The teaching apparatus

Understanding the material entanglement of practices in the upper secondary classroom

Fride Haram Klykken

Thesis for the degree of Philosophiae Doctor (PhD)
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Scientific environment

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Abstract

Education is a living process that consists of everyday teaching situations and their spatial and bodily interrelationships. The materiality of educational practice is increasingly addressed in research. However, empirical accounts of how material practices emerge in actual classroom teaching situations are rare. Therefore, this PhD thesis aims to understand the material complexity of 'teaching' by investigating how it arises as a relationally and collectively negotiated phenomenon in a Norwegian upper secondary classroom. The thesis employs a sociomaterial framework and a video-based ethnographic research design to address this aim. In line with this framework, the analytical focus is on the discursive role played by material relations in educational encounters. The use of video recordings in combination with an ethnographic approach supported the empirical exploration of which material-discursive practices 'matter' in teaching situations.

The thesis consists of three articles and an extended abstract. While the articles provide close tracings of the bodily and spatial processes in the upper secondary classroom, each focuses on a distinct set of material relations and practices in the teaching situations.

The first article concerns the research practice and its ethical, in-field relationships. By drawing on relational ethics and previous conceptualisation of continuous consent practices, the article explores how we can approach informed consent as a situated and relationally constituted process. The article uses empirical examples from the ethnographic fieldwork to discuss the principle of informed consent as a reflexive and ethical tool that can be used throughout the inquiry, including its pre-fieldwork, fieldwork and post-fieldwork phases. The article argues that 'explicitly and implicitly (re)negotiated consent and dissent' is one way for researchers to align their ethical responsiveness with a relational and processual understanding of qualitative research.

The second article examines how spatial and bodily processes produce 'teaching' as a phenomenon. The article uses the concepts of *affect*, *orientation* and *alignment* to investigate how the class enacts the spatial politics of the upper secondary classroom.

The discussion illuminates how specific orientations came to ‘matter’ as legitimate ways of ‘doing school’ through the direction of attention and alignment of responses. A recurrent pattern of this classroom was the students’ practice of orientating towards each situation’s boundaries, rules and allowances. The article contends that the practice of ‘aligning with the local configuration of response-abilities’ was a bodily and spatial process that shaped the phenomenon of teaching.

The third article investigates which material-discursive practices ‘mattered’ in the upper secondary teaching situations and how participants’ bodies were shaping and being shaped by these practices. The article combines a posthuman sociomaterial concept of *practice* with the agential realist concepts of *material-discursivity* and *apparatus* to create a relational account of how multiple practices emerge and co-operate. The empirical examples show how two distinct practices emerged from the analytical work: ‘the practice of tasks’ and ‘the practice of friendship’. The article’s main argument is that these two practices’ mutual entanglement co-perform a larger sociomaterial arrangement, termed ‘the teaching apparatus’. The concept of a teaching apparatus offers a new perspective on teaching. By drawing attention to the classroom’s inter-connectedness and unpredictability, the conceptualisation of a teaching apparatus allows for a more fine-grained understanding of teaching and its relational qualities.

Overall, this study's findings show how multiple material-discursive practices are involved in producing the phenomenon of teaching, including the practices of tasks and friendship, as well as the practices of research. The thesis’ arguments strengthen existing research accounts of teaching as a complex relational and contextually embedded phenomenon. The thesis conceptualises a teaching apparatus that emphasise bodies, spaces and practices as active parts of its material-discursive production. In conclusion, it is argued that this articulation offers an alternative, affirmative and non-instrumental approach to considering the qualities of teaching.

Sammendrag

Utdanning er en levende prosess som består av hverdagslige undervisningssituasjoner og deres romlige og kroppslige sammenhenger. Materialiteten i pedagogisk praksis blir i økende grad adressert i forskning. Imidlertid er empiriske beretninger om hvordan materielle praksiser oppstår i faktiske klasseromsundervisningssituasjoner sjeldne. Derfor tar denne doktorgradsavhandlingen sikte på å forstå 'undervisningens' materielle kompleksiteten gjennom å undersøke hvordan den oppstår som et relasjonelt og kollektivt forhandlet fenomen i et norsk videregående klasserom. For å undersøke dette bruker avhandlingen et sosiomateriell rammeverk og et videobasert etnografisk forskningsdesign. I tråd med rammeverket plasseres det analytiske fokuset på den diskursive rollen som materielle relasjoner og prosesser spiller i pedagogiske møter. Bruken av videoopptak i kombinasjon med en etnografisk tilnærming støtter prosjektets empiriske utforskning av hvilke materiell-diskursive praksiser som har betydningsfulle konsekvenser i undervisning.

Oppgaven består av tre artikler og en kappe. Mens artiklene følger tett de kroppslige og romlige prosessene i videregående klasserom, fokuserer hver artikkel på et spesifikt sett av materielle relasjoner i undervisningssituasjonene.

Den første artikkelen handler om forskningspraksisen og de etiske relasjonene i feltet. Ved å trekke på relasjonell etikk og tidligere konseptualiseringer av kontinuerlig samtykkepraksis, utforsker artikkelen hvilke måter forskeren kan tilnærme seg informert samtykke som en situert og relasjonelt konstituert prosess. Artikkelen bruker empiriske eksempler fra feltarbeidet for å diskutere prinsippet om informert samtykke som et refleksivt og etisk verktøy som kan brukes gjennom hele forskningsprosessen, inkludert i fasene før, underveis, og etter feltarbeidet. Artikkelen argumenterer for at 'eksplisitt og implisitt (re)forhandlet samtykke og dissens' er en måte for forskere å kalibrere sin etiske respons med en relasjonell og prosessuell forståelse av kvalitativ forskning.

Den andre artikkelen undersøker hvordan romlige og kroppslige prosesser kan forståes som å produsere 'undervisning' som et fenomen. Artikkelen bruker

begrepene affekt, orientering og justeringer (‘alignment’) for å undersøke hvordan klassens handlinger etablerer klasserommets ‘romlige politikk’. Diskusjonen belyser hvordan spesifikke orienteringer fikk betydning (‘came to matter’), gjennom å gi retning til elevenes oppmerksomhet og responser, og ble etablert som legitime måter å ‘gjøre skole’ på. Et tilbakevendende mønster i dette klasserommet var elevenes praksis med å orientere seg mot hver situasjons regler, grenser og muligheter. Artikkelen hevder derfor at praksisen med å ‘tilpasse seg den lokale konfigurasjonen av response-ability’ var en kroppslig og romlig prosess som formet ‘undervisning’ som fenomen.

Den tredje artikkelen undersøker hvilke materiell-diskursive praksiser som har betydning (‘matter’) i videregående undervisningssituasjoner og hvordan deltakernes kropper ble formet og formet av disse praksisene. Artikkelen kombinerer et posthumant sosiomateriell praksisbegrep med de agentisk realistiske begrepene material-diskursivitet og apparatus for å skape en relasjonell redegjørelse for hvordan flere praksiser oppstår og samarbeider. De empiriske eksemplene viser hvordan to distinkte praksiser fremtrer fra det analytiske arbeidet: ‘Oppgavepraksisen’ og ‘vennskapspraksisen’. Artikkelens hovedargument er at disse to praksisenes gjensidige forviklinger fører til at de virker sammen som en større materielt og relasjonelt arrangement, kalt ‘undervisningsapparatusset’. Konseptet bidrar med et nytt perspektiv på undervisning. Ved å rette oppmerksomheten mot det sammenvevde og uforutsigbare prosessene i klasserommet, tillater dette konseptet en finmasket forståelse av undervisningen og dens relasjonelle kvaliteter.

Samlet sett viser denne studiens funn hvordan flere materiell-diskursive praksiser er involvert i å produsere fenomenet undervisning, inkludert oppgaver-, vennskap, og forskningspraksiser. Avhandlingens argumenter styrker eksisterende forskning på undervisning som komplekst relasjonelt og kontekstuelt fenomen. Avhandlingens konseptualisering av undervisning som et apparatus legger vekt på at kropper, rom og praksiser inngår som aktive deler i dens materiell-diskursive produksjon. Avslutningsvis hevdes det at denne artikulasjonen tillater en alternativ, ikke-instrumentell tilnærming til å vurdere undervisningens kvaliteter.

List of Publications

Article 1

Klykken, Fride Haram (2022): Implementing continuous consent in qualitative research, *Qualitative Research, 22*(5). https://doi.org/10.1177/14687941211014366

Article 2

Klykken, Fride Haram (2021): Are *We* Going to Do *That Now?* Orientations and Response-abilities in the Embodied Classroom, *Pedagogy, Culture & Society, 0*(0). https://doi.org/10.1080/14681366.2021.1998794

Article 3

Klykken, Fride Haram (Under Review): The teaching apparatus: A material-discursive entanglement of tasks and friendship in the upper secondary classroom, *Critical Studies in Education*.

Contents

Enclosed

Article 1: Implementing continuous consent in qualitative research.

Article 2: 'Are *We* Going to Do *That Now?'* Orientations and Response-abilities in the Embodied Classroom.

Article 3: The teaching apparatus: A material-discursive entanglement of tasks and friendship in the upper secondary classroom.

Appendices (In Norwegian and English)

Appendix 1 – Formal approval from the Norwegian Social Science Data Service (NSD)

Appendix 2 – Information letter and consent sheet for students

Appendix 3 – Information letter and consent sheet for teachers

1. Introduction

The topic of this doctoral thesis is the materiality of teaching in upper secondary education. By employing an ethnographic research design and drawing on a sociomaterial theoretical framework, I study teaching as a relationally and materially constituted phenomenon (Fenwick et al., 2011). My interest in this field arose from an experience I had as a master's student. I did a series of focus group interviews with upper secondary art and design students[1], and one question I asked during these interviews was for the students to describe their experience of lessons in visual arts by comparing them to lessons they had in other school subjects. One recurring reply was that they walked or moved more during the art lessons. The students explained, for instance, that while drawing a still life, they were often free to walk over to other students, to look at their drawing, provide support or ask for advice. During these interviews, the students kept returning to such embodied and spatial references to characterise how different teaching situations provided them with different opportunities to move.

This response puzzled me, which, in turn, caused me to reflect on why I was so perplexed by these descriptions. It should not have been a surprise to me that students describe teaching situations as embodied and spatial experiences. After all, all students *are* bodies, and everyday teaching encounters always *take place* somewhere. I realised then that I lacked a language to talk about the materiality of everyday educational practices in a way that accounts for classroom activities' spatial and embodied aspects. In this sense, it was these students' conversations that sparked my interest in approaching 'teaching' as a material phenomenon.

In this introduction, I will first briefly expand on the motivation behind the project. Second, I will present the aim, research question and research design. Third, I provide the backdrop for this present inquiry. Fourth, I will outline the structure of the thesis.

[1] The master thesis was completed in 2015 and its topic was different to this PhD thesis: https://hdl.handle.net/1956/9974

In recent years, there has been an increased focus on the complex knowledge required of teachers in their professional work (Jensen et al., 2022; Nerland, 2022). In Norway, schools make local decisions on which teaching methods and materials to use. This decentralised professional freedom is tied to the responsibility that professional decisions need to be informed by central frameworks and national strategies, as well as research-based knowledge (Mausethagen & Mølstad, 2015). The latest policy reforms in Norway state the need for differentiated instruction as part of ordinary teaching (Kunnskapsdepartementet, 2017; NOU 2019: 25), which, in turn, requires teachers to be responsive to all of the students' needs through adaptation and variation of teaching methods and strategies (Jenssen & Lillejord, 2009). Additionally, the latest national curriculum documents state that students should develop flexible understandings through 'in-depth learning' (Kunnskapsdepartementet, 2017). Students' in-depth understandings also rely on teachers' ability to differentiate their practices, for instance, by using varied methods and work forms, and to facilitate students' experimentation with the subject content (NOU 2015: 8). This, in turn, requires teachers' understanding of responsive ways of organising their teaching (Østern et al., 2019). Additionally, a recent white paper states that upper secondary education is a relatively under-researched area and calls for more research on the practices of upper secondary education (NOU 2019: 25). In summary, based on recent policy-level literature and research on professional teacher development, there is a need for understanding teaching practices in upper secondary education.

Most teaching situations are filled to the brim with explicit and implicit rules and routines that appear fixed and stable. Following a sociomaterial perspective, however, everyday practices and habits are continuously in the making. The notion of *material-discursivity* is key in this project and underlines that materiality plays an agential role in how social practices emerge (Barad, 2003). Moreover, material relations create boundaries for what we are able to know and do (Orlikowski & Scott, 2014). The national curriculum, school buildings, spaces, technologies, cultures, and the ways teachers and students interact, are all examples of members that co-constitute the

material relations of living practices, and their configuration is always in flux (Fenwick et al., 2011; Sørensen, 2009).

One example of this occurred during the fieldwork for this project. One upper secondary student displayed his phone screen to the teacher and two co-students and declared enthusiastically: 'I just want to say that I'm *doing school!'* During this 'Media and Communications' lesson, the students' assignment was to interview other young adults about their media usage habits. The teacher collaborated with the students to individually tailor this assignment, and this student was allowed to use a dating app on his mobile phone to solve the task. I find that the situation captures the regulatory and fluid nature of teaching. A dating app would not normally be a legitimate way of 'doing school', but in this specific situation, it was. The situation thus highlights that understanding what constitutes the legitimate way of 'doing teaching' is an ongoing and deeply situated endeavour.

1.1 Aims and research design

This PhD project aims to understand the material complexity of teaching by exploring how 'teaching' emerges as a relationally and collectively negotiated phenomenon. I approach education and its purpose as complex, meaning it is an emergent and open-ended phenomenon (Osberg & Biesta, 2021). The project engages educational ethnography with a sociomaterial theoretical framework to contribute to the field of knowledge on the roles of the body and the wider physical environment in teaching situations. The sociomaterial approach entails focusing on the productive capacities of material practices (Gherardi, 2017), meaning how they are (re)productive of social order and contribute to issues of (in) equality in society (Landri, 2012).

The phenomenon of this study is the processes and practices that constitute teaching (Savin-Baden & Major, 2013). The main research question guiding the project is:

> *Which material-discursive practices 'matter' in the teaching situations of a Norwegian upper secondary classroom?*

Informed by this question, the analytical focus of the study is on *which* practices emerge as doing *performative* work within the teaching situations. By employing the concept of *material-discursivity* (Barad, 2007), the research question addresses the generative and regulatory role played by material practices in teaching events[2]. As the term suggests, the boundaries for what 'matters' as knowledge emerges in an integral co-emerging of discourse and materiality (Barad, 2007). The practices 'matter' in two ways; they are both something that is of significance and something that materialise, as in 'taking shape' (Thiel, 2020, p. 181). Consequently, asking *which* material-discursive practices 'matter' also entails exploring *how* these practices come to matter.

To research and understand the practices and their formation in teaching situations, I conducted an ethnography of the day-to-day material organisation of teaching situations in a Norwegian upper secondary classroom (Coffey, 2018). The project's empirical material has been produced through a video ethnography of everyday activities and includes audiovisual recordings and field notes. The research participants were a Norwegian upper secondary class with 23 students (age 17-18) and their teacher within the study programme of 'Media and Communication'. I observed and recorded a series of 40 lessons over three months in 2018. The Norwegian educational system and the broader context for the fieldwork will be further elaborated on in Section 1.2.

