers, I mean, the numerators, if we added them, it became the same as, yes, as the answer. And now it happened again.
Teacher: OK. But if it has happened twice, are we sure it will happen next time?
Lisa: No, but there is such a rule that if it happens once, it is completely random – twice it is special and three times it's okay.
Teacher: Three times, then it must be that way? Is there such a rule?

The teacher did not know if this was a pattern that held mathematically, but he knew that in mathematics, three examples are not enough to call it a rule. However, if there is *one* counterexample that does not follow the rule, it is sufficient to dispel the "rule." He knew that the students should explore this further, searching for counterexamples, and he gave the class new fractions to explore:

Teacher: We must explore this further. Can you find a fraction between 1/4 and 2/4? Januscha?
Januscha: I just moved – one plus two – I added the numerator and the numerator, and that was three, and then the denominators, and that was eight, and to be sure I doubled it.
Teacher: And then you reached three.
Januscha: Out of eight.
Teacher: OK. Have you all reached the same?
Students: Yes, yes.
Teacher: OK. So, we can see a very similar pattern now. If we add the numerators and add the denominators, we will find the fraction in between. But are we confident? Does this apply to all kinds of fractions?
Students (different voices): No – we don't know… Yes…

After studying even more fractions together, the students came up with different hypotheses, with the examples as a point of departure:

- I think … it always goes when there is one even and one odd numerator.
- When there are two even numbers or two odd numbers, there is always a number between.
- When there is one number of each, then it goes.
- I think—I do not know if it applies to fractions with different denominators.

The teacher summed up the discussion by commenting, "Do you know that we are looking at an area that I have not quite checked yet? I do not know how this will end, either. I cannot see all the patterns that are there, so I think this is very exciting. We need to work much more with this in the future."

In the following sections, we analyze and discuss the case from the mathematics classroom concerning the dialogic aspects of the conversation. We point out and discuss the features of epistemological and ontological dialogue and the *mathematizing* and *Bildung* aspects in the talk.

## *Analysis and discussion of the mathematics classroom case*

### Didactic contract

The teacher in this second case had been a teacher in this class for several years and had established a didactic contract with the class as a community of learners characterized by participation and sharing (Brousseau, 1997; Ulleberg & Solem, 2015). This comes to expression in the teacher's introduction to the task:

> Teacher: I will give you some time to think on your own before you answer. You are allowed to discuss this with the student next to you. I am not very concerned about whether everything is eventually completely correct. However, the important issue is for you to explain how you are thinking.

Through this introduction, the teacher communicated several intentions and goals: to think, talk, share, explain, doubt, and discuss. He expressed an understanding of the subject of "mathematics" as a venue for searching for patterns and relationships, formulating hypotheses and assumptions, and investigating whether these can be confirmed or disproven (Lampert, 1990). However, it is not sufficient to express a view explicitly if it is not followed up with implicit messages or actions through the way the teacher asks questions, listens, follows up on students' inputs, and orchestrates a classroom talk in line with an epistemological dialogue (Ulleberg & Solem, 2015). We will now have a look at how the teacher in this case followed up on his explicit introduction by acting in accordance with what he said.

### Epistemological dialogue

In this case, the students' contributions were seen by the teacher as crucial and of interest, and the students listened to the teacher and his questions and to each other. They trusted their own thinking and wanted to share their thoughts with others. The students were used to being challenged and explaining, justifying, and arguing. Such an epistemological dialogue can be seen as a reflective communication with the intention of sharing ideas to deepen the students' mathematical understanding (Brendefur & Frykholm, 2000).

Kazemi and Hintz (2014) claimed that classroom discussions in mathematics should be guided by four principles. In our view, these principles can be connected to Biesta's (2014) three dimensions of education. The first principle is that discussions should achieve a mathematical goal, which is related to Biesta's idea of qualification. We found an example of this in the segment in which the students were looking for and learning about "in-between fractions." The second principle is that students need to know how to share mathematical content. This can be connected to Biesta's socialization aspect of education. In this case, the students were active in the classroom talk and willingly shared their thoughts and explanations with each other. The third principle is that teachers need to orient their students to each other and to mathematical ideas at the same time. This principle can be connected to both the socialization and qualification aspects of education (Biesta, 2014). The teacher, in this case, explored the issue at hand and challenged the students to explain their thoughts and to develop hypotheses. The fourth principle for classroom discussions in mathematics is that teachers must communicate to all students that their ideas are valued and make sense. This is in line with Biesta's concept of subjectification (2014). In this case, the teacher took the students' inputs seriously and let them influence the teaching.

The last principle aligns with the aspects of dialogue presented above, as stated by Matusov (2009), concerning the teacher's attitude toward the students. Matusov claimed that a teacher who carries out dialogic pedagogy is also a learner and learns together with the students and values the consciousnesses of the students by letting them ask and answer genuine information-seeking questions.