The thesis consists of three articles and an extended abstract. The three articles investigate three distinct research questions related to the materiality of education and its material-discursive production. Taken together, the answers to each of the sub-questions answers the main research question.

The first article approaches the ethical work of informed consent and investigates *how we can approach informed consent from a relational and processual understanding of social research.* The article questions the taken-for-granted

[2] There are some challenges in combining the concepts of sociomateriality and material-discursivity within one framework and this relationship is addressed in Section 3.3.

relational processes involved when enacting the ethical principle of informed consent and is based on in-field interactions and reflections on the relational process of conducting ethnographic research within the upper secondary classroom. The article suggests ways to conduct ethical research in a way that aligns with a perspective of research as taking place as a continuous co-production. This article contributes to the main research question since the enactment of informed consent is also a practice that 'matters' for how we understand the phenomenon of teaching.

The second article concerns the bodily and spatial aspects involved in teaching situations. The research question for this article is: *How do spatial and bodily processes produce teaching as a phenomenon?* The paper investigates the performative work of spatial and bodily relations in the upper secondary classroom. The article discusses how the material enactments of affect, orientation and alignment establish a situated spatial politics of the classroom. I propose the local *configuration of response-abilities* as a material relationship that actively connects and directs bodies in the classroom and produces what we understand as the phenomenon of teaching.

The third article is concerned with the performative work of multiple material practices. The research question is: *Which material-discursive practices 'matter' in the upper secondary teaching situations, and how are participants' bodies shaping and being shaped by these practices?* The article examines how spatial and bodily processes form two intertwining practices, *the practice of tasks* and *the practice of friendship*. The paper conceptualises how the combination of multiple material practices co-performs a larger arrangement, termed *the teaching apparatus*.

The research aim: To understand the material complexity of teaching by exploring how 'teaching' emerges as a relationally negotiated phenomenon.				
	Research question	**The phenomenon of the study**	**Key concepts**	**Findings**
Article 1 *Implementing continuous consent in qualitative research*	How can we approach informed consent from a relational and processual understanding of social research?	The researched-(teaching) practice. The researcher and participants' collective practice.	Relational ethics Response-ability (of researcher-participants)	*Explicitly and implicitly (re)negotiated consent and dissent* is one way for researchers to align their ethical responsiveness with their relational and processual understanding of qualitative research.
Article 2 *'Are we going to do that now?' Orientations and response-abilities in the embodied classroom*	How do spatial and bodily processes produce teaching as a phenomenon?	The (researched) teaching practice. The teacher's and students' bodily and spatial interactions (in one practice)	Affect Orientation Alignment Spatial politics Response-ability	The practice of aligning with *the local configuration of response-abilities* is a bodily and spatial process that produces the phenomenon of teaching.
Article 3 *The teaching apparatus: A material-discursive entanglement of tasks and friendship in the upper secondary classroom.*	Which material-discursive practices 'matter' in the upper secondary teaching situations? How are participants' bodies shaping and being shaped by these practices?	The (researched) teaching practice. The relations and interactions within and between practices.	Practices Material-discursivity Apparatus	*The practice of tasks* and *the practice of friendship* 'mattered' in the upper secondary teaching situations. The two practices co-enact a *teaching apparatus* that was shaping and being shaped by participants' bodily and spatial relations.

Table 1: Overview of the articles

1.2 Background: 'Doing school' in Norway

In Norway, primary and lower secondary education lasts for ten years, and upper secondary education for three years (Utdanningsdirektoratet, 2020). Pupils typically finish lower secondary education in the year they turn 16. Upon completion of compulsory lower secondary education, the pupils are entitled to continue to upper secondary school, which qualifies them for higher education or a vocation. In 2019, 98% of all pupils completing lower secondary school enrolled in upper secondary education in the following year (Utdanningsdirektoratet, 2020). Upper secondary students are usually between 16 and 19, although they can be older.

Most upper secondary education programmes run over three years, and most schools provide a combination of vocational and general education programmes. The general study programmes contain more than half of the upper secondary students. The largest of the general study programmes is 'Specialisation in General Studies', which has 38% of the students (Utdanningsdirektoratet, 2020). This research project follows a class of students enrolled in a programme called 'Media and Communication', which is also a general study programme. Approximately 10% of all the 'general study' students choose the 'Media and Communication' programme (Utdanningsdirektoratet, 2020).

Completing the general education programme qualifies the students for higher education. There is an increased emphasis on academic content in this student group, often related to grades and competition to enter higher education (Lillejord et al., 2017). According to Eriksen et al. (2017), students in this age group state that pressures related to school work are their primary source of stress. The report also indicates that students' experiences of school stress increase between the first and third year of upper secondary school (Eriksen et al., 2017).

Teachers in Norwegian upper secondary schools are usually required to have a master's degree in the main subject they teach (OECD, 2019). The classes taught depend on the teacher's specialisation. In upper secondary schools, different school subjects are often taught by different teachers. If the students continue in the same

school and have the same subject again, they can often continue with the same teacher over several years (Eurydice, 2021).

The Norwegian national curriculum is competence-based (Meld. St. 21 (2016–2017)). A fundamental principle in the curriculum is that the schools have the freedom to choose teaching methods, such as the organisation of classroom instruction and the learning materials, locally (Mausethagen & Mølstad, 2015). An outcome-oriented curriculum builds on teacher accountability and requires teachers to have a comprehensive understanding of teaching and learning processes. The emphasis on local autonomy comes with both an individual and a collective responsibility for teachers and schools to develop and maintain this knowledge (Nerland, 2022). A critical discussion within the occupational group is how teachers and schools should balance autonomy with responsibility in their work to maintain the profession's credibility and legitimacy (Mausethagen & Mølstad, 2015). The tensions between local, professional autonomy and processes of national control can be connected to the topic of standardisation and the larger societal 'normative specifications' of the national educational system's objectives, means and practice (Landri, 2022).

Research has shown that, during the last decades, teachers have experienced changes in their responsibility for professional development and knowledge work (Nerland, 2022). For instance, all teacher education programmes in Norway were recently upgraded to master's level, and it is a requirement that teacher education should incorporate scientific knowledge into its practices. Additionally, the rapid development of new digital tools and infrastructures influences teacher practices through new types of tasks, skills and working and learning environments (Nerland, 2022). With these new actor constellations, increasing responsibility, digitisation and dataification, the complexity of teachers' work is increasing (Landri, 2022; Tronsmo, 2020). Following this, many internal and external forces are 'at work' in the everyday enactments of teaching. Research has described teachers' negotiation of multiple competing demands as complex and sometimes contradictory work (Larsen, 2010; Strom & Martin, 2022; Tronsmo, 2019). Thus, for teachers, the 'in-situ' teaching practices are embedded in an increasingly complex network of practices.

1.3 Outline of the extended abstract

I have organised the extended abstract of this PhD thesis as follows. The first chapter is the introduction. In the second chapter, I present an overview of existing empirical research on the materiality of education. In chapter three, I explain the theoretical orientation of the thesis. The fourth chapter presents the ethnographic research design, the fieldwork processes, and ethical reflections. I summarise the findings in the fifth chapter. In the sixth chapter, I discuss methodological challenges and the results of this thesis. Finally, in the seventh chapter, I discuss some implications of the findings for our understanding of teaching.

2. Previous research

In this chapter, I present an overview of empirical research on the materiality of education. The function of a literature review is commonly described using the metaphor of creating a solid 'base' or 'foundation' for the inquiry. However, I find that the metaphor of an 'anchor' that provides a temporary grounding for the research project is better aligned with the relational and processual stance of this project (Maxwell, 2006, p. 30). Following this understanding, this chapter maps relevant research with the aim to 'connect and steady' the current research project within a larger field of research on the materiality of everyday teaching practices. As an overview of the field, it is tailored to support and provide a wider context for the present study (Maxwell, 2006).

My interaction with the research of others has been a continuous and relational engagement throughout the research process. The following sections present an overview of empirical research published in peer-reviewed journals within the last two decades. This account is not exhaustive, but rather it explains the main research fields and trajectories that I have interacted with as part of developing this study. In the final section of this chapter, I position the research study within the larger field (Hart, 2018).

The articles presented in this overview of research were included due to their relevance to this project's methodical and theoretical approaches and findings (Maxwell, 2006). They are relevant through sharing the present project's focus of inquiring into the material aspects of everyday school practices. The collection of research approaches the materiality of day-to-day teaching practices through what I construct as three main themes, namely *(1) embodiment*, *(2) spatiality*, and (3) *heterogeneous arrangements*. Each of these themes presents a selection of subcategories, which demonstrate different streams of research within each theme.

2.1 Materiality as embodiment

The first theme to consider within the materiality of education is embodiment. The embodiment of education is a field in fast expansion, as shown by recent reviews of research on embodied teaching and learning in, for instance, physical education (Aartun et al., 2022), science education research (Kersting et al., 2021), and higher education (Hegna & Ørbæk, 2021). This section will present a selection of studies that approach the embodiment of everyday teaching practices as relational and performative. These scholars draw on a variety of theories, including phenomenology, pragmatism, sociology, affect theory and new materialism(Page & Sidebottom, 2022). I have organised the presentation by constructing three main categories: (1) *embodied pedagogies,* (2) (*non)normative bodily orientations,* and (3) *teaching as embodied practice.*

2.1.1 Embodied pedagogies

The first category within this theme is *embodied pedagogies.* This stream of research explores the pedagogical potential of embodied engagement (Sund et al., 2019). These scholars draw attention to how the body factors in day-to-day teaching and learning practices of different school subjects (Nguyen & Larson, 2015). Specific educational settings carry different curricular opportunities in teaching and learning as they differ in the way that they engage students' bodies. Consequently, some school subjects have received more attention due to their inherent physicality (Bresler, 2004). One particularly rich research field is the research on performing arts-, music- and dance education (Ivinson, 2012; Wilcox, 2009; Østern et al., 2021). Another rich research field is research on physical education, health and sport*,* where the curricular content also explicitly requires learning through the body (Evans et al., 2009; Quennerstedt et al., 2011; Thorburn & Stolz, 2017; Aartun et al., 2022).

One recurrent emphasis within these studies is that the materiality of the school subject itself has a transformative potential related to gender, body ideals, health and able-bodism (Cameron & Humbert, 2020; Oliver & Kirk, 2016; Sparkes et al., 2019). For instance, a study by Ivinson and Renold (2021) employs concepts of

performativity and affect and describes how traces of gendered movement patterns emerged in a dance and movement workshop for girls in a rural Welsh secondary school. Specific movement repertoires, such as a 'protective body holding' (placing arms across stomachs), occurred as a 'refrain' amongst the girls during the breaks. The study describes how the movement and dance workshop facilitated new embodied experiences for the girls, how they gradually 'inhabited' their bodies differently, engaged in critical reflections and expressed increased bodily awareness (Ivinson & Renold, 2021). The study thus highlights how embodied pedagogies can challenge the hidden curriculum articulated by broader societal forces.

Another recurrent emphasis of studies of embodied pedagogies is that the body is always actively involved in the classroom meaning-making processes (Shilling, 2017), even in school subjects in which learning through the body is less prominent such as social studies and mathematics (Rankin et al., 2021; Sund et al., 2019). In a comparative study, Almqvist and Quennerstedt (2015) inquired into the role of the body in meaning-making processes in the two different school subjects of physical education (PE) and science education (SE). The study analyses two video recordings and uses a pragmatic approach inspired by Dewey. After comparing the activities in one PE-lesson and one SE-lesson, the authors argue that meaning-making processes through the body are contingent on social context, and the students' bodies were equally 'schooled' in both subjects (Almqvist & Quennerstedt, 2015).

2.1.2 The production and performances of (non)normative bodily orientations

The second category of research is *the production and performances of (non)normative bodily orientations* in education. Scholars within this field draw on critical or feminist materialist perspectives and highlight how day-to-day teaching and learning practices have micropolitical effects on students' bodies. One recurrent topic is how educational practices (re)produce and sustain body norms (Hickey-Moody et al., 2016; Mulcahy & Healy, 2021; Taylor, 2018). The school is highlighted as a key site for producing and regulating gendered body identities. For instance, Wolfe and Rasmussen (2020) studied girls' experiences of gendered

uniform policies in Australian schools and found that dress-wearing 'dis/enabled' some bodies' capacities.

Åberg and Hedlin (2015) conducted an ethnography in a male-dominated upper secondary vocational building and construction training programme. The authors describe how material processes influence gender norms. They draw on Ahmed's conceptualisation of 'happy objects' (Ahmed, 2010a) to articulate how the shared, joyful orientation toward a specific mental and physical object can be understood as a way to regulate and align with mainstream norms. The authors found that one particular pattern of masculinity norm was embraced amongst students in the classroom, namely 'practical work'. The students recurrently expressed positive feelings towards 'practical work' and certain activities; for instance, hammering and 'physical strength' emerged as 'happy objects'. This shared orientation was an embodied investment that produced some students' bodies as 'proper' or 'comfortable', whilst others struggled with inhabiting that 'bodily schema' and were at risk of exclusion (Åberg & Hedlin, 2015).

2.1.3 The embodied practice of teaching

The third category of research concerns *the embodied practice of teaching.* This scholarship draws attention to teaching practices while considering them as a bodily enactment (Todd, 2022) and highlights the teacher/student pedagogical relationship as an inherently embodied modality (Dixon & Senior, 2011; Ellsworth, 1997; Hickey & Riddle, 2022; Sidorkin, 2000).

A study by Sato et al. (2020) combines practice theories with the concepts of tacit knowledge, body habitus and embodied dispositions to discuss students' and teachers' relational endeavours in three classroom episodes in a reflective, cross-cultural discussion (across Asian and Western educational contexts) of the first author's observations from teaching situations in Japanese primary and high schools. Past interactions, including experiences in classroom practices over time, can be understood as present in the students' embodied dispositions, expressed through kinaesthetic responses. The authors emphasize the importance of teachers' embodied

dispositions of openness and receptiveness in the relational work of noticing and attuning to the students' embodied dispositions (Sato et al., 2020). This stream of research also aligns with a corporal or somatic turn in the broader field of professional practices and investigates the work of teachers as 'embodied practitioners' (Green & Hopwood, 2015; Hopwood, 2016; Kinsella, 2015; Reid & Mitchell, 2015).

Another recurrent topic within this category is teacher education and how newcomers can best be prepared for the challenges involved in everyday teaching practices (Reid, 2011). For instance, a study by Mitchell and Reid (2017) discusses 'knowledge in the body' and its role in student teachers' experiences of preparedness for practice. Inspired by Bourdieu, the authors explain how teacher students can develop professional 'body habitus' (Mitchell & Reid, 2017). Researchers have also used the concept of embodied knowledge to reverse or tackle the much debated 'two grooves' of the 'theory/practice' divide (Forgasz & McDonough, 2017; Ord & Nuttall, 2016) in teacher education.

2.2 Materiality as spatiality

The second theme to consider within the materiality of education is spatiality. The spatial turn in education (Gulson & Symes, 2007) is inspired by Marxists, feminist and cultural geographers' definition of space as materially produced and productive (Harvey, 1996; Lefebvre, 1991; Löw, 2016; Massey, 2005; Soja, 1989). I have constructed three main categories (1) *spatiotemporal aspects of education,* (2) *spatial productions of inequality and exclusion,* and (3) *the material agency of school architecture and learning environments* to organise the presentation.

2.2.1 Spatiotemporal aspects of education

The first category of research within this theme is the *spatiotemporal aspects of education.* Scholars within this field consider spatiality to be constituted by temporality and visa-versa, hence the term 'spatiotemporality' (Lingard, 2022). This area of research argues that the organisation of time and the temporal are neglected

aspects of educational space (Lingard & Thompson, 2017). Researchers have addressed the spatial dynamics of education by considering the processual, 'concrete', material and collective reality of school spaces and the 'physical force' of time and spatial relations on teaching as a social practice (McGregor, 2003, 2004).

Jan Nespor is a scholar who has contributed heavily to the topic of spatiality and time within educational practices (Nespor, 1995, 2019; Nespor et al., 2009). In a seminal ethnographic study comprising two-years of fieldwork, Nespor (1997) studied webs of relations that surround the living spaces of a US elementary school. The study moved between micro and macro analysis of relations, comprising interviews and observations of teachers, pupils, parents, and administrators, and also looked at local school archives and media accounts. Nespor (1997) draws on a relational understanding of structures and agency based on theories from many fields, including actor-network theory and concepts by Law, Foucault, and Massey. In this seminal study, Nespor (1997) explained the school as an interconnected space, co-constituted by multiple spatio-temporal structures, as part of a school-society network of relations.

In an ethnographic study of school field trips, Nespor (2000b) continued to study the spatial boundaries of schooling, asking important questions about what it means to attend school, following that space is a product of social practice. The study shows how field trips can replicate the classroom modes of doing. However, field trips can also extend school space and thus extend the children's lives and connect them to public spaces.

Another study by Nespor (2004) shows how schools create dominant *scales* (e.g., standards and tests) that erase alternative *temporal-geographic* scales (e.g., family relationships and 'school-home-city relations'). For instance, 'school-launched trajectories' collapse pupil identities and examination marks into reductive labels: 'instead of a son or daughter, boyfriend or girlfriend, one becomes college material, unemployable, at-risk, or gifted' (Nespor, 2004, p. 322). Nespor's early studies on spatiality are seminal because they problematise what we understand as the

inside/outside of schools, including the boundaries and the materiality of everyday school relations and practices (Fenwick et al., 2011).

2.2.2 Spatial productions of inequality and exclusion

The second category of research is the *spatial production of inequality and exclusion*. Scholars within this field have highlighted how the physical and temporal infrastructures of schools are involved in reifying existing power structures (Gordon, 1996; Lahelma, 2002; McBride, 2021; Neely & Samura, 2011; Nespor et al., 2009; Paechter, 2004; Þrastardóttir et al., 2021).

Rodriguez (2020) conducted a critical ethnography of Latinx youth in a well-resourced, suburban and predominantly white US high school. The author describes how Latinx students navigated social and academic borders in the school's structured (academic and extracurricular) and unstructured spaces (common area, hallways, cafeteria). By drawing on spatial and borderland theories, the study highlights the different ways different bodies take up space and construct communities. While the white and Latinx students shared spaces, it was evident that white youth created and shaped 'borders of belonging' in a majority of the physical school spaces. For instance, teachers would ask Latinx youth why they sat together and did not integrate more, whereas teachers never asked white students about their reasons for maintaining 'white-centred spaces' (Rodriguez, 2020).

An ethnography carried out in two Islandic upper secondary schools uses cultural geographical notions of the social production of space (Massey, 1994) and connects spatial practices of school to normative discourses regarding gender and sexuality (Kjaran & Jóhannesson, 2015). The study explores how spatiality plays an active role in the processes of inclusion, exclusion and queering of classrooms and communal school spaces through gendered enactments of space (Kjaran, 2019). The author describes how a heteronormative culture of masculinity was thriving in the school, and the spatial production of a masculine 'dude culture' was, for instance, seen in how these bodies physically (and discursively) took up large amounts of space during lessons and in other areas of the school, for instance, through a prominent cupboard

of trophies representing a culture of victory and competitiveness (Kjaran & Jóhannesson, 2015).

2.2.3 The material agency of school architecture and learning environments

The third category of research is *the material agency of school architecture and learning environments*. This scholarship considers built spaces as processual and socially constituted and asks how these buildings influence the practices of teachers and students (Biesta, 2022; R. A. Ellis et al., 2018). The field has attended to the growing variety of contemporary school environments as well as the role of the designed environment in learning (Frelin et al., 2021; Yeoman, 2018). Researchers also look at the micropolitical dimensions of school design, including open-plan, innovative and flexible learning spaces (Benade, 2017; Juelskjær, 2014; Løkken & Moser, 2012; Mulcahy, 2015; Mulcahy et al., 2015; Reh et al., 2011).

A study by Herman and Tondeur (2021) explored the sociomaterial production of school spaces by undertaking stimulated recall interviews with nine experienced primary school teachers in Belgium. The authors asked teachers how school interiors and objects have changed through their careers and created so-called 'biographies' of classrooms. These accounts underscore the processual and developing aspects of classrooms and how spaces are an ongoing entanglement of human and non-human actors. The authors argue that classrooms are potential spaces that invite 'teachers to become an active part in its spatial constitution and thus allowing classroom ownership' (Herman & Tondeur, 2021).

The material agency of school architecture has also been studied through the educational history of materials, technologies and sites of schooling (Burke & Whyte, 2021; Darian-Smith & Willis, 2017; Lawn & Grosvenor, 2005; Seddon et al., 2017). For instance, Rosén Rasmussen (2021) analyses a historical case of a new, open-plan school built in the early 1970s in Denmark. She reviewed files from the school archive, including minutes from staff meetings and detailed teacher-produced reports published in the 80s. Using new materialist theories, the author draws attention to the 'teachers spatial endeavours' as the new school building produced unexpected

challenges for the teachers to navigate in their pedagogical work. One example was how the school's no-door-classrooms challenged the school's aim to create a 'pleasant soundscape'. This required the teachers to formalise stricter rules for the collective routines and rhythm of the school. Another example is the school's lack of staffroom, and thus the absence of an arena for internal communication. Again, the physical architecture required the teachers to find new ways of communicating, for example, through a weekly newspaper and classroom loudspeakers. The article shows how the teachers' spatial work entangled with local, national and transnational strategies and developments and entailed a continuous process of exploration and adjustment of practices (Rosén Rasmussen, 2021).

2.3 Materiality as heterogeneous arrangements

A third central theme considered in research concerned with the materiality of education is the *heterogeneous arrangement* of everyday teaching situations. This body of research emphasises relationality and sees a multitude of material objects and technologies as contributors to educational practice. Scholars in this field draw on STS, practice and complexity theories to consider educational practices in terms of arrangments and use related concepts such as sociomaterial assemblages, networks, ecologies and apparatuses (Damsa & Jornet, 2017; Fenwick et al., 2011; Müller, 2015). I have organised the research into three main categories: (1) *The performative effects of things and technologies*, (2) *the material relationality of learning* and (3) *the complexity of teachers' and teaching practices.*

2.3.1 The performative effects of things and technologies

The first category of research considers heterogeneous arrangements in schools as *the performative effects of things and technologies.* This field of sociomaterial educational research has drawn on science and technology studies (STS) (Landri, 2017) to highlight how technologies, in a broad sense, co-enact educational practices with numerous other elements (bodies, concepts, space). STS-theories are sometimes called 'posthuman' perspectives due to the emphasis on the 'co-implication of humans and non-humans' (Landri, 2017). STS studies in education are a growing

field of research, particularly in science, technology, engineering, and mathematics (STEM) education (de Freitas et al., 2017; Decuypere, 2019; Gorur et al., 2019).

An influential scholar in this field, Estrid Sørensen, investigated the materiality of learning in an ethnographic study in Danish 4th-grade classrooms (Sørensen, 2007, 2009, 2012). This practice-oriented study draws on concepts from ANT (Law and Mol) and spatial theories to create a sociomaterial account of the performative effects of things and technologies in teaching situations. Sørensen (2009) observed ordinary classroom situations involving 'traditional' technologies such as blackboards, rulers and chalk and a teaching project involving an online 3D virtual environment in a computer lab. In both of these classroom configurations, the technology is described as actively participating in a multiplicity of human and non-human sociomaterial components. The technologies actively performed what Sørensen (2009) calls 'spatial imaginaries'. The term signifies the enactment of spatial formations through different arrangements of relations and the parts they connect. The study discusses how the technology actively configures a multitude of 'spatial patterns of relations' in the classroom in terms of connectedness, fluidity and regionality (Sørensen, 2007). For instance, classroom technology simultaneously participates in a multiplicity of relational arrangements. One significant contribution of Sørensen's study is how it draws attention to the performative effects of the fluid and flexible aspects of technologies (rather than only being rigid, stable networks). This was particularly evident in the digital teaching spaces' uncertain, non-linear, and processual character. The technology gradually altered; it underwent ongoing mutation and 'absorbed' elements from the outside. For example, the limited infrastructure, such as the poor bandwidth of the internet, meant that its relations and 'connectivity' often were interrupted and needed 'repair work' (Sørensen, 2007).

Several studies have taken up Sørensen's sociomaterial, performative approach to things and technologies. For instance, Aagaard's article (2017) examines the ambivalent nature of technologies in an upper secondary classroom through ethnographic participant observation, including interviews with students and teachers. The article shows how educationally relevant use of technology brings the 'outside'

world ‘in’, and the irrelevant, off-task use of technology, which is used to ‘escape’ the classroom and thus move the (students’ attention) ‘inside-out’(Aagaard, 2017). Similarly, a study by Alirezabeigi et al. (2022) shows the performative effect of screen-mediated tasks.

In an ethnographic study on the sociomaterial enactment of a science classroom, (Roehl, 2012b) draws on actor-network theory and postphenomenology to discuss how bodies, more ‘traditional’ classroom technologies and the world together co-enact educational assemblages. The article shows how the situated arrangement and practices of a physics demonstration experiment transform an ordinary material object (e.g., pencil case and rubber band) into an epistemic object. As the objects are transformed, so is the students’ view of the world. The ‘epistemic configuration’ of the science classroom was, in this sense, an effect of the situated, sociomaterial arrangement, which aligns the relations between epistemic objects, symbolic order, disciplinary vision, pointing gestures, and educational discourse (Roehl, 2012b).

Another example of research demonstrating how sociomaterial gatherings co-enact what emerges as pedagogical configurations is an ethnographic study of six Flemish secondary schools by Vanden Buverie and Simons (2017). The article examines how human and non-human elements (dis)connect and shows, for instance, how things (e.g., music scores), time and place are fabricated as specific school things, time and place through the heterogeneous, material relations, and temporal and regional orders of the school (Vanden Buverie & Simons, 2017).

2.3.2 The material relationality of learning

The second category of research considers *the material relationality of learning.* This scholarship rethinks pedagogy by examining the complex materiality of learning processes by drawing relational materialist theories of intra-action, entanglement and assemblage (Bodén et al., 2020; Hohti, 2016; Juelskjær, 2020; Juelskjær et al., 2020).

Hillevi Lenz Taguchi (2010) is a key scholar within the field and developed a theory of intra-active pedagogy within the context of early childhood education. Following a relational materialist approach, Lenz Taguchi (2011) describes learning as an

entangled process, emerging ‘as an effect of the intra-activity that takes place in-between children and material artefacts’ (Lenz Taguchi, 2011). Other posthuman and new materialist research accounts have also contributed significantly to understanding early education practices (Lenz Taguchi & Eriksson, 2021), including conceptualisations of children’s learning and development as a collective, intra-active ‘doing’ (Myhre et al., 2017; Otterstad, 2019; Rautio, 2014; Rossholt, 2018).

Elizabeth de Freitas (2017) is another key scholar who has contributed extensively to research on the complex materiality of learning in mathematics education (de Freitas et al., 2019; de Freitas & Sinclair, 2014; Ferrara & Ferrari, 2017). In an article by de Freitas and Palmer (2016), the authors draw on concepts by Deleuze and Guattari and new materialist theory to describe the material performativity of scientific, curricular concepts. The authors highlight how curricular concepts are material elements that co-enact ‘learning assemblages’ within everyday teaching situations. This study in preschool classrooms shows how the concepts of physical force and gravity become participants in a concept-child-assemblage, as the scientific concepts operate as creative playmates for the children to learn *with* rather than *about* (de Freitas & Palmer, 2016).

In an experimental case study on class management, Plauborg (2016) explores how the academic and the social (‘didaktik, faglighed og socialitet’) are at play in concrete, living teaching situations. Using Barad's agential realist concept of intra-action, Plauborg (2016) highlights the inseparable interplay of these dimensions of three classrooms (5^{th}-6^{th} grade) in three different schools. The study shows how enactments of the academic and the social are performed in intra-action and transformed by not just each other but also by agencies outside the classroom situations (Plauborg, 2016). The author concludes the study by suggesting an agential realist conceptualization of class management and learning that is responsive to the complexity of intra-active agencies in teaching situations (Plauborg, 2016, 2018). Other research within the field has also contended that academic learning and social relations are in an intra-acting and co-constitutive relationship (Christoffersen, 2014; Lahelma, 2002; H. Riese et al., 2012; Sellar, 2012).

2.3.3 The complexity of teachers' and teaching practices

The third category of research is *the complexity of teachers' and teaching practices*. These scholars operate from a diversity of approaches, including STS-inspired, sociomaterial, non-linear, process-oriented and practice-based perspectives (Edwards-Groves et al., 2010; Fenwick et al., 2012; Kayumova & Buxton, 2021; Kostogriz et al., 2022; Mulcahy, 2012b, 2014; Sandvik, 2012; Wallace et al., 2021).

A study by Strom & Martin (2017) consists of three case studies of first-year science teachers' teaching practices and experiences (Strom & Martin, 2017, 2022). By creating portraits of the first-year teachers' practices, this study highlights the complex, non-linear, non-uniform and processual characteristics of teacher development and the complex, emergent 'texture and embeddedness' of everyday teaching (Strom & Martin, 2022). Employing theories of complexity and nested systems, the authors demonstrate how the teacher body, entangled with education, experiences and personal beliefs, is an assemblage (Strom, 2015). The teacher-assemblage is nested within the complex multiplicity of classroom-based practices, which is nested within a larger, societal schooling assemblage. The complexity of the new teachers' development depended on a variety of elements, including the enthusiasm of pupils, large or small class groups, variable access to classroom spaces and other learning resources. Multiple elements thus entangle within each of the teachers' practices and experiences, personal values and beliefs to produce a multiplicity of sometimes contradictory teacher subjectivities (Strom & Martin, 2022).

Presenting research on the Norwegian context, Nerland (2022) highlights the increasing complexity of the teaching profession and organisational learning. Drawing on Knorr Cetina's concept of 'epistemic practices', the author points to changes in the collective 'doing' and sharing knowledge in contemporary teacher environments. One of the changes distinct to the teacher knowledge culture is connected to knowledge sharing with new expert constellations of actors and stakeholders and the ways local work practices relate to 'wider expert cultures' (Nerland, 2022).