The teacher's questioning is a fruitful springboard for talks with dialogical elements (Boaler & Broadie, 2004; Mason, 2000; Ulleberg & Solem, 2018). In the classroom talk, the teacher prepared a challenge for the class formulated as a question: "Can you find a fraction between 3/5 and 4/5?" He trusted the students to be able to consider his question and come up with some answers to it. He listened to the students and was interested in what they were saying. He challenged them to explain their views by explaining why they believed these views were true. The students were expected to justify their thinking through deductive reasoning (Kazemi & Hintz, 2014). In this way, they learned to be critical and to argue, and they learned that their participation was crucial for developing the classroom talk. These are elements of an epistemological dialogue aimed at developing knowledge. The subjectification side of education offers a perspective for exploring the notion of ontological dialogue in this case.

### Ontological dialogue

Arguably, when students explore a matter together with the teacher in classroom talk (in this case, the patterns between fractions), and when the teacher clearly states that he is uncertain about the matter, the students will participate in a dialogue in which some ontological features can develop. Classroom talk can engage students on a deeper level and can help them deal with issues relevant to their self-understanding and their understanding of being human (Dysthe, 2006, p. 466; Matusov, 2005). When the teacher in the narrative said, "Some of you are starting to see some patterns that I'm not sure I can see," he shared his fallibility with them and introduced the idea that children can sometimes understand more than grown-ups can and that teachers are also learners. As he also said, "I do not know how this will end," he shared with the students his experimental attitude toward exploring the subject at hand and his openness to the unpredictable elements of teaching. Allowing oneself to stand on thin ice and showing such a fundamentally curious attitude are significant features of ontological dialogue (Åsvoll, 2006). The dialogue can then develop to a deeper level, where issues of self-understanding can be touched upon.

Through the classroom talk, the teacher actualized elements of ontological dialogue by conducting the conversation in a certain direction. He picked up initiatives from the students and let them influence the classroom talk. He put a student at the center of the talk when he let Neda express her finding: "Now the same happens again, 4 plus 3 is 7!" Further, he followed up on a student's initiative when he reacted to Hanna's elaboration on what happened again when the numerators were added. The teacher also showed genuine curiosity when he asked Januschka to explain her thinking while she was exploring another example (1/4 and 2/4): "I just moved – one plus two – I added the numerator and the numerator, and that was three, and then the denominators and that was eight, and to be sure I doubled it." Finally, the teacher asked the students to come up with hypotheses such as, "I think … it always goes when there is one even and one odd numerator. When there are two even numbers or two odd numbers, there is always a number between. When there is one number of each, then it goes. I think—I do not know if it applies to fractions with different denominators." In this way, the teacher implicitly conveyed to the students that the world is complex and that we need to collaborate with each other and think together to address this complexity by developing different hypotheses and that we learn from each other. Such an approach can also be related to a foundational understanding of learning mathematics as *mathematizing* (Freudenthal, 1991).

### *Mathematizing*

Dialogical classroom talks in mathematics class imply a collective reflection led by a competent teacher (Bergem & Klette, 2012). Through such talks, students develop mathematical competence by learning to mathematize (Freudenthal, 1991). *Mathematizing* involves being able to express, test, and revise one's ways of thinking. It includes trying out, discussing, and analyzing ideas in a learning community. Mathematizing is encouraged through conversations that give room for different voices to be heard and that alternate between questions and answers and between arguments and doubt, as we found in the described classroom talk. Mathematizing is about creating connections between written and oral mathematical expressions and directing one's attention toward process aspects that centralize oral activities and mathematical language (Riesbeck, 2008). Learning mathematics does not only consist of the mere transference of knowledge but rather of meaning-generating communicative processes between persons that include dialogue and transformation of the participants' understanding of the topic (Biesta, 2014; Solem & Reikerås, 2017). We claim that our case has the features of mathematizing, as both the students and the teacher participated in meaning-generating conversations connected to the understanding of fractions. Mathematizing has similarities with the term *musicking*, as we explored in the choir project case, in that the processes are regarded at least as important as the "products," a view that becomes evident through the use of the verb form in both concepts.

### *Bildung* in mathematics

We can also connect the mathematics classroom talk to the question of mathematics as a formative subject in which the students participate in dialogues that foster *Bildung* processes. As the students learned subject-specific content, the teaching simultaneously focused on how working with mathematics could help them develop critical and active abilities. How the teacher conducts classroom talk can promote participation in a dialogue in which all the participants can introduce questions to explore (Roth, 2004). This can be connected to ontological dialogue and subjectification, where the independence of student thinking and action is promoted (Biesta, 2014).

Mathematics education in this form can promote democratic citizenship by empowering students (Rangnes & Herheim, 2019). In the classroom talk portrayed in the case, we found examples of students who posed questions to their teacher and who participated in further investigations of these questions. They had a voice, and they knew how to use it. By working with mathematical questions, the students on a meta level learned some crucial aspects of democratic citizenship, such as participation, independence, listening to others, and posing critical questions (Bateson, 1972). This type of mathematics education can also be compared to Biesta's (2014) concepts of socialization and subjectification as part of the ontological dialogue in education.