This characteristic is also demonstrated by an ethnographic study by Tronsmo (2020) following the work of a team of teachers in a lower secondary school. By drawing on assemblage thinking as an analytical tool, the article presents empirical examples of the teachers' knowledge work as positioned as part of a 'knowledge assemblage' consisting of different actor constellations. The teachers' practices entailed, for instance, actively and analytically engaging with standards, working with actors and stakeholders representing 'generic practice experts', and teamwork with peers in and beyond the local school's organisational boundaries. The study shows the increasing complexity of teachers' daily knowledge work and the wide variety of relationships that they are engaged in (Tronsmo, 2020)

Scholars have highlighted the presence of complex material relational structures in education and the agential work they perform as agential apparatuses (Julien, 2021; Simons & Olssen, 2010). In this strand of research, the focus is placed on how power relations materialise through the performative nature of wider educational and school practices. An article by Simons and Masschelein (2008) articulates how the public discourses on learning as capital, competence management, learning outcome and learning-centred leadership can be understood as a learning apparatus. Juelskjær and Staunæs (2016) also use Foucault's concept of apparatus, as well as Barad's notion of intra-action, to trace how learning-centred governance standards combines with post-psychological tools that 'activate affects, feelings, and moods', with the aim to motivate students and enact an 'affective-spatial learning apparatus' that potentializes bodies (Juelskjær & Staunæs, 2016). Other types of apparatuses have been articulated using Barad's notion of apparatus, for instance, student feedback apparatus (Thiel, 2020), curriculum theory (Pratt, 2021), assessments of educational readiness (Nielsen et al., 2022), a class apparatus (Plauborg, 2016), neoliberalist conceptions of critical thinking (Danvers, 2021), material storytelling (Juelskjær, 2014), and research (Juelskjær et al., 2020) as apparatus.

2.4 Positioning the study

This chapter has presented the main streams of research and discussions on materiality and education. The research on the theme of *embodiment* brings attention to the presence of bodies and the active role of bodies in education. As a field, it has shown the school's role in regulating bodies and the diverse ways that schools' day-to-day material and discursive organisation shape students' and teachers' bodies. The research within the theme of *spatiality* highlights the significance of how educational spaces are organised and inhabited. The field has demonstrated how the physical and temporal organisation of school spaces have fluid boundaries that are contested in day-to-day practices and depend on previous enactments of space and thus are saturated with the residues of history. The research on the theme of *heterogeneous arrangements* has demonstrated how the multiplicity of bodies, practices, technology, things and concepts has a performative effect within contemporary teaching and learning situations. These diverse sociomaterial accounts highlight the complex relationality and performative effects of things and technologies, intra-active perspectives on learning, and the complexity of teachers' practices and teaching.

Overall, this research demonstrates the variety of ways in which bodies, things, spaces, buildings, concepts and practices co-enact educational practices. Methodologically, the research draws on various qualitative research strategies, including ethnographies, case studies and interviews, historical studies, and post-qualitative accounts. This diverse and growing field shares an ambition to capture the complex and relational nature of educational practices. The field has shown how mundane materiality is performing regulatory, political 'work' in everyday school situations while making a convincing argument that 'every politics is simultaneously a *macropolitics* and a *micropolitics*' (de Freitas, 2017, p. 1428). As this present study investigates bodily and spatial enactments of teaching situations while considering the heterogeneous composition of these practices, I thus share the above scholars' aim to draw attention to educational practices' material and relational complexity.

In the research overview, many of the studies, particularly within the field of embodiment, address either teachers' or students' perspectives and practices. In this study, I look at both students and teachers as part of a larger collective material arrangement. In this sense, the present study connects more strongly to the research studies with an explicit interest in the spatiality and materiality of educational practices and heterogeneous assemblages. Furthermore, by addressing which material-discursive practices emerge in upper secondary teaching situations, in this thesis, I have emphasised practices of teaching rather than the more frequently addressed topic of learning.

This thesis focuses on upper secondary education, a field in which research on embodiment and spatiality is relatively rare. Most of the above studies are within primary and lower secondary school and early childhood education contexts. Young adults' formal education has been less explored in current research on materiality. In this student group, there is an increased pressure on academic content and achievements, often related to grades and competition to enter higher education (Lillejord et al., 2017). The emphasis on content may push bodily and spatial aspects of teaching to the background for educational researchers, policymakers and upper secondary teachers. However, I argue that this makes studying material relations of upper secondary education particularly pressing.

The above literature shows that when the materiality of upper secondary education is considered, it is often connected to the performative effects of technology or gender. This thesis draws on these scholars' important insights while placing the analytical focus on material-discursive practices at work in upper secondary teaching situations. As such, I argue that this thesis joins these research fields' efforts to understand the upper secondary classroom's complex material processes and to explore their performative influence on bodily capacities.

3. Theoretical orientation

In this chapter, I will present the theoretical framework. I begin by outlining the main sociomaterial approach that underpins this study. Second, I have organised the thesis' analytical concepts into three different 'branches' under the titles of relational ethics, affect and orientation, and apparatus. In the third section, I reflect on some of the benefits and challenges of this framework's constellation.

3.1 A sociomaterial approach

The thesis takes a sociomaterial orientation to practices (Gherardi, 2021). A central assumption of this thesis is that social life is an ongoing, relational production and arises as the result of situated actions (Feldman & Orlikowski, 2011). In other words, what emerges as a distinct phenomenon, such as teaching, is seen as constituted by everyday practices.

The analytical concepts I refer to in this chapter are drawn from the work of scholars whom all conceptualise materiality, albeit from different angles. Therefore, in this thesis, I use a sociomaterial approach as an umbrella term in order to bind them together. That said, the thesis can be positioned within the *posthuman* sociomaterial approach to practices (Gherardi, 2017). This stance comprehends social processes as material. In other words, by taking this position, I see the material and the social as 'expressions of the same sociomaterial world' (Gherardi, 2017, p. 42). I will outline three important principles for the project's orientation.

3.1.1 Inseparability

The first principle is *inseparability,* meaning no pre-defined ontological divisions exist (Bodén et al., 2020). The distinctions we experience as meaningful and enduring are inherently unstable and context-dependent. For instance, the boundaries of categories we see as fixed, such as 'students' and 'teachers', only become intelligible to us through specific relational entanglements (Barad, 2007). In other words, objects, categories and phenomena are not 'naturally' separate entities but parts of a heterogenous 'indeterminacy'.

The principle of inseparability can be connected to the idea of *general symmetry.* This term is borrowed from actor-network theory and de-centres the focus on human actors and places all types of social and material entities on the same analytical plane (Decuypere & Simons, 2016). The idea of symmetry disrupts dualistic notions, for instance, the separations of human and non-human, mind and matter and knowledge from action (Bodén et al., 2020; Gherardi, 2021). If no separate things, categories or phenomena exist, we cannot know who or what will emerge as the influential 'agent'. This idea radically widens the scope for who or what can enact practices. Moreover, the principle requires us to think beyond individual actors and inquire into how *heterogeneous relations* co-enact educational practices (Bodén et al., 2020). Researching the phenomenon of teaching from this perspective thus challenged my habitual focus on human actors and their intentional actions within the classroom.

3.1.2 Performativity

The principle of *performativity* highlights how any distinct properties or boundaries are the performative effects of practice. For example, the influential feminist scholar Butler (2011) has described how specific practices are the effect of continuous and recurrent enactments. According to Butler (1988), the logic of particular ways of performing gender stabilises over time through historical legacies and expectations. The notion of fixed identities and bodily possibilities thus materialise as the cumulative effect of interaction (Butler, 1988). According to Gherardi (2016), sociomaterial practices should be understood as the accomplishment of stable *ways of doing*. Like in Butler's account, the patterns and logic that delineate practice may appear stable but are not given (Orlikowski & Scott, 2015). For instance, the legitimacy of our taken-for-granted ways of 'doing school' depend on sedimented and normative structures.

Notably, the principle of performativity carries a dynamic potential for both reproduction and change. On each occasion, the practice may be re-enacted, or on the contrary, it may be translated, contested or ignored (Nicolini, 2012). Practices are, in this sense, both stable and open-ended: 'No two occasions of a practice are identical, it is achieved each time for the first time' (Nicolini, 2012, p. 225).

In Barad's (2003) agential realist account, performativity is understood as the process through which reality is being *(re)configured in material-discursive practices* (Barad, 2003). As explained in the introduction of this thesis, *material-discursivity* underlines the discursive and regulatory role played by matter. In other words, materiality is actively participating in and constituting social phenomena. According to Barad (2003), a practice's material-discursive composition, or *configuration*, has consequences for what materialises as a practice's rules and properties. Each material (re)configuration determines a set of temporary constraints and possibilities, delineating what we are able to do or know. Consequently, since the material configuration determines what we experience as meaningful, it is connected to meaning-making and knowledge.

For this thesis, the principle of performativity allows me to understand teaching as a phenomenon that emerges as a meaningful but contingent and practical accomplishment (Orlikowski & Scott, 2015). A question then arises regarding who or what can influence the 'shape' of the practice and its ongoing accomplishment. According to Gherardi (2016), actions, bodies, environments, artefacts, rules, routines, symbols, texts, and discourses are considered material members actively involved in shaping the practice. Previous research on educational practices has shown how materiality *enacts* educational practice, for example, objects (Roehl, 2012a), screens (Alirezabeigi et al., 2022), concepts (de Freitas & Palmer, 2016), and technologies (Sørensen, 2009).

3.1.3 Relationality

The principle of *relationality* puts the relation in the centre as a performative 'agent' (Bodén et al., 2020). The relation performs the practice because the *way* that the material elements interconnect 'matters' for what materialises as meaningful. While the human body is an essential element of practices, its bodily doings and sayings never emerge in isolation but in relation to other material elements (Gherardi, 2017). Therefore, this thesis considers educational practices to be produced through heterogeneous relations (Nicolini, 2012).

Relations are not only performative agents but also the performative effects of practices (Nicolini, 2012). What we perceive as intelligible social practices do not precede an encounter but emerge from it due to relational associations (Barad, 2007). Our capacity to enact, understand, and reconfigure our everyday engagements, transpires from material entanglements.

According to (Gherardi, 2021), practices come into existence through the enactment of connections. The ongoing connectivity supports the practitioner's capacities to articulate further connections:

> *Knowing-in-practice is a contingent ordering of provisional connections, the effect of the ability of practitioners to find their bearings using the context as a resource and to articulate the matter of the world (objects, artifacts, technologies, and discourses) within a form (Gherardi, 2021, p. 12).*

The network of 'connections-in-action' is thus a form of *knowing-in-practice* (Gherardi, 2016). By emphasising relations and processes of connection, the sociomaterial approach requires us to place the analytical focus not only on who acts. Additionally, we must focus on who is (not) being related to and the material processes through which the relation is enacted (Decuypere & Simons, 2016).

Within this study, the principle of relationality offers a way to approach the constitutive role and performative effect of material relations in upper secondary teaching situations.

3.2 Inseparability, performativity and relationality 'in practice'

The sociomaterial principles of inseparability, performativity and relationality form the basis of this theoretical framework. These principles have informed the thesis's aim, research question, methodological choices and analytical emphasis. Furthermore, the framework was further developed and developed in response to the research process. While conducting the current research project, there was an interplay between the empirical material and the theoretical framework (Section

4.3.3). In this section, I will present concepts that emerged as productive and meaningful in the interaction with the empirical material.

This thesis' three articles use sociomaterial concepts from different theoretical branches. (See Table 2 in Section 3.3). In the following, I will unpack these concepts and discuss their connection to the sociomaterial framework. First, I will explain *relational ethics*, followed by a presentation of the concepts *affect* and *orientation*. Finally, the agential realist idea of *apparatus* is outlined.

3.2.1 Relational ethics

Flinders (1992) describes *relational ethics* as an approach to ethical action grounded in our attachments and concern for others. This approach looks beyond 'good moral reasoning' when examining ethical problems and instead underscores our interconnecting and interdependent existence and, thus, the need to attend to and respond to relationships (Austin, 2008). Relational ethics has developed from feminist scholarship (Denzin, 2003), where it continues to be addressed (Taylor & Ivinson, 2013).

Relational ethics is important in conducting ethnographic research because this kind of research is, ultimately, a relational involvement (Stutchbury & Fox, 2009). As C. Ellis (2007) argues, ethical conduct entails acknowledging and valuing the relational process and emphasising 'mutual respect, dignity, and connectedness between researcher and researched' (p. 4). Aligned with this way of thinking, in Article 1, I discuss how the process of listening, attuning and aligning to the participants' responses can be understood as facilitating *response-ability* in the research (Juelskjær et al., 2020; Pearce & Maclure, 2009).

Furthermore, relational ethics is connected to the *ethics of care*, where scholars have argued for a caring attitude for relations that stretches beyond the domains of family and friendship (Noddings, 2013). Puig de la Bellacasa (2017) draws on Haraway's feminist theory of *situated knowledges* to emphasise how our existence is relationally embedded. In her approach to ethics and care, she refers to Haraway's (1997) statement: 'Nothing comes without its world, so trying to know those worlds is

crucial' (p. 37). This statement acknowledges that as we enter into a new situation or relation, we are already composed of a rich 'world' of relations. Due to this complex composition, a caring relation inevitability entails disconnections, frictions and conflicts. Therefore, Puig de la Bellacasa (2017) argues that this approach to care requires us to recognise differences and maintain 'relatedness in diverseness' while not negating dissent (p. 79).

Puig de la Bellacasa (2017) argues that a caring relation is not something inherently good, and to underscore this, she draws on a definition of care by Joan Tronto that includes:

> *everything that we do to maintain, continue and repair 'our world' so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex life-sustaining web (Tronto cited in Puig de la Bellacasa, 2017, p. 3).*

This quote describes care as involving, for instance, 'maintenance' and 'repair', with the aim to live in the world 'as well as possible'. Puig de la Bellacasa (2017) contends that engaging in caring relations is not an idealistic, pure approach but rather a complicated 'thick impure involvement' (p. 197) with the world.

Likewise, in my work, I experienced that approaching research as a relational and collaborative effort while also facilitating expressions of difference and dissent was a difficult balance. I discuss my experiences with this careful balance within the context of conducting qualitative research in the first article of this thesis. In the article, I combine the ethical principle of informed consent with relational ethics to discuss how listening and responding to participants, including their explicitly and implicitly expressed informed dissent, can be a continuous and relational engagement.

Moreover, the underpinnings of relational ethics resonate with the sociomaterial principle of relationality since both perspectives accentuate the integral role of relationships (Juelskjær et al., 2020; Mulcahy, 2021).

3.2.2 Affect and orientation

To explore *which* practices emerged and 'mattered' in the upper secondary teaching situations, I needed tools to describe *how* spatial and bodily relations processes were actively producing 'teaching'. In this thesis (Article 2), I used the concepts of *affect* and *orientation* to investigate the relational production of teaching situations.

Affect as agency

Affect is a contested concept (Ott, 2017), and this thesis is anchored in Ahmed's (2014) account. Bodies have the capacity to direct attention, actions and energy towards others and, thus, *to affect*, or move, other bodies. Likewise, as bodies, we also have the capacity to *be affected* by or moved by other bodies (Ahmed, 2014, p. 6). This notion of affect emphasises reciprocity and draws attention to the process of relating to other bodies and things while being influenced by them and connecting to them.

Gherardi (2021) has argued that affect theory contributes to sociomaterial theory by expanding upon how agency arises as a relational 'force' through connection-in-action. Affect is tied to agential capacities, in the sense that the capacity for what bodies can do transpires from relations. Within the sociomaterial approach, agential capacities are seen as arising from relations of both human and non-human actors (Nicolini, 2012, p. 223). However, the symmetry between actors and objects is a position that Ahmed (2008) is critical to, and she, therefore, positions her own theory as *critical* materialism (Ahmed, 2010b). I will return to discuss this tension in Section 3.3.

Moreover, the posthuman concept of affect connects to the principle of relationality by challenging us to rethink the human body as always entangled and providing a way to understand our 'selves' as relational beings (Braidotti, 2019). In this thesis, employing the concept of affect provides a way to explore the bodily and spatial interactions that occurred in the upper secondary classroom.

Orientation and alignment

Ahmed (2006) combines historical materialism with feminist materialism of the body to foreground how things and spaces produce (and restrict) body possibilities. In her book, *Queer phenomenology*, Ahmed (2006) explains how our bodily and spatial doings make some norms and values become near and others out of reach. *Orientations* are the effects of what we tend and aspire toward, what is behind us, what is within, and what out of reach (Ahmed, 2006, p. 250). The concept of *alignment* denotes how some bodies are in line, and others are not (Ahmed, 2006). Bodies and spaces are always in the process of directing their attention and energy.

Each body has a distinct set of tendencies, inherited orientations and histories. The orientation of a body (e.g., in Ahmed's examples, sexuality or gender) affects how it is met by its 'surroundings'. This means that objects and spaces, too, have an orientation, in the sense that it may or may not align with that body. Therefore, as a body enters a space, the spatial configuration of the encounter will produce some bodies feeling in and others feeling out of place.

W. E. Connolly (2010) makes a telling account of the significance of the spatial 'layout' of the human body:

> *Human mobility is enabled by our two-leggedness and the position of the head on the top of the body, with two eyes pointing forward. This mode of embodiment, for instance, encourages the production of widespread analogies between a future 'in front of us' and the past 'behind us' (W. E. Connolly, 2010, p. 181).*

In my fieldwork, this 'mode of embodiment' was echoed in the traditional organisation of the classroom, which was usually (but not always) enacted with distinct front and back. Furthermore, the way that W. E. Connolly (2010) connects bodies' spatial direction with our ways of thinking resonates with Ahmed's account.

Alignment can also be understood to resonate with the word *attention,* which comes from the verb *ad-tendere*, meaning to 'stretch toward' (Ingold, 2018, p. 20). Directing attention signifies an active stance, as the body engages in the mode of attentively and actively listening rather than passively receiving and hearing the sounds (Ingold, 2018).

According to Ahmed (2014), one consequence of our embodied re-enactment of specific spatial and bodily connections is that certain associations, cultures and values are 'sticky'. Through this connective process, we may establish a sense of a shared 'horizon' that, in turn, influences our capacities to act:

> *what we 'do do' affects what we 'can do.' This is not to argue that 'doing' simply restricts capacities. In contrast, what we 'do do' opens up and expands some capacities, although an 'expansion' in certain directions might in turn restrict what we can do in others. (Ahmed, 2010b, p. 252)*

Ahmed's concepts thus draw attention to the important and active role of materiality in the situated and social production of embodied and spatial practices. As such, this process of directionality is a form of *spatial politics* (Snaza & Sonu, 2016). Spatial enactments of orientation and alignment are political or performative forces, in the sense that these actions generate (and restrict) affective capacities. Thus, Ahmed's spatial politics offers a way to articulate how certain 'politics of attention' are maintained through everyday interaction.

Ahmed's (2006) critical materialist conceptualisation of spatial orientations and alignment shows how affordances and restrictions are not individually but relationally and spatially constituted. In this thesis, these concepts allow a detailed analysis of how recurring bodily and spatial actions and directions of attention can be understood as a relational glue or a material and material-discursive force. The teaching situations are thus studied as a process of (dis)connection, orientation and alignment.

3.2.3 Apparatus

Practices are at the forefront of this study. Meanwhile, as explained earlier, practices are embedded in and emerging as part of a larger texture of situated practices (Gherardi, 2021). Therefore, this thesis needed a tool to study the relations *between* practices in the upper secondary classroom and their causal and historical connections (Nicolini, 2012, p. 238). To map the relations between multiple practices, I employ Barad's (2007) agential realist concept of apparatus.

Barad (2007) defines *apparatuses* as specific boundary-making practices (p. 148). The effect of the apparatus is a demarcation that makes parts of the world visible and

meaningful. Bodies, things and phenomena materialise *intra-actively* through the apparatus' 'dynamic (re)configurings of the world' (Barad, 2007, p. 169). Furthermore, apparatuses enact *agential cuts* through the intra-action of their material components. The 'cut' determines boundaries, properties and meanings and hence, circulates agency, and crucially: 'Different agential cuts produce different phenomena' (Barad, 2007, p. 175). Thus, when the apparatus enacts a cut, it does performative, material-discursive work, producing capacities and restrictions for what we are able to do or know.

The apparatus is made *of* the material conditions it reconfigures. Therefore, bodies, spatial arrangement and practices 'matter' for *how* the apparatus makes cuts. Hence, the apparatus does not result from cultural or historical forces 'impressing themselves' on practices to determine an outcome (Barad, 2007, p. 341).

In their account of the apparatus, Barad (2007) explains that, as the apparatus 'observes' a phenomenon, it is productive of the phenomenon that it 'measures' (p. 334). For example, as I 'enacted' a cut in this project's 'research apparatus', I interfered with 'the phenomenon of teaching' and its relations. This enactment adds something 'new' rather than extracting and reproducing knowledge. (This is further discussed in Section 6.1.1). As such, it could be more precise to define the phenomenon of this study as the 'researching-teaching-practices' rather than 'teaching' as a separate phenomenon.

There is some ambiguity in how Barad (2007) explains the idea of an apparatus. For instance, both practices and apparatuses are defined in terms of their material-discursive performativity. Furthermore, Barad (2007) often uses the word in its plural form when describing it, for instance: 'Apparatuses are specific material-discursive practices' (p. 146). Therefore, it is challenging to find clear definitions that separate the terms 'apparatus' and 'material-discursive practice'. However, my understanding of Barad's ambiguous use of the two terms is that apparatuses and practices are not closed and static structures but inherently open-ended and dynamic processes.

According to the sociomaterial principle of inseparability, the world has no inherent boundaries. When the different 'parts' of the world engage in intra-action, temporary boundaries emerge to demarcate a temporarily 'complete' practice or apparatus. Barad (2007) also notes that phenomena are produced as apparatuses are intra-acting with multiple other apparatuses (p. 208). Thus, I understand Barad's (2007) agential realist concepts to articulate a structure of part-whole relationships.

I make an analytical distinction in Article 3 between the terms 'material-discursive practice' and 'apparatus'. Based on the above arguments, I interpret the intra-action of several material-discursive practices to constitute one apparatus. In other words, apparatuses occur as material-discursive practices intra-act. It is important to note that by accentuating this distinction between the two terms, I create a 'tidier' conceptual structure and thus simplify Barad's more intricate account. However, I argue that this distinction is fruitful as it allows me to employ the two terms as analytical tools, facilitating a more nuanced analysis of the relational processes of the upper secondary classroom.

3.3 The theoretical constellation and its combination of concepts

This thesis's sociomaterial theoretical orientation combines concepts from several different materialist perspectives. The framework has drawn on relational ethics of care (Puig de la Bellacasa), posthuman sociomateriality (Gherardi), agential realism (Barad), and critical materialism (Ahmed). The combination of concepts offers a robust and supple device to *think with* (Haraway, 1997). The theoretical framework configured my analytical sensibility when conduction this research project. It refined the angle of this research design, my engagement with the field and the analytical process.

The different sets of concepts from different materialist stances made different analytical questions possible, and each of the three articles generated distinct sets of relations and practices (see table below). However, the eclecticism of the framework

also means that there are some issues to discuss in terms of partly overlapping concepts and also latent tensions between some of the theories and concepts.

Theoretical orientation	**(Critical) Posthuman sosiomaterial theory** Inseparability, performativity and relationality		
Research question	*Which material-discursive practices 'matter' in the teaching situations of a Norwegian upper secondary classroom?*		
Analytical concepts	Relational ethics Response-ability Thinking with care	Affect Alignment Orientation	Practices Material-discursivity Apparatus
Used for:	Discussing a processual and relational concept of informed consent (Article 1)	Exploring how spatial and bodily processes produce 'teaching'. (Article 2)	Exploring practices and their relations in producing 'teaching'. (Article 3)

Table 2 Overview of the theoretical framework

Combining similar concepts

In the above framework, I have engaged two similar concepts: *Sociomateriality* and *material-discursivity*. The terms may be read as similar because both challenge a taken-for-granted distinctness of and boundaries between the 'social' and 'material', and the 'material' and 'discursive'. Consequently, they could be understood to overlap. Meanwhile, there is an analytical difference between how I use the two terms in this thesis. The concept of *sociomateriality* is used as an umbrella concept to anchor the thesis's theoretical stance and function as a broad signifier for the diverse branches of materialist concepts used. I understand the term *material-discursive* to address more explicitly the regulatory, discursive work that material practices enact. Therefore, I decided to use material-discursive practices as a more active concept. It explicitly informs the analytical work of the third article, as well as the general discussion of the thesis. However, the notion of material-discursivity can also be understood as 'working' in the background in Articles 1 and 2, albeit implicitly, through the thesis's overarching research question.

Combining conflicting concepts

The sociomaterial theoretical framework builds on ideas that critique humanism, for instance, emphasising relational agency and symmetry between the human and non-human, and decentring the first-person perspective (Bodén et al., 2020). In contrast, Ahmed's (2006) critical materialist concept of orientation draws on phenomenology and perspectives that emphasise first-person experiences (Husserl, 2012). The underpinnings of these perspectives are, therefore, in conflict [3]. Furthermore, this conflict resonates with the tension between the notions of relationality and difference (see Section 3.2.1 and Chapter 6).

However, I find that Ahmed's theory was a valuable extension of the framework that allowed me to explore the spatial connections of bodies. Furthermore, as van der Tuin and Dolphijn (2010) argue, agential realism is a non-dualist theory and, consequently, an affirmative approach in the sense that it embraces an additive, generative process of thinking 'with' rather than striving for coherence and upholding classifications. In light of this argument, I understand the nondualist and affirmative perspective of agential realism to be transversal (van der Tuin & Dolphijn, 2010). Any theory can be brought together and 'put to work' with other theories and ideas when analysing the data as long as I account for this theoretical configuration and acknowledge how these choices affect the research's enactment of boundaries and power relations (See Chapter 6). Although this tension creates a theoretical dissonance in the project, the framework allows articulations of difference and nuance in the empirical analysis, and hence is also beneficial and productive.

[3] Ahmed (2008) is an outspoken critic on agential realism and initiated a longer debate on Barad's work (Irni, 2013; van der Tuin, 2008).

4. Methodological configuration

In this chapter, I consider the thesis's research design and its methodological configuration. The chapter has four sections. The first section anchors the research project in an ethnographic tradition and explains the different phases of the fieldwork. In the second section, I reflect upon researcher reflexibility and field relations. The third section describes the project's analytical processes and strategies. The fourth section discusses issues relating to research ethics.

4.1 A video-based ethnography

The research project aims to explore the material complexity of teaching by exploring how 'teaching' arises from everyday relational interactions and practices. The processes and practices that constitute teaching are the phenomena of this study (Savin-Baden & Major, 2013). Furthermore, the research question is theoretically informed, focusing on the *material-discursive* production (Barad, 2007) of upper secondary teaching situations, and asks:

> *Which material-discursive practices 'matter' in the teaching situations of a Norwegian upper secondary classroom?*

To answer this question, I needed to examine the unfolding of everyday teaching situations closely, and I designed the study as an ethnography (Hammersley & Atkinson, 2019). Educational ethnography is a method where the researcher encounters, observes and participates in the daily life of schools and classrooms (Beach et al., 2018) while producing detailed descriptions of their social and material systems, relations, processes and boundaries (Desmond, 2014). The ethnographic method is a relevant and suitable approach for this research project since it is exploratory and centres on 'naturally' unfolding teaching situations.

I employed a video-based ethnographic method (Bencherki, 2021) while considering the creation of audiovisual recordings as a *focused* approach to ethnographic fieldwork (Knoblauch & Schnettler, 2012). A large amount of audiovisual data allowed me to re-view situations and to produce rich and detailed descriptions of

spatial and bodily processes in the classroom (Knoblauch, 2005; Pink & Morgan, 2013). Hence, the empirical method of conducting a video-based ethnography enabled me to carry out a situated investigation of everyday social interactions and practices and closely study the material conditions of the upper secondary classroom practices.

In the following, I will describe the different phases of the research, including considering recruitment, gaining access, conducting the pilot and the main fieldwork, and leaving the field.

4.1.1 Entering the upper secondary classroom

To conduct this ethnography, I had to make essential early decisions regarding when, where, and with whom to accomplish the fieldwork (Hammersley & Atkinson, 2019). When selecting a field site, I used a purposeful sampling strategy which entails carefully selecting participants that are likely to provide important information (Savin-Baden & Major, 2013, p. 314). The main aim of this study is to understand the material and relational complexity of teaching. Therefore, I made a series of considerations and evaluations of which sites could generate thick information and provide relevant insight into the phenomenon of the study (Coffey, 2018).

I chose upper secondary education as a field, given that after spending nearly 13 years in formal education, these students can be considered experts at 'doing school'. Furthermore, upper secondary teaching situations in Norway have been less investigated than in other levels of education (NOU 2019: 25). Further, to make detailed descriptions of the material complexity of classroom life, I needed to record a diversity of teaching situations. The broad and diverse curricular emphasis of the 'Media and communication' programme in Norwegian upper secondary education made this study programme a relevant field site for this study (Kunnskapsdepartementet, 2020). Additionally, on a more general level, media education has been characterised as an interdisciplinary field with a fluid and moving knowledge base due to its close relationship with the rapidly changing media and technology landscape (S. Connolly, 2020a, 2020b).

Another consideration I made regarding selection is that requesting access to observe the everyday life of an upper secondary class is a big ask since these students' life is already full of school-related pressures (Lillejord et al., 2017). I wanted to make video recordings of the teaching situations, which is an even more intrusive request. Since the curricular content of the 'Media and communication' programme requires the students to work with video and audio equipment, I contended that the media students were more likely to be comfortable with the presence of such equipment in their everyday environment. Furthermore, I decided to follow one class rather than do the fieldwork in several classes. Spending more time with only one class was purposeful since it allowed the participants to get comfortable with the presence of the video recording equipment and build a relationship of trust. Moreover, a primary concern was finding an upper secondary class that would be comfortable with letting me observe and record their everyday teaching situations.

I began the recruitment process by contacting upper secondary schools that provided a 'Media and communication' educational programme. The school leaders put me in touch with the relevant head of the department, who then distributed information to the teachers who informed their students. One media teacher contacted me with interest in participating in the research. We talked about the research project in further detail, and he invited me to visit the class in person. When I visited the class, I presented myself and the project and handed out written information and consent sheets (See appendix). Some of the students decided to participate there and then, whilst others wanted more time to read about the research project first. Finally, a few weeks later, the teacher told me that the class had decided to participate.