## Discussion

In this section, we discuss the common features of the two cases and the questions concerning aspects of dialogue in educational settings in light of the theoretical perspectives. We also discuss the relationship between the epistemological and ontological dialogues taking place in *Bildung* processes. Next, we discuss the teacher's role in dialogic teaching. Finally, we attempt to connect experiences from the classroom to educational rhetoric concerning the values schools are obliged to impart to students, as elaborated on in this article's introduction.

### *Dialogic features in the cases*

The two cases in this study have some common features concerning dialogic teaching. In both cases, the teachers listened carefully to the students' input. Both teachers engaged in the dialogic practice

of “uptake” in that they invited the students to contribute to the dialogue, listened to the students’ ideas and arguments, and let the students’ contributions affect the further development of the activity (Dysthe, 1993; Nystrand & Gamoran, 1991). The music teacher listened to the students’ suggestions regarding which songs to render in the concert, and the mathematics teacher followed up on the students’ discovery about fractions. Both teachers had important subject knowledge and were worth listening to (Alexander, 2008). They were themselves active participants in sense-making conversations in their classes. Both narratives showcased teachers who were willing to take risks, not knowing for certain where the students’ input would lead them. This is a hallmark of genuine dialogue, in which one must give up monologic control over the outcome of the communication. Matusov (2009, p. 3) argued that “learning is the transformation of a student’s meaning, it is unpredictable, undetermined, and cannot be designed or controlled by the teacher.” Similarly, Biesta (2014, p. 25) emphasized that “[d]ialogic teaching with real participation rests on the basic understanding that educational processes cannot be fully controlled by the teacher.”

The participants’ knowledge and meanings can also be expanded, changed, and developed by classroom dialogue, resulting in each participant learning something new. This applies to both the teacher and the students (Freire, 1972). In a genuine dialogue, the participants are present as subjects, and they develop a subject–subject relationship in which they listen to and trust each other. In our narratives, the teachers modeled such subjectification by openly showing themselves and their values. We argue that they appeared as whole persons to the students, as they demonstrated both their relations to the subject matter at hand and their relations to their students (Matusov, 2009). These features can also be understood as part of the didactic contract that both teachers established with their respective classes (Brousseau, 1997).

Arguably, dialogic pedagogy focuses more on the relations between the entities in the didactical triangular meeting (the learner, the teacher, and the content to be learned) than on these entities themselves (Ulleberg & Christensen, 2020). Regarding the relations between the students and music (Small, 1998), the teacher showed interest in the kind of music that the students liked and identified with and how they thought and felt about their music. This requires the music teacher to let her classroom become an arena of dialogue and negotiation, not least regarding which and whose music should be represented (Fossum, 2015b). In the mathematics classroom talk, the teacher attempted to explore how the students thought and made sense of his mathematical question. Dialogic education is, therefore, essentially closely connected to what Biesta (2014, 2015) called a “world-centered pedagogy,” different from child- and content-oriented pedagogy. A world-centered pedagogy focuses on the teacher’s active relationship with the world and engaging the students in being connected to the world, which here applies to music and mathematics.

## Bildung: *ontological and epistemological*

From the perspective of the *Bildung* dimension of education, which is part of the school’s mandate, focusing on the relation between the student and music or mathematics also means being interested in how this relation may be developed and extended. Becoming musically and mathematically *gebildet* (educated) involves going through formation processes and being transformed through encounters with something new and unknown that is of significance to the experiencing individual, which can be a subject matter, a piece of music, a historical period, or a person (Bollnow, 1959, 1972). Musical and mathematical *Bildung* is the “transformation of basic representations of the self and the world” (Koller, 2011, p. 17, our translation). However, as this transformation cannot be planned or enforced, the teacher’s task is to prepare for and facilitate encounters with music rather than to try to force these to happen. This is also the case in mathematics education. The teacher’s power to plan, manage, or direct *Bildung* processes is therefore limited (Bateson, 1972; Fossum, 2015a, p. 83). In line with this, Biesta (2014, p. 25) stated that teachers do not produce or create their students, but students are “human subjects of their own.” Rather, the

teacher's task may be to leave room for a variety of musical genres and mathematical ideas and for a variety of ways for the students to experience and talk about music and mathematics.

The *Bildung* processes comprise both the ontological aspects of being and the epistemological aspects of learning. As we have seen in the two cases, teachers must pay attention to the multilayered dimensions of teaching, in which the students learn about the world and about themselves simultaneously, as they are both learners and persons. According to Bateson's (1972) learning theory, students always learn at several levels at the same time. They learn about the concrete subject content of a specific lesson as they simultaneously acquire a fundamental understanding of the subject. Further, they learn something about themselves in connection to the subject (in our case, music and mathematics) and about themselves in relation to other people, such as the teacher and their fellow students (Bateson, 1972). This line of thinking coincides with Biesta's ideas about the complexity of teaching and learning through the subjectification, qualification, and socialization aspects of education (Biesta, 2014). We claim that the way students are dealt with and listened to on a micro level in classroom talks in different subjects can support their development into democratic citizens.

Using the concepts of *musicking* and *mathematizing*, we underpin an understanding of the multilayered and complex aspects of teaching. The teacher can develop alertness to the *Bildung* aspects of communication in educational settings. The teacher's understanding of the subject matter at hand and the didactical questions she poses are crucial for her sensitivity to both epistemological and ontological challenges and possibilities in actual teaching situations.

In agreement with the ideals of dialogic teaching, the teacher needs to be genuinely interested in how students gradually grasp new dimensions of the subject matter at hand. Simultaneously, she needs to be genuinely interested in the students' ways of interacting with each other. Further, the teacher should ask focused but open-ended questions and should give herself and the students time to reflect without losing the pace of the lesson (Alexander, 2008). The aims are to support the students in their investigation of the subject matter at hand and to consolidate new insights or practices more than to compel the students to give a correct account of what appears in the textbook.

Dialogic pedagogy neither promotes a romantic view of education based solely on the students' own interests nor promotes teachers who abdicate from being responsible persons for the activity. The teachers in the two cases were supposed to be leaders of the students' task of learning both regarding open investigation and acquiring established valuable knowledge for gradually becoming active fellow citizens. As the two cases show, both the teachers and the students dared to put themselves at risk by improvising and standing on thin ice. Both teachers showed their vulnerability to their students, one by sharing her personal story and the other by showing his fallibility and lack of knowledge. In so doing, they showed that they were whole persons and acted as models for the students. For students to develop as whole persons, it is necessary that their teachers show their different sides in the classroom. This can be seen as crucial in promoting *Bildung* processes. Such educational experiences, with openings for showing vulnerability and genuineness, can turn everyday situations into "golden moments" where teachers and students meet in ontological encounters.

The development of the class as a community of learners may offer new opportunities for both subject learning and social learning as part of the students' development toward citizenship in a pluralistic democracy (Matusov, 2009). To achieve this ideal, the teacher must encourage the students to commit themselves to understanding the subject matter at hand instead of simply endeavoring to become the first to find the correct answers to questions or problems.

### *Paradoxes*

Finally, we touch on some problematic issues that may emerge in dialogues in education. There are some paradoxes regarding the power that teachers use to influence young people to become independent and critical. Ellsworth (1989, p. 308) criticized strategies such as "student empowerment," "dialogue," and "student voice" for giving the illusion of equality while leaving the authoritarian nature of the student–teacher relationship intact. She asked, "How does a teacher "make" students autonomous without directing them?" In trying to meet some goals, such as "developing democratic citizens" or "encouraging participation in discourse and critical thinking," we may happen to develop monologizing practices (Linell, 2003), in which the direction and the goals for the teaching are set and where genuine dialogue may be impossible. Student voices that speak up against the majority or against the teachers may thereby be silenced and replaced by compliance and adjustment. It is important for teachers to be aware of these pitfalls and reflect on their own influence.

Bateson (1979, p. 8) claimed that teachers "are wisely unwilling to touch or teach anything of real-life importance" because, as he put it, they "carry the kiss of death" to what they teach. We are not as pessimistic as Bateson, even though we acknowledge the challenge he raised. In our cases, we claim to see elements of genuine participation and true dialogue. Nevertheless, we must ask ourselves: How can students be deeply moved and touched on a personal level by knowledge content? How can teachers bring this to pass without being "too ontological" (Matusov, 2009) by invading the students' private spaces as subjects? Can the ontological dimension of teaching tend to "standardize" *Bildung* processes and channel the students toward one specific direction, idealizing the students who are active, extroverted, and critical?

Bringing up new generations is a matter of influencing children in certain directions determined by the larger community (the United Nations or the state), such as promoting independence and critical thinking. We are obliged to pay attention to new approaches to learning to promote greater justice, social equity, and global solidarity (UNESCO, 2015, p. 3). Some understandings of individual and universal human rights are taken for granted in the Western world and are difficult to explore and discuss. In schools, this can lead to a wish to develop preferable emotional and social skills, as described in the Organisation for Economic Co-operation and Development's (2020) "Study on Social and Emotional Skills." This understanding of aspects of students' personal sides can be criticized for being too narrow and culturally biased concerning what emotional and social skills are preferred. Keeping the balance between organizing ontological dialogues that promote certain values while inviting inclusive talks with room for diversity in values, attitudes, and skills will continue to be a challenge for teachers.