Since I conducted a pilot study in the same school, I conducted these final steps of the recruitment process twice, with two different classes. The recruitment for the pilot study was done in 2017 (See Section 4.1.2). I conducted the recruitment process for the class that became participants in the main fieldwork in 2018.

For the main fieldwork, a class of 23 upper students and their teacher agreed to participate in this study. The students were in their second year of the three-year-long

upper secondary education, all aged 17 and 18. According to Norwegian ethics guidelines and data protection laws, young people aged 16 years and over can decide to participate in research when the topic of the study is not of a sensitive nature (NSD, 2020).

In addition to the general curriculum, the 'Media and communication' programme consists of two common subjects, called 'The media society' and 'Media expressions', and a series of optional subjects for further specialisation in 'Graphic design', 'Image', 'Text', 'Media development', and 'Sound scaping' (Kunnskapsdepartementet, 2020). I followed the class during the lessons on 'The media society' and 'Media expression'. The class had ten lessons per week in these two school subjects. The lessons were usually structured into projects or themes lasting one or two weeks.

Trust was critical in my project since it entailed asking the teachers and students to let me record their everyday life. Therefore, an experienced teacher and a good teacher-student relationship were important criteria for selecting the participants. Most teachers in Norwegian upper secondary schools have a master's level education specialised within their curricular subjects, which was also the case for this teacher. The teacher had considerable professional experience and had taught for more than ten years. The teacher had been a *form teacher* ('kontaktlærer') for this class for nearly two years. In Norway, a form teacher is the main contact person for the students and is responsible for the welfare of the class. For instance, during my time in the field, the teacher regularly talked (individually) with the students and addressed feedback from the students from the annual Pupil Survey[4] regarding the class' learning and social environment. Consequently, this relationship was closer than a 'regular' teacher-student relationship. In classroom interaction, for instance, the students frequently approached the teacher to talk about a broad range of issues. Also,

[4] The Pupil Survey is an annual survey that all schools are obliged to run. It invites students to share their opinion on learning and social environment in their school (Utdanningsdirektoratet, 2020).

many students described their confidence in this teacher during the debriefing interviews.

Moreover, conducting fieldwork is a relational practice and requires a continuous process of attaining and maintaining the participants' trust (J. Riese, 2019). Therefore, the initial recruitment phase was just the first step of the relational process of gaining access to the ethnographic site (J. Riese, 2019). A more in-depth discussion of my continuous work with negotiating access is provided in Article 1.

4.1.2 The pilot: Refining the research design

In 2017, I conducted a pilot study within the same school and with the same teacher as the primary fieldwork but with a different class of students. I spent five lessons with the class over one week. This pilot was crucial as I could identify practical and technical possibilities and challenges concerning creating audio and video recordings of hectic classroom activities (Heath et al., 2010). I tested the setup of the equipment, including various tripods and different camera angles. Afterwards, I assessed the quality of the recordings, the digital workflow and the video analysis software. For example, the initial setup involved two pocket-sized cameras that could simultaneously record events from two different angles. I experienced that the video cameras' audio recordings were of low quality. Therefore, I decided to add a separate audio recorder to ensure that the audio recordings were of sufficient quality. The pilot study also aided the analytical focus of the research since I had the opportunity to try to transcribe fragments of the audiovisual recordings. I also could practice the process of 'thinking' the audiovisual data with some of the main theoretical concepts (Jackson & Mazzei, 2012).

4.1.3 The fieldwork

Making strategic choices is a vital part of all stages of ethnography. I conducted the primary fieldwork for six weeks, distributed over three months in 2018. During the fieldwork, I found that conducting ethnographic fieldwork was a careful balance between making detailed plans whilst remaining open to unforeseen moments and being flexible to surprising new directions in the field (Coffey, 2018). When creating

plans and taking strategic decisions, I based my rationale for these decisions on the project's research question as well as a range of theoretical, practical and ethical considerations (Coffey, 2018). In the following, I will present the configuration of the research setup before reflecting on some of the decisions I made during the fieldwork.

The research setup

Flexible and movable equipment was essential to respond to spontaneous interaction and make use of such opportunities in the field. I usually attached one camera to a small suction-cup-monopod that could stick to any wall and desk. I placed the second camera on a freestanding tripod which I could move anywhere on the floor. The separate audio recorder was also portable. I could thus swiftly move the equipment to record the varied spatial arrangement of the different teaching situations (Luff & Heath, 2012). This flexibility was valuable. For instance, I would usually aim to arrive some minutes before the lesson began in order to arrange the equipment. However, in this school, several classes used the same classrooms, and there were not always breaks between the scheduled lessons. In these cases, I had to install the cameras as fast and discreetly as possible during the first minutes of the lesson.

I often placed one camera to capture an overview of the room at large and one camera closer, for instance, to a group activity or the teacher's actions. In this way, I could document the whole class situation and simultaneously capture close-ups of group interactions (Heath et al., 2010). Having two cameras also allowed me to record two different activities that co-occurred in different rooms in the school. For example, when the class split up and moved into separate rooms, I could leave one camera in the classroom and put the other camera in the group room.

Field notes were an integral part of my ethnographic research method. At the end of each day, I wrote down what I thought were the main events and any relevant contextual information. For example, I took note of interactions and events of interest that I did not record, such as informal and pre-class interactions and information relating to assignments and other documents (Derry et al., 2010). I also wrote down

non-audiovisual details, for example, the general moods and atmospheres in the classroom and my ethical or methodological reflections.

After each day in the field, I transferred the digital files to an encrypted hard disk and filed them alongside the field notes (Heath et al., 2010). The file sizes were large, and it was time-consuming to transfer and review them. Therefore, having a structured file system connected to the field notes was valuable. The field notes thus eased my organising and indexing of the video files. Later these notes also aided my navigation of the material in the analytical phases of the research. The audiovisual recording setup, combined with field notes, and the theoretical focus, provided a robust and flexible research design that I could quickly adapt to the complexity that emerged in educational practices (Coffey, 2018).

Making decisions

I asked the teacher and the class to carry out their teaching practices as 'normal' as possible. I also insisted that the teacher should not consider my presence in his planning of the lessons. For instance, my greatest fear would be that the teacher adjusted the teaching situations to make it easier for me to record them. However, this also meant that I did not always know the plan for the lesson. The teaching situations could quickly change trajectories. Without much notice, the teacher and the class could completely rearrange the classroom (e.g., from whole class to group work) or move to various parts of the school building, for example, into group rooms, recording studios and the schools' common areas. For some of the assignments, the students even left the school building. I often had to make quick decisions on which groups or situations to follow and how to place the equipment. In these cases, the research question guided my choices. For instance, I prioritised opportunities to capture different activities and spatial arrangements based on the project's *theoretical* focus on practices and their materiality.

Another challenge was to make audiovisual recordings with sufficient quality to be re-viewed and analysed. I tried to anticipate the trajectory of the current action and activities so that I could, for instance, modify the angles of the cameras or move the

audio recorder closer to the action. I usually aimed to time such adjustments so I would not make unnecessary interruptions in the teaching activities. However, more often than not, the teaching situations changed and unfolded in unexpected ways. I then had to weigh the benefits and drawbacks of changing the position or the settings of the equipment. The *practical* need for high-quality audiovisual recordings was thus in a continuous balancing act with the 'cost' of engaging with or moving the equipment, thus disturbing the teaching situation and drawing unnecessary attention to myself and the equipment.

It was a challenge to divide my focus on both getting high-quality recordings whilst also maintaining a level of analytical presence and focus on what was happening in the teaching situations when observing. The focus on the technical side of making recordings sometimes took my attention away from the situation at hand. However, over time, I learned more and more about the students', the teachers' and the overall classroom's rhythms of spatial arrangements and bodily enactments. My ability to anticipate the class's movements and activities thus changed, and I became better attuned and could navigate better within the in-field relationships.

I also based my decisions on which situations to record on *ethical* considerations. One example is when a student approached the teacher with a distraught face and asked him for a conversation. In this case, I do not doubt that it was appropriate to turn the camera off and leave the situation. However, other cases were more ethically ambiguous, and I discuss this topic in more depth in Article 1 of this thesis.

4.1.4 Leaving the field

As I had spent a total of six weeks with the class, I had accumulated a substantial amount of recorded material, approximately 40 hours. My recordings encompassed a broad range of activities, thus capturing what I judged to be the necessary richness and variety to address the research question. In this class, the school subject's local curricular plan and structure were based on 'project periods' (usually two weeks). When I decided to finish the fieldwork, one project period ended, and a new period, where the teachers and students began preparations for the end-of-year exams, began.

Based on these considerations, it appeared to be the appropriate time to leave the field (Delamont & Atkinson, 2021).

In the process of leaving the field, I conducted debriefing group interviews with the students and the teacher (Brinkmann & Kvale, 2015). I informed the participants about these interviews at the beginning of the project, and they had already indicated their interest in taking part or not. However, since nearly three months had passed since they first consented, I re-presented information about the interview for the class and invited the students to make a new decision about whether to take part or not.

A total of 15 students agreed to participate in the interviews. I conducted the interviews in four separate groups of 3, 3, 4, and 5 students. I began these group interviews by presenting some of my observations and invited the students to discuss and contextualise these (Derry et al., 2010). The field notes and preliminary analysis thus formed the base for these conversations (Pink & Morgan, 2013). In this way, the students contributed to the project's preliminary analysis. In these interviews, the students were offered an opportunity to get to know more about the research project and what I had learned so far. Similarly, my interview with the teacher provided an opportunity to discuss, debrief and contextualise my preliminary analysis (Brinkmann & Kvale, 2015).

I did not systematically transcribe and analyse these five interviews. I still consider them part of the ethnographic fieldwork, as the interviews impacted the research indirectly. For instance, the interviews allowed me to 'calibrate' my understanding of the observed classroom practices with the participants' thoughts and experiences. From these conversations, I felt content that my initial observations aligned with the participants' accounts of the events in the field (Hasse, 2015).

I had a substantial amount of data to analyse in the recorded material from the classroom. Possibly, by including the students' or the teacher's verbal accounts in the analysis, I would have created an even richer ethnographic account. However, through the use of video recordings and from spending prolonged periods of time with the research participants, I generated an extensive amount of empirical material

(Hammersley & Atkinson, 2019). Transcribing the audiovisual material was also a time-consuming process. Therefore, I chose to prioritise focusing on the classroom situations since they were more relevant for understanding teaching a processual and relational activity. This video-ethnographic approach thus opens different ways of understanding the phenomenon of teaching than would have been possible through, for instance, emphasising student and teacher interviews. Importantly, there is no all-encompassing way to conduct research. Choosing one way to perform research will always mean excluding other ways (Barad, 2003).

4.2 Reflections on the field relations and researcher's roles

A critical reflective practice should accompany the ethnographer throughout the research process, from the research design, data collection and analysis to the writing and dissemination (Delamont & Atkinson, 2021, p. 101). Furthermore, it is integral to the ethnographic research process to make descriptions of what the researcher brings to the fieldwork in terms of performances of roles, experiences, and perspectives (Delamont & Atkinson, 2021). This section presents a reflexive account where I situate my own position as the researcher in relation to the participants while in the field (Whitaker & Atkinson, 2021).

Throughout the fieldwork, I did not aim to take part in teaching situations. Still, I consider the research engagement *participant observation* (Coffey, 2018). I was, for instance, regularly talked to by the students and the teacher. I also regularly tended to the recording equipment, for instance, as I had to move it. This engagement with both the class and the equipment inevitably became part of the materiality of the everyday classroom and, thus, the phenomenon that I studied. As an ethnographic researcher, I am dependent on actively engaging in relations within the field.

Relations as resource

However, I did usually try to maintain a discreet presence, and during the early days of the fieldwork, I discovered that I was inadvertently aspiring for me and the equipment to take on an 'absent presence' in the school environment (Coffey, 2018).

One early fieldwork experience made me aware of this attitude. In this situation, five students were sitting around a table near the back of the classroom. I had placed one of my cameras on the table of that group, and I sat further back, attempting to keep my distance. The teacher was sitting at his desk at the other end of the room, facing the whole class. The students agreed to ask the teacher for advice on their project. Playfully, all five of them raised their hands to catch the teacher's attention, and the teacher (T) responded by talking loudly across the room towards the student group (S1-S3):

> *T: Ok! You can come up.*
>
> *S1: Yes.*
>
> *S2: All of us? The whole group? [Makes large eyes and raises eyebrows]*
>
> *S3: Should all of us come up there?*
>
> *T: No? [Hesitates] Yes. It's better if you come up. Come up here, all of you.*
>
> *S1: But (..) we are being filmed and everything, can you not come down here? [In a loud voice, across the room]*
>
> *S2: We are being filmed! [Loud voice while pointing demonstratively towards my camera]*
>
> *T: Oh. Of course, (.) that's right. (.) Yes. [Picks up the computer, stands up, and walks towards the group]*
>
> *S2: Hehe, a good excuse… [In a quiet voice, to the group]*
>
> *S1: ..so we didn't have to walk.*

The group laughed, and some of the students turned toward me with a smile. I smiled back, but at the same time, I felt a whole range of contradictory responses go through my body. The above interaction occurred at such a volume that it caught the attention of the entire class. Also, the presence of the equipment became very apparent, which made me feel uncomfortable. I felt the urge to clarify by telling them (both the teacher and the students) that they did not need to consider the research equipment, as it was easy to move it. However, I hesitated, and as the final comments made clear, the students were not concerned with adjusting their actions to accommodate the camera. For them, the presence of the equipment came in handy as a resource and an excuse for them not to move.

Initially, the feeling of having disturbed the ordinary and naturally unfolding classroom interaction troubled me. After reflecting upon the experience, however, I realised that without intending to, I had carried with me the traces of specific practices of scientific ideals. These ideals represent the researcher as disembodied and invisible and the fieldwork as a distanced observation. Hence, the above in-field situation contributed to my understanding of the research process as a complex entanglement of values, expectations and habits.

Additionally, by critically reflecting upon my response and by attending to the feeling of dissonance, I also learned something new about the upper secondary classroom. In the above situation, the students seem to tap into the presence of the research equipment and connect it to the teacher's sense of responsibility towards the research equipment. The teacher-research-equipment-relation became a relational resource for the students. The situation is thus an example of the fluid boundaries and sociomaterial permeability of teaching interactions.

Following the sociomaterial theoretical framing of this thesis, the living relations of all practices are changing and flexible and never fully controllable. The boundaries between the research practice and the practice under study are also fluid. The research practice is a material and relational phenomenon, just as much as the teaching practice that I studied. Moreover, the above situation shows how research is a process of relational learning by being in the field through engaging in the unfolding, situated relationship with the research participants (Ingold, 2018).

Researcher's roles

I entered the classroom with the expectation to 'be' a researcher and to 'do' research. However, as the above paragraphs have shown, the role of 'being-researcher' is ambiguous, unstable, and unclear (Hammersley & Atkinson, 2019). There is no neutral starting point for the in-field learning processes. The ethnographic knowledge production is always context-specific, partial and positioned (Hasse, 2015). As discussed in Article 1, I negotiated my positions by navigating both my own and the participants' construction of multiple practices. The ways I engaged with the

participants in the field were contingent on the fieldwork relations, as well as my previous experiences, which generated a mix of different roles or positions. These ambiguous preconceptions and roles proved to be both a strength and a disadvantage.

As a researcher, I was a newcomer in the classroom (Hasse, 2015). I did not have a clear position or any responsibility to enact in this specific environment. I quickly found that my routines and actions in the classroom involved tending to the recording equipment. In this sense, one field role that I enacted was thus a 'videoing researcher'. Although, I sometimes felt like a videographer or documentary maker. The students themselves often used video and audio recording equipment. Operating the lens-based equipment, therefore, felt like a 'natural' activity in the 'Media and communication' classroom, and I felt like the practice of operating this type of equipment was a role I somehow shared with the media class and I could use to establish rapport. My relationship with the equipment thus became a part of my researcher role within the field (Coffey, 2018, p. 62).

While in the field, I also became aware of enacting other roles. Before starting this PhD, I worked for three years as a media teacher in upper secondary school, and I have also worked with teacher students. In this sense, I was not a newcomer to this type of environment (Hasse, 2015). For instance, the 'teacher-student relationship' was a well-known relational structure. My experiences as a teacher provided me with both advantages and challenges throughout the research process. For example, when I presented myself to the students and the teacher, I explained my background, hoping that this could make them trust me. In this sense, I used my previous experience as a teacher as a tool to connect with the research participants. My earlier experiences in educational settings made it easier to be tactful when engaging in the different practices of the school. I was familiar, for example, with the structures of the Norwegian upper secondary school system in general and that, traditionally, media school subjects often involve 'project-based' teaching methods.

However, my previous teaching experience made it challenging for me to create enough analytical distance so that I could see the material 'strangeness' in everyday

teaching interactions. In the next section, I will discuss and reflect upon the strategies I employed during the analytical phase, including how I 'fought' my familiarity with the practices of teaching (Delamont & Atkinson, 2021).

4.3 The analytical process

In line with the focused ethnographic approach, viewing the recorded data is considered a form of extension of the fieldwork (Knoblauch & Schnettler, 2012). The *ethnographic place* is understood as the 'entanglements through which ethnographic knowledge emerges' (Pink & Morgan, 2013, p. 354). As I left the original field site, the possibility for multiple and systematic re-viewings of audiovisual recordings meant that the detailed engagement with fieldwork situations could extend 'off-site' beyond the actual field encounter (Pink & Morgan, 2013, p. 355). In this sense, the engagement with the 'field site' continued into the post-fieldwork phase. Therefore, the analytical work is a part of the ethnographic place. While the main fieldwork took place over three months, the post-fieldwork, analytical engagement with the recorded material took place over more than a year.

Similarly, there is no clear boundary between the fieldwork and the analytical phase in this project. The research project's aim is theoretically informed, and in this sense, the entire research process should be considered a form of theory-informed, analytical work (Delamont & Atkinson, 2021). In other words, the analytical work took place throughout the research project, including the research design, the recruitment, the main ethnographic fieldwork and the post-fieldwork engagements.

This section concerns the post-fieldwork analysis. Ethnographic analysis is the process of describing and interpreting the phenomenon under study, with the aim of trying out and developing explanatory or theoretical concepts that account for the phenomenon (Coffey, 2018). The ethnographic analysis aims to open up, not reduce, data. *Familiarity* is considered a core challenge for ethnographers, which can reduce data by making certain relations and processes invisible (Delamont & Atkinson, 2021). This was a challenge for me in the present study. For instance, my previous

experience working as a teacher made many of the classroom arrangements and situations seem ordinary. It was hard to 'unsee' certain habits of seeing, as the 'teacher-gaze' took the place of the 'researcher-gaze'.

One way to approach this challenge is *to make the familiar strange* (Delamont & Atkinson, 2021), a process which aims to bring the mundane, taken-for-granted 'background' processes to the fore. Three key analytical strategies aided me in the 'fight' against my own preconceptions: (1) the use of audiovisual recordings, (2) the practices of re-viewing and transcribing, and (3) 'thinking with theory' (Jackson & Mazzei, 2018).

4.3.1 Mapping the audiovisual material

In the first phase of the analysis, I organised, re-viewed and catalogued the whole video corpus (Heath et al., 2010; Knoblauch & Schnettler, 2012). I began the process by placing the video files into a chronologically linear timeline using video coding software ('Mangold Interact'). I could then view the dual-stream of video recordings simultaneously and chronologically. Re-viewing the whole video material while looking through and expanding upon the field notes helped me gain an impression of the material as a whole and get an overview of different situations and their qualities.

Next, I assigned basic, descriptive terms, or *categories,* to segments in the timeline (Heath et al., 2010). Informed by the research question and its focus on bodily and spatial processes, I constructed non-excluding descriptive categories. Examples of categories were forms of activities (e.g., taking attendance, teacher talking, students talking, group discussions, individual writing), spatial movements and arrangements (e.g., whole class or group work), different types of spaces (e.g., classroom and group rooms.), and general topics of conversations. This was an additive process of layering multiple categories on the Mangold timeline. With the aid of this software, I created an interactive map of the spatial and bodily events in the video corpus. I now had a sense of the whole video corpus and having this map meant I could retrieve, re-view and compare situations during the rest of the analysis in a few relatively effortless

steps. This allowed me to systematically yet responsive navigate and access different episodes in the audiovisual material.

4.3.2 Re-viewing and transcribing

The permanent recordings of the field situations allowed me to re-view situations (Delamont & Atkinson, 2021). The recordings thus provided a detailed and dense starting point for creating a rich account of the materiality of the upper secondary teaching situations. This denseness was a strength since the study focused on both non-verbal and verbal interactions, including the material environment and the spatial arrangements of the classroom, on both a micro-level and over time.

However, the amount of detail captured in audiovisual recordings also represented a challenge. With the duration of the recordings reaching over 40 hours, it was necessary to reduce the time spent on re-viewing the whole material and ensure that I had enough time for the in-depth transcriptions and analysis of shorter episodes (Heath et al., 2010, p. 66). As a strategy for selecting which events to transcribe and analyse, I followed the advice of Heath et al. (2010). They suggest that a practical first step to begin is to play and replay a very short clip (e.g., 10 seconds) while transcribing its doings and sayings. At this stage, any clip will do. The aim is to refine the analytical gaze by focusing on material practices and spatial relations in the clip.

When producing written accounts of the audiovisual data, I had to decide which details to include. The research question guided me to look for bodily movement and spatial arrangements, for example, to focus on the whole class or groups and not on individuals. The first transcription was relatively low on visual details. Repeated viewings, however, made the details and complexities of the action became more evident. Early on in this process, I noticed my habit of gravitating towards focusing on vocal conduct by, for instance, primarily transcribing verbal interaction. I also found it challenging to decentre the focus away from individuals in the classroom setting. To describe the materiality of the classroom, I wanted to shift my gaze to the relational, spatial and bodily arrangement and processes. One step towards this shift was to emphasise descriptions of movements and other spatial and bodily conduct

over verbal conduct. Also, I began to use words like ‘body’ instead of ‘student’ or ‘teacher’. In this sense, creating the transcriptions was a process of gradually building complexity while also developing a sensitivity to material practices of bodily and spatial action.

Next, I continued to view short video fragments from across the material, with the aim of creating a compilation or collection of *instances* of *types* of practices (Hammersley & Atkinson, 2019; Heath et al., 2010). When choosing instances to transcribe, I looked for episodes of teaching activities with contrasting characteristics. For example, I transcribed fragments from instances of group work, individual work and whole class situations. I also followed what I found interesting, choosing events or processes that appeared to ‘leap out’ from the data (Coffey, 2018), and then looked for contrasting events. For example, I was initially drawn to activity-packed moments of conflict, laughter, and lots of bodily activities. I then looked for a contrasting event where there were stillness, immobility, and silence. Another type of contrast was in the situations saturated with emotions and situations of apparent neutral atmosphere. Similarly, situations where the students were concentrated, or ‘on-task’, emerged as contrasting with situations where ‘off-task’ activities were the focus. Through this process of re-viewing, transcribing and connecting video segments from across the material, I was gradually becoming more familiar with the material.

I looked for patterns, regularities, and contrasts in the organisation of activities, aiming at getting variation, and I transcribed a series of short clips from a wide variety of spatial and bodily arrangements (Knoblauch & Schnettler, 2012). The growing compilation of transcribed instances served as ‘material to think with’ (Hammersley & Atkinson, 2019, p. 166). When I gathered these transcriptions of events, I gathered *candidates* of ‘instances of the particular phenomena actions or organisation under scrutiny’ (Heath et al., 2010, p. 65). Guided by the research question, I then tried to combine transcriptions of video segments by looking for new types of connections or contrasts between candidates of instances and grouping them with similar types of instances. This strategy was a nonlinear but valuable approach

to both broaden and narrow the frame whilst beginning to attend to the depth of detail and creating a collection of teaching situations to use during the analysis.

4.3.3 Thinking with theory

In this third phase, I spent more time with in-depth analysis and began to engage more actively with theoretical concepts. The strategy was framed by thinking the data *with* theoretical concepts (Mazzei, 2014). I read the collection of transcribed data while 'plugging in' theory. This was also a nonlinear process of narrowing and widening the focus as I moved between parts and the whole and between the particular and general (Delamont & Atkinson, 2021, p. 205). I switched between viewing the video corpus, reading theory, and engaging theoretical concepts with the transcribed data. I turned to different concepts and tried them out while reading the transcribed video fragments.

Theoretical concepts are a useful tool to shift the gaze and to produce analytical 'distance' and aided my experience of strangeness in ordinary teaching situations (Delamont & Atkinson, 2021). The entangling of the empirical data with different concepts from the sociomaterial framework produced new habits of seeing. Different theoretical concepts made possible different analytical questions and specific forms of analysis (Jackson & Mazzei, 2012, p. 5) and allowed specific relational engagements with the empirical material. For instance, employing the theory of *orientation* (Article 2) allowed me to focus on the 'inner work' of the practices, while the concept of *apparatus* (Article 3) allowed me to change my focus to explore the relations between practices. The theories thus worked as analytical tools that enabled me to write about the complexities and patterns of the material and relational organisation of classroom practices (Delamont & Atkinson, 2021, p. 66).

In ethnography, analysis and writing are inseparable processes (Atkinson, 2020). One analytical strategy I used in the writing process was to select episodes that illustrated the main *types* of practices that I had conceptualised, for instance, the practice of friendship. I then wrote these episodes into the articles as vignettes capturing the key features of that practice. Furthermore, the vignettes were framed within longer

narratives, containing context and evoking atmospheres (Hammersley & Atkinson, 2019, p. 206). The construction of vignettes and fieldwork narratives allowed me to elaborate on the analytical process in the articles and to make visible to the reader the strong interwovenness of the theory and the empirical data. The aim of these close readings and rich descriptions of the empirical events was to make the analytical process transparent (Savin-Baden & Major, 2013). While a central criterion for quality in qualitative research is to make the research process as 'transparent' as possible, the idea of transparency poses some challenges for this research project. These challenges will be discussed in the sixth chapter of this extended summary.

4.4 Ethical considerations

The ethical work of this thesis was informed by the national guidelines for ethical research conduct provided by National Research Ethics Committees (NESH, 2016). Respecting human dignity and autonomy are key principles for conducting social research. Individuals have the right to choose whether or not to participate in research and should be informed so that they can make that decision with knowledge about what the research engagement involves (Gallagher et al., 2010). However, these principles are not so easy to put into practice. For instance, while I was conducting the fieldwork, the ethical principle of informed consent provided me with some dilemmas, and it made me reflect on how to engage not only with pre-fieldwork consent but an in-fieldwork and post-fieldwork practice of consent. This process is discussed in Article 1.

Another important principle relating to protecting the participants' integrity is processing personal information confidentially (NESH, 2016), and this is connected to legal perspectives and the right to privacy and data protection (NSD, 2020). Visual data, such as video recordings, render participants identifiable and are regarded as identifiable personal information. The project adhered to data protection requirements from NSD (2020). To maintain the participants' confidentiality, I ensured that access to the recorded material was restricted to me only and that the video files were kept on an encrypted disc throughout the project (Derry et al., 2010; Heath et al., 2010). I

informed the participants of the way that the data was stored and that the recordings would be deleted at the end of the research project.

The topic of anonymity is another issue connected to considering participants' integrity (NESH, 2016). In the information I gave to the participants, I explained that the collected material would be anonymised so that participants would not be identifiable. In the transcriptions, I changed the names of participants to 'student 1/2/3' and 'teacher', and I also avoided detailed descriptions of the school environment (Derry et al., 2010; Heath et al., 2010). Hence, when writing the articles, I balanced the need for transparency and detailed descriptions of situations, people and locations with my duty to maintain the participants' anonymity and confidentiality (Nespor, 2000a).

In educational ethnography, it is impossible to uphold 'internal' anonymity (Walford, 2018). For example, the students or the teacher that had participated in the study might recognise or remember situations, and the identity of another participant due to, for instance, the described relationships or personal characteristics (Smette, 2019). To promise total anonymity is, therefore, ethically problematic. A challenging ethical balance was, therefore, to keep the descriptions of situations and context-rich enough in detail whilst avoiding, as much as possible, making the participants identifiable to each other. One consequence of this ethical balancing was that I omitted some classroom episodes from the public articles since they included more memorable situations and, therefore, could reveal specific individuals.

At the time of the articles' and the thesis' publication, the students had left the school. According to Smette (2019), teachers participating in research are often as vulnerable to issues connected to internal anonymity as the students because they are likely still working in the same school. However, since the interest of this research project is the mundane, everyday group-level activities of the classroom, and the theme of the research was non-sensitive, the risk of damage, in this case, is low.

5. Summary of the research papers

In this chapter, I present the main findings from this thesis by summarising each of the three articles. In the three articles, I explored sub-questions of the overarching research question for the thesis: *Which material-discursive practices 'matter' in the upper secondary teaching situations?* The articles are presented in the order they were written. I will discuss these findings and their implications in Chapters 6 and 7.

Article 1

Klykken, Fride Haram. 2022. Implementing continuous consent in qualitative research. *Qualitative Research* 22 (5)

The first article concerns the ethical practice of informed consent when conducting qualitative research in an upper secondary classroom. The underlying premise of the article is that a research project's operationalisation of informed consent should align with its overall epistemological framework. Most qualitative researchers consider the research process as a continuous co-production. Therefore, the article explores ways of approaching informed consent as a situated and relationally constituted process. The main question is: *How can we approach 'knowledgeable' consent from a relational and processual understanding of social research?* The article is based on ethnographic material of everyday upper secondary teaching situations and ethical reflections on my decisions before, in-field and after I had completed the fieldwork. Theoretically, this article is framed by relational ethics, and in the discussion, I draw on the concepts of response-ability and thinking with care.

The main contribution of Article 1 is that it reflects on how informed consent was used as a reflexive and ethical tool throughout the inquiry, including its pre-fieldwork, fieldwork and post-fieldwork phases. Another contribution is the conceptualisation of a continuous, situated and relational approach to informed consent. I argue that researchers can better align their ethical responsiveness with their relational and processual understanding of qualitative research by using *explicitly and implicitly (re)negotiated consent and dissent* strategies.

Article 2

Klykken, Fride Haram. [2021]. 'Are *we* going to do *that now*?' Orientations and response-abilities in the embodied classroom. *Pedagogy, Culture & Society*.