Further, teachers cannot predict in detail the outcome of their teaching in developing certain values and attitudes among their students. This is also the case regarding whether dialogic teaching necessarily leads to the development of democratic capacities. The connections between attitudes and actions are complex and cannot be reduced to cause-and-effect relationships in education. The same applies to the connections between values and emotions.

## Conclusion

To summarize, we found that the theoretical concepts we chose to explicate dialogues in education were helpful in making sense of dialogic classroom practices. The concepts of *mathematizing*, *musicking*, and *Bildung*, as well as the different aspects of dialogue in education, contributed to a rich understanding of the empirical material of the study. The teachers in our narratives promoted student participation by facilitating both the ontological and epistemological dialogical aspects of the classroom talk. In our analysis and discussion, we have shown how these aspects interact in concrete educational settings. These issues

need to be explored in more depth so that teachers can be aware of how to carry out the important values of dialogic education.

## References

Alexander, R. (2008). *Towards dialogic teaching: Rethinking classroom talk.* Dialogos Cambridge.

Alexander, R. (2018). Developing dialogic teaching: Genesis, process, trial. *Research Papers in Education*, *33*(5), 561–598.

Alexander, R. (2020). *A dialogic teaching companion.* Routledge.

Åsvoll, H. (2006). Hvordan fortolke Bakhtins dialog? [How to interpret Bakhtin's dialogue?]. *Norsk pedagogisk tidsskrift* 06, *90*, s.445–455.

Åsvoll, H. (2006). Hvordan fortolke Bakhtins dialog? [How to interpret Bakhtin's dialogue?]. *Norsk pedagogisk tidsskrift*, *06*, 90, 445–455.

Bakhtin, M. M. (1981). *The dialogic imagination: Four essays by M. M. Bakhtin* (C. Emerson & M. Holquist, Trans.; M. Holquist, Ed.). University of Texas Press.

Bakhtin, M. M. (1984). *Problems of Dostoevsky's poetics.* (C. Emerson, Ed. & Trans.). University of Minnesota Press.

Barnes, D. (2008). Exploratory talk for learning. In N. Mercer & S. Hodgkinson (Eds.), *Exploring talk in school: Inspired by the work of Douglas Barnes* (pp. 1–16). Sage Publications.

Barnett, R. (2005). Recapturing the universal in the university. *Educational Philosophy and Theory*, *37*(6), 785–797.

Bateson, G. (1972). *Steps to an ecology of mind.* Ballantine Books.

Bateson, G. (1979). *Mind and nature: A necessary unity* (Vol. 255). Bantam Books.

Bergem, O. K., & Klette, K. (2012). Samtaler som læringsverktøy i matematikk: Hva lærer elevene? [Dialogues used as learning tools in mathematics: What do the pupils learn?]. In T. N. Hopfenbeck, M. Kjærnsli, & R. V. Olsen (red.), *Kvalitet i norsk skole*. [Quality in Norwegian schools]. Universitetsforlaget.

Biesta, G. (2014). *The beautiful risk of education*. Routledge.

Biesta, G. (2015). Hvad skal vi gøre med børnene? Om uddannelse, modstand og dialogen mellem barn og verden. [What are we going to do with the children? On education, resistance, and the dialogue between the children and the world]. In J. Klitmøller & D. Sommer (Eds.), *Læring, dannelse og udvikling* [Learning, education and development] (pp. 105–122). Hans Reitzels Forlag.

Boaler, J., & Brodie, K. (2004). The importance, nature and impact of teacher questions. In *Proceedings of the 26th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 774–782).

Bollnow, O. F. (1959). *Existenzphilosophie und Pädagogik. Versuch über unstetige Formen der Erziehung* [Existential Philosophy and Education. A study on discontinuous forms of education]. Kohlhammer.

Bollnow, O. F. (1972). Encounter and education. In D. Vandenberg (Trans.), *Educational forum* (Vol. 36, pp. 303–312, 465–472).

Brendefur, J., & Frykholm, J. (2000). Promoting mathematical communication in the classroom: Two preservice teachers' conceptions and practices. *Journal of Mathematics Teacher Education*, *3*(2), 125–153.

Brousseau, G. (1997). *Theory of didactical situations in mathematics 1970–1990*. Kluwer Academic Publishers.

Chase, S. E. (2005). Narrative inquiry: Multiple lenses, approaches, voices. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research.* Sage.

Christensen, H., & Ulleberg, I. (Eds.). (2013). *Klasseledelse, fag og danning.* [Classroom leadership, subject and Bildung]. Gyldendal Akademisk.

Core Curriculum (2020). *Core curriculum – Values and principles for primary and secondary education.* https://www.udir.no/lk20/overordnet-del/?lang=eng

Dall'Alba, G., & Barnacle, R. (2007). An ontological turn for higher education. *Studies in Higher Education*, *32*(6), 679–691.

Dewey, J. (1926). *Democracy and education.* MacMillan.

Dewey, J. (1938). *Experience and education.* MacMillan.

Dysthe, O. (1993). *Det flerstemmige klasserommet*. [The multi-voiced classroom]. Gyldendal Norsk Forlag.

Dysthe, O. (1999). Mikhail Bakhtin - en kort presentasjon [Mikhail Bakhtin – A short presentation]. In O. Dysthe (Ed.), *The dialogical perspective and Bakhtin: Conference report* (pp. 6–17). University of Bergen.

Dysthe, O. (2001). Sosiokulturelle teoriperspektiv på kunnskap og læring. [Socio-cultural theoretical perspectives on knowledge and learning]. In O. Dysthe (Ed.), *Dialog, samspel og læring* [Dialogue, interaction and learning] (pp. 33–72). Abstrakt Forlag.

Dysthe, O. (2006). Bakhtin og pedagogikken - Kva ein tidlegare ukjend artikkel fortel om Bakhtins pedagogiske praksis. [Bakhtin and education – what an hitherto unknown article can tell us about Bakhtin's pedagogical practice]. *Norsk pedagogisk tidsskrift*, *90*(6), 456–469.

Dysthe, O. (2012). Teoretiske perspektiver på dialog og dialogbasert undervisning [Theoretical perspectives on dialogue and dialogue-based teaching]. In O. Dysthe, N. Bernhardt, & L. Esbjørn (Eds.), *Dialogbasert undervisning* [Dialogue-based teaching] (pp. 45–80). Fagbokforlaget.

Dysthe, O. (2020). Lærerens betydning og rolle i dialogisk pædagogik: Casestudie fra en præstationsorienteret skolevirkelighed. [The teacher's prominence and role in dialogic pedagogy: A case study from a performance–oriented school reality]. In O. Dysthe, I. J. Ness, & P. O. Kirkegaard (Eds.), *Dialogisk pædagogik, kreativitet og læring* [Dialogic pedagogy, creativity, and learning] (pp. 143–175). Forlaget Klim.

Education Act (1998). *Act relating to primary and secondary education and training*. Lovdata. https://lovdata.no/dokument/NLE/lov/1998-07-17-61?q=education%20act

Ellsworth, E. (1989). Why Doesn't This Feel Empowering? Working Through the Repressive Myths of Critical Pedagogy. *Harvard Educational Review* 59 (3): 297–324.

Fossland, J. (2004). Wilhelm von Humboldt: Dannelse og frihet - det moderne universitetet [Wilhelm von Humboldt: Bildung and freedom - the modern university]. In *Pedagogikkens mange ansikter:*

*pedagogikkens idéhistorie fra antikken til det postmoderne* [The many faces of education: The educational history of ideas from antiquity to postmodernity] (pp. 199–2014). Universitetsforlaget.

Fossum, H. (2015a). Towards an ontological turn in music education with Heidegger's philosophy of being and his notion of releasement. F. Pio & Ø. Varkøy (Eds.), *Philosophy of music education challenged: Heideggerian inspirations*, (p. 75–97). Springer.

Fossum, H. (2015b). Flerstemmig og mangespektret musikkundervisning [Many-voiced and multi-spectered music education]. In H. Christensen & I. Ulleberg (Eds.), *Samtalens didaktiske muligheter* [The didactical possibilities of dialogue], (pp. 183–200). Gyldendal Akademisk.

Freire, P. (1972). *Pedagogy of the oppressed*. Penguin.

Freudenthal, H. (1991). *Revisiting mathematics education. China Lectures*. Kluwer Academic Publishers.

Gadamer, H.-G. (2004). *Truth and method* (2nd ed.). Continuum International Publishing Group.

Hägg, H. F., & Kristiansen, A. (Eds.) (2012). *Attending to silence.* Portal Academic.

Hansen, F. T. (2009). *At stå i det åbne. Dannelse gennem filosofisk undren og nærvær* [Staying in openness. Bildung through philosophical wondering and presence] (2nd ed.). Hans Reitzels Forlag.

Hansen, F. T. (2010). The phenomenology of wonder in higher education. In M. Brinckmann (Ed.), *Erziehung. Phänomenologische perspektiven*. Königshausen & Neumann.

Hansen, F. T. (2011). Nyttig som en rose [Useful as a rose]. In B. Hagtvedt & G. Ognjenovic (Eds.), *Dannelse. Tenkning, modning, refleksjon. Nordiske perspektiver på allmenndannelsens nødvendighet i høyere utdanning og forskning* [Bildung. Thinking, maturation, reflection. Nordic perspectives on the necessity of Bildung in higher education and research]. Dreyers Forlag.

Kant, I. (1784/1983). An answer to the question: What is enlightenment? In T. Humphrey (Trans.), *Immanuel Kant: Perpetual peace and other essays.* Hackett Publishing.

Kazemi, E., & Hintz, A. (2014). *Intentional talk. How to structure and lead productive mathematical discussions*. Stenhouse Publishers.