The second article investigates the material production of teaching, specifically how teaching emerges as the performative effect of spatial and bodily processes. This inquiry is guided by the following research question: *How do spatial and bodily processes produce teaching as a phenomenon*? The article analyses the video-ethnographic material from upper secondary teaching situations. In the theoretical framework, I draw on Sara Ahmed's theory of spatial politics, particularly the concepts *affect*, *orientation* and *alignment*.

Article 2 shows how the teaching situation was materially constituted by bodies, things, spatial arrangements, and the social and material room for relational engagement. The collective direction of the class was contingent on explicit and implicit rules and routines. The article demonstrates how different situations' spatial organisation provided different rooms for the students' movement and social connections. While the teaching situations regularly changed the configuration regarding affordances and restrictions, the students appeared to expect (and expect to be expected) to adjust to the shifting body possibilities.

The main contribution of Article 2 is that it shows how the bodily and spatial practice of aligning with *the local configuration of response-abilities* was a recurrent material practice that constitutes the teaching situations. The practice of orientating towards the local boundaries for legitimate school 'doings' exerted a significant influence on the bodies of the upper secondary classroom. However, while the students in the class shared and re-enacted this practice, they also translated it and resisted it. The practice was thus simultaneously shaping whilst also being shaped by bodies.

Article 3

Klykken, Fride Haram. [under review]. The teaching apparatus: A material-discursive entanglement of tasks and friendship in the upper secondary classroom. *Critical Studies in Education.*

The third article explores the material production of teaching, specifically, the emergence and influence of multiple material-discursive practices in the upper secondary classroom. The article asks the following questions: *Which material-discursive practices 'matter' in the upper secondary teaching situations, and how are participants' bodies shaping and being shaped by these practices?* The empirical material analysed in this article is the video-based ethnographic account of everyday upper secondary teaching situations. The theoretical framework combines the sociomaterial concepts of *material-discursivity, practices* and *apparatus.*

Article 3 shows how the upper secondary students' and teacher's interacted and how practices gained direction from the everyday material interaction with an array of bodies, spaces, things, and technologies. The main contribution of this article is that it portrays two distinct material-discursive practices and how they emerged and co-operated in the classroom.

In the fieldwork, the upper secondary students embodied a routine of collectively directing their attention to the 'rules' or 'the right way' to enact the given task. *The practice of tasks* represents how the students habitually orientated towards the boundaries and responsibility for 'doing' that was integrated into each new task-request. The configuration of each teaching situation provided directions for the students' location and interaction. For instance, we see how the task of 'following the lecture' generated very little physical movement from the students, while the task of 'writing on the whiteboard' generated a wide range of movements and connectivity. *The practice of friendship* represents how the students habitually orientated towards the moment-to-moment possibilities for friendly connectivity. The local configuration of friendly alignments affected the students' possibilities and restrictions for movement and relational connectivity in the classroom. The article's discussion articulates the relation between the material-discursive practices of tasks and friendship, and argue that these two practices entangle to co-perform a larger material

arrangement, termed *the teaching apparatus*. Furthermore, the article propose that the notion of a spatial, bodily, and relationally constituted teaching apparatus contributes to current debates on teaching quality.

6. General discussion

This chapter has two main sections. The first section addresses methodological challenges regarding research quality and ethics and revisits the first article. The second section discusses the material-discursive production of teaching by revisiting the findings in the second and third articles.

6.1 Methodological challenges and contributions

When discussing the scientific quality and value of research, qualitative researchers often highlight methodological transparency, reflexive integrity, and ethical considerations (Savin-Baden & Major, 2013). I have previously addressed these topics in the three articles and Chapter 4. This section will continue the discussion regarding research quality and address some challenges of aligning qualitative criteria with the research project's theoretical-methodological approach (Calderón Gómez, 2009).

6.1.1 Research quality

Within the qualitative research tradition, one of the key strategies to document the quality of research is to present the researcher's role, the research process, and the findings in a 'transparent' manner so that the reader can evaluate the research's trustworthiness (Savin-Baden & Major, 2013, p. 479). For instance, when representing the research project in this thesis (Chapter 4), I provide dense descriptions of the methodological, theoretical and analytical process to clarify the process for the reader. Following the thesis' sociomaterial framework, representations are not separate from the objects they seek to represent. I cannot view the research results or process as 'mirroring' or 'corresponding with' particular objects or pre-existing knowledge that can be 'extracted' from the world. Leaving the concepts of transparency and reflexivity unexamined would be problematic since their underpinning assumption is that an account will transform into 'scientific truth' if it includes a 'confessional account' of the research methods (Finlay, 2002, p. 224).

'Unpacking' the research practice

Haraway (1997) argues that reflexivity and reflection 'only displaces the same elsewhere' (p. 12) and proposes a *diffractive* approach to critical practices in research. Diffraction is a concept from quantum physics and means the production of interferences or 'difference patterns' as a wave or a ray of light hits an obstacle (Haraway, 1997, p. 268). Barad (2014) explains diffraction as an agential cut that simultaneously creates separation and entanglement by 'cutting-together-apart' (p. 176). Research practices such as self-reflection and providing a transparent account of the process emphasise the existence of independent subjects. Diffraction emphasises that subjects and objects are entangled (Bozalek & Zembylas, 2017).

The research is a relational engagement that joins the world's larger ongoing relational becoming (Serra Undurraga, 2021). Rather than seeing this thesis as disclosing or representing a pre-existing phenomenon, I consider this project's knowledge construction an *additive* process (Nicolini, 2012). As I engaged with the world through this project's research process, I did not create reflections of the process but new entanglements from within the world's inseparability (Barad, 2014). Similarly, my re-presentation of the research process should be understood as an affirmative and creative engagement (Bozalek & Zembylas, 2017), hence a 're-turn' that produces something anew.

Barad (2007) argues that the different configurations of a (research) apparatus will generate different forms of knowing. Hence, the employment of theoretical and methodological tools are active and operative parts of the research project as material-discursive forces. The research adds to the world by constructing a device for researchers and readers to connect to and think with. As a researcher, I am inevitably an active part in 'doing' the phenomenon I study. By interfering, I have the ethical responsibility to be attentive to the differential consequences of this research entanglement (Bozalek & Zembylas, 2017). Aligning with this perspective thus requires a detailed observation of the research practice itself. In this thesis, for instance, in Article 1, the pre- and post-fieldwork events are part of the phenomenon studied.

There are no neutral methodological approaches, and whatever strategies are chosen for engaging with the field shape the research knowledge production (Kuntz & Presnall, 2012). The way that I conducted this research project inevitably enacts a broad range of exclusionary practices and orientations (Juelskjær et al., 2020). A research report's legitimacy and quality are connected to how it studies and accounts for the knowledge production within the research processes, not just the empirical field. Therefore, there is a need to address how this thesis's knowledge claims are articulated and made meaningful. In this sense, the work on transparency and reflexivity by providing detailed information about methodological choices, fieldwork and analysis remain relevant. It is, however, important to acknowledge them as active and operative parts by 'unpacking' their sophisticated work and performative effects (Fox & Alldred, 2015)

This thesis's knowledge claims have been articulated and stabilised through engaging with qualitative conventions and textual practices of ethnography. Therefore, in the following, I will discuss how the conventions of *ethnographic writing* and *theoretical articulations* are two examples of boundary-drawing practices at 'work' in this thesis.

Ethnographic writing

Ethnographers construct the 'results' from their empirical engagement through the activity of writing (Atkinson, 2020). The evaluation of the quality of this present ethnography is a relational process enacted through both writing *and* reading. For instance, I engaged in ethnographic method literature in my writing process. Peer reviewers and supervisors also evaluated the quality by reading my papers. Literary forms and textual conventions are performative enactments that attach 'credibility, plausibility and validity' to research (Atkinson, 2020). I have engaged with many textual genres throughout this research project, for instance, by writing field notes, transcriptions, analytical sketches, research articles, and this thesis (Jeffrey, 2018).

Furthermore, creating claims of authenticity is closely tied to conveying the findings in a convincing and persuasive manner (Jeffrey, 2018). I have, for instance, engaged with the ethnographic ideal of creating rich accounts of the empirical events in the

findings and writing from the field with ‘explicitness, vividness, creativity, thoroughness, congruence and sensitivity’ (Savin-Baden & Major, 2013). Another literary form I used is vignettes, which are telling illustrations, narrative explorations, or compact sketches (Ely et al., 1997, p. 70). Detailed descriptions are also powerful, relational resources through which ethnographic works establish their scientific plausibility and credibility (Atkinson, 2020). These literary forms and textual conventions are practices of normative values and ideas that do performative work. In other words, the ethnographic ideals and practices of ethnographic writing were an ‘active’ material-discursive force shaping the current thesis and its findings.

Following the sociomaterial perspective and the ethnographic tradition, I view research knowledge production as context-specific, partial and positioned (Hasse, 2015). The way that I have written this ethnographic account brings forward some aspects of the social phenomena under study, which means there are always some versions of the story left untold (Hammersley & Atkinson, 2019). There are always other ways that I could have engaged with the field and created this thesis. One example of this is how I, in this research project’s analysis, focus on the upper secondary classroom's bodily, spatial and relational processes. The way I have written this empirical account emphasises descriptions and interpretations of the group interactions. I have, for instance, included detailed descriptions of the student group’s spatial movements and, consequently, excluded stories about individual students. Additionally, focusing on material aspects, such as spatial and embodied processes, means I have focused less on verbal interaction.

As an article-based thesis, the genre of ‘scientific journal paper’ and its conventions have influenced the style and the form through which I present the thesis’s findings. For instance, word limitations, text form requirements, and procedures of peer review are examples of restricting and enabling forces nesting within this research project. As such, this thesis’s written material has been shaped by the textual conventions and processes of constructing narratives through journal articles (Jeffrey, 2018).

Knowledge claims as theoretical articulations

The production of theoretical articulations is central to creating legitimate ethnographic 'knowing' (Coffey, 2018). Within this context, to *theorise* means to extend beyond the empirical data to develop, use and test ideas in a way that enables 'further engagement with the field of study' (Coffey, 2018, p. 89). The theoretical work of this thesis involved connecting ideas and structuring and articulating these connections by writing narratives. For instance, as explained previously (in Sections 3.3 and 4.3.3), I developed the theoretical framework though engaging it with the empirical material. Through this process, the project's empirical data and the theoretical framework were both challenged, and this reciprocal process prompted changes provided new ways of thinking about the phenomenon of study.

Ethnographic writing and theorising are actions that open up and 'diffract' data, extend knowledge, and connect with other ideas (Barad, 2007; Coffey, 2018). Similarly, Nicolini (2012) draws on Isabelle Stengers' argument, to state that good social science articulates connections. Whether something is 'good science' thus depends on if the proposition makes us more *articulate,* meaning 'that we can make new and enlightening connections between things of the world' (Nicolini, 2012, p. 216). By increasing our capacities to recognise and articulate connections and differences in the making, we (as a society) gain a better understanding of the world, which enables us to act (or withhold actions) in a more informed way (Nicolini, 2012).

Following this, a criterion for research quality is based on how the research's arguments articulate connections. Consequently, this notion of research quality privileges a generative, relational and additive account, as Nicolini (2012) argues: 'Thicker, not thinner, descriptions are the aim of good social science' (p. 215). However, this criterion requires the research to engage with 'risky entanglements and interdependencies' (Stengers, 2021, pp. 87-88), and it is important to acknowledge that research is necessarily both incomplete and productive (Jackson & Mazzei, 2012). Therefore, in the remaining sections of this chapter, I will discuss and expand upon how this thesis articulates connections.

6.1.2 Research ethics (revisited)

In the first article of this thesis, I combine the ethical principle of informed consent with the principle of relationality. I discuss my use of informed consent as a reflexive and ethical tool throughout the research process by using strategies of explicitly and implicitly (re)negotiated consent and dissent. The article provides empirical insight into challenges and possibilities for how research ethics can be conducted as a situated, reflective, and relationally attuned ethical labour (Busher & Fox, 2019). By highlighting important ethical challenges regarding fieldwork, the thesis contributes to the literature on research ethics in educational ethnography. Furthermore, the arguments are also relevant to the field of qualitative research more broadly. The article suggests ways to navigate and evaluate a practice of informed consent that is aligned with the understanding of qualitative research as a relationally constituted enactment.

In this thesis, I approach both the research and the phenomenon of study as intrinsically interwoven material processes (Fenwick et al., 2011). There are some ethical tensions tied to emphasising material relations and practices, as it emphasises the 'human subject' as an assemblage (Braidotti, 2019) rather than individual subjects. Kouppanou (2022) has argued that exaggerating materiality and interconnectedness may obscure some power relations, for instance, the asymmetry between researchers and research subjects, and students and teachers.

I consider this an ethical challenge that I encountered in my work on this thesis since it builds on the understanding, for instance, that the boundaries of the research relationship are a co-creation (Article 1). According to Juelskjær et al. (2020), when we conduct research, its 'knowledge production contributes to producing realities' (p. 143), and, therefore, we need to 'intra-act responsibly' (p. 144). Consequently, I am accountable for this research account and its co-creation. On the one hand, I argue that there are no inherent boundaries between research and educational practice and, consequently, no boundaries between me as a researcher and the research subject. On the other hand, in Article 1, I also contend that the research relationship remains an asymmetrical engagement, where the ethical responsibility for the research

relationship lies with the researcher throughout and beyond the project (Beach & Arrazola, 2019).

Bargetz (2019) points to another danger of employing a posthuman sociomaterial perspective. She cautions that in posthuman accounts of relationally constituted agency, the mechanisms of 'relations power, domination and inequalities' remain 'un- or undertheorized' (p. 189). Following Bargetz's (2019) argument, by taking a posthuman approach, I risk that this thesis disregards important critiques of how political agency is attached to human beings and institutionalised power structures. Furthermore, Bargetz (2019) argues that such research accounts run the risk of producing an 'optimistic', affirmative account of 'creativity, dynamism and excess'.

In this thesis, I place the analytical gaze on the material and collective relationalities of the classroom. Therefore, I recognise that the present thesis may be critiqued for understating topics relating to, for instance, power asymmetries, inequality, and institutionalised power structures. For instance, the three articles may be seen to create an 'optimistic' account of a deceptively harmonious classroom. As previously explained (Chapter 4), this classroom appeared to be relatively peaceful. For instance, both the teacher and students of this class stated that they considered their relationship to be good. However, the teaching situations were by no means not friction or conflict free, as there were plenty of social tensions, exclusions, disagreements and communication breakdowns. A challenge for researchers studying the complex work of teaching is to remain attentive to the fact that something will always get excluded (Fox & Alldred, 2017). This research project's focus on bodily and spatial relations and on the collective direction of attention is likely to have blurred out a whole range of conflicts and thus not (directly) addressed such power imbalances.

Highlighting participants' relational power while acknowledging their need for protection has been an ethical tension running through my work in this thesis. As seen in Article 1, carrying out research is a careful balancing of considering participants' capacities and vulnerabilities. Nevertheless, a strength of this relational

and performative approach to research is that it has allowed me to address and trouble taken-for-granted structures and hierarchies in teaching as well as research. As argued by Schulz (2020), by always positioning research participants as vulnerable, researchers can contribute to reproducing the existing hierarchies of power. This thesis's analysis has brought to the fore events where the traditional hierarchies are challenged or inverted. I argue that destabilising the taken-for-granted boundaries of the researcher/participant (and teacher/student) can create knowledge