Keil, C. (2000). Musicking: The meanings of performing and listening by Christopher Small. Review. *Ethnomusicology, 44*(1), 161–163. University of Illinois Press on behalf of Society for Ethnomusicology.

Klafki, W. (2000). The significance of classical theories of Bildung for a contemporary concept of allgemeinbildung. In I. Westbury, K. Riquarts, & S. T. Hopmann (Eds.), *Teaching as a reflective practice: The German didaktik tradition* (pp. 85–107). L. Erlbaum Associates.

Klafki, W. (2001a). Grundtræk af et nyt almendannelseskoncept. I centrum: Tidstypiske nøgleproblemer [Basic characteristics of a new concept for general education. Basic problems typical of the period]. In *Dannelsesteori og didaktik – nyere studier*. [Theory of Bildung and didactics – Recent studies]. Forlaget Klim.

Klafki, W. (2001b). *Dannelsesteori og didaktik - nye studier* [Bildung – theory and didactics. New studies]. Forlaget Klim.

Klafki, W. (2001c). Kategorial dannelse. Bidrag til en dannelsesteoretisk fortolkning av moderne didaktikk. [Categorical Bildung. Contributions to a Bildung-theoretical interpretation of modern didactics]. In E. L. Dale (Ed.), *Om utdanning – klassiske tekster* [About education – Classical texts] (pp. 167–204). Gyldendal.

Knudsen, J. S., Skånland, M. S., & Trondalen, G. (2014). *Musikk etter 22. juli*. Norges musikkhøgskole.

Koller, H.-C. (2011). *Bildung anders denken. Einführung in die Theorie transformatorischer Bildungsprozesse* [Understanding Bildung differently: Introduction to a theory of transformative processes of Bildung]. Kohlhammer.

Koskela, J., & Siljander, P. (2014). What is existential educational encounter? *Paideusis, 21*(2), 71–80.

Lampert, M. (1990). When the problem is not the question and the solution is not the answer: Mathematical knowing and teaching. *American Educational Research Journal, 27*(1), 29–63.

Linell, P. (2003). Dialogical tensions: On Rommetveitian themes of minds, meanings, monologues, and languages. *Mind, Culture, and Activity*, *10*(3), 219–229. DOI: 10.1207/s15327884mca1003_4.

Linell, P. (2009). *Rethinking language, mind, and world dialogically*. Information Age Publishing.

Linell, P. (2017). Dialogue, dialogicality and interactivity: A conceptually bewildering field? *Language & Dialogue*, *7*(3), 301–336.

Mason, J. (2000). Asking mathematical questions mathematically. *International Journal of Mathematical Education in Science and Technology*, *31*(1), 97–111.

Matusov, E. (1996). Intersubjectivity without agreement. *Mind, Culture, and Activity*, *3*(1), 25–45.

Matusov, E. (2009). *Journey into dialogic pedagogy*. Nova Science Publishers.

Matusov. E. (2005). *Ontologically oriented teaching* [Conference presentation]. 1st International Congress of the ISCAR, Sevilla, Spain, 22–24 September 2005.

McEwan, H. (1995). Narrative understanding in the study of teaching. In H. McEwan & K. Egan (Eds.), *Narrative in teaching, learning, and research* (pp. 166–183). Teachers College Press.

Mercer, N., & Hodgkinson, S. (Eds.) (2008). *Exploring talk in school: Inspired by the work of Douglas Barnes*. Sage Publications.

Michelet, S. (2020). *Klassen som fellesskap. Elevkultur - faglig og sosial læring* (bind 1) [The school class as a community. Pupil culture - subject-specific and social learning]. Cappelen Damm Akademisk Forlag.

Nielsen, F. V. (1998). *Almen musikdidaktik [General music didactics]*. Akademisk Forlag.

Nielsen, F. V. (2006). On the relation between music and man: Is there a common basis, or is it altogether individually and socially constructed? In B. Stålhammar (Ed.), *Music and human beings: Music and identity* (pp. 163–182). Universitetsbiblioteket

Nordenbo, S. E., Søgaard Larsen, M., Tiftikiçi, N., Wendt, R. E., & Østergaard, S. (2008). Teacher competences and pupil learning in pre-school and school – A systematic review carried out for the Ministry of Education and Research, Oslo. In Evidence base. *Danish Clearinghouse for Educational Research, School of Education, University of Aarhus*.

Nystrand, M., & Gamoran, A. (1991). Instructional discourse, student engagement, and literature achievement. *Research in the Teaching of English*, 261–290.

Organisation for Economic Co-operation and Development. (2020). *Study on social and emotional skills*. https://www.oecd.org/education/ceri/social-emotional-skills-study/about/

Pio, F. (2007). *Om det uhørte* [On the unheard]. In F. V. Nielsen et al. (Eds.), *Nordic research in music education yearbook*, *9*(2007), 121–152.

Pio, F., & Varkøy, F. (2012). A reflection on musical experience as existential experience: An ontological turn. *Philosophy of Music Education Review, 20*(2), 99–116. Indiana University Press.

Polkinghorne, D. E. (1995). Narrative configuration in qualitative analysis. *International Journal of Qualitative Studies in Education*, 8(1), 5–23. doi: 10.1080/0951839950080103.

Rangnes, T. E., & Herheim, R. (2019). Lærers tilrettelegging for argument og agens. [The teacher's facilitating for arguing and agency]. In *Demokratisk danning i skolen* [Democratic education in school] (pp. 168–186). Universitetsforlaget.

Riesbeck, E. (2008). *På tal om matematik: matematiken, vardagen och den matematikdidaktiska diskursen* [Speaking about mathematics: Mathematics, everyday life, and the mathematic-didactical discourse] [Doctoral dissertation]. *Linköping Studies in Behavioural Science*, *129*. Linköping University, Department of Behavioural Sciences and Learning. Studentlitteratur.

Riessman, C. K. (2008). *Narrative methods for the human sciences.* Sage Publications.

Rinholm, H. (2020). Musikalsk-estetisk erfaring som tilsynekomsthendelse [Musical-aesthetic experience as event of appearing]. Ø. Varkøy & H. Holm (Eds.), *Musikkfilosofiske tekster. Tanker om musikk – og språk, tolkning, erfaring, tid, klang, stillhet m.m.* [Texts on Philosophy of Music. Thoughts on music–and language, interpretation, experience, time, sound, silence etc.], pp. 41–60. Cappelen Damm Akademisk. https://doi.org/10.23865/noasp.115.ch3

Rinholm, H., & Varkøy, Ø. (2020). Music education for the common good? Between hubris and resignation: A call for temperance. In I. M. Yob & E. R. Jorgensen (Eds.). *Humane music education for the common good* (pp. 40–53). Indiana University Press.

Rommetveit, R. (2008). *Språk, individuell psyke og kulturelt kollektiv.* Gyldendal Akademisk.

Roth, A. S. (2004). Shared agency and contralateral commitments. *The Philosophical Review*, *113*(3), 359–410.

Small, C. (1998). *Musicking: The meanings of performing and listening.* Wesleyan University Press.

Solem, I. H., & Reikerås, E. (2017). *Det matematiske barnet* (2nd ed). [The mathematical child (2nd ed.)]. Caspar Forlag.

Trevarthen, C. (1992). *An infant's motives for speaking and thinking in the culture.* In A. H. Wold (Ed.), *The dialogical alternative: Towards a theory of language and mind* (pp. 99–137). Scandinavian University Press.

Trevarthen, C. (2008). The musical art of infant conversation: Narrating in the time of sympathetic experience, without rational interpretation, before words. *Musicae Scientiae*, *12*(1suppl), 15–46.

Ulleberg, I., & Christensen, H. (2020). En triadisk modell for klasseledelse. [A triadic model of classroom management]. In H. Christensen & I. Ulleberg (Eds.), *Klasseledelse, fag og danning*, (2nd ed.). Gyldendal Akademisk.

Ulleberg, I., & Solem, I. H. (2015). Hvordan kan lærere bidra til deltakelse og matematisering i klassesamtalen i matematikk? [How can teachers contribute to participation and mathematising in the classroom talk in mathematics?]. In H. Christensen & R. S. Stokke (Eds.), *Samtalens didaktiske muligheter* [Didactic possibilities in conversations] (pp. 104–120). Gyldendal Akademisk.

Ulleberg, I., & Solem, I. H. (2018). Which questions should be asked in classroom talk in mathematics? Presentation and discussion of a questioning model. *Acta Didactica Norge*, 12(1), Art. 3, 21, sider. https://doi.org/10.5617/adno.5607

United Nations Educational, Social and Cultural Organization. (2015). *Rethinking education. Towards a global common good?* https://unesdoc.unesco.org/ark:/48223/pf0000232555

von Humboldt, W. (2000). Theory of Bildung. In I. Westbury, S. Hopmann, & K. Riquarts (Eds.), *Teaching as a reflective practice: The German Didaktik tradition* (G. Horton-Krüger, Trans.) (pp. 57–61). Lawrence Erlbaum Associates.

von Wright, M. (2007). Where am I when I am at ease? Relocating the notion of activity in education. *Nordisk pedagogik*, *27*(3), 222–235.

Wegerif, R., & Phillipson, N. (2016). *Dialogic education: Mastering core concepts through thinking together.* Routledge.

Wells, G. (1996). Using the tool-kit of discourse in the activity of learning and teaching. *Mind, Culture, and Activity*, *3*(2), 74–101.

---

New articles in this journal are licensed under a Creative Commons Attribution 4.0 United States License.

This journal is published by Pitt Open Library Publishing.
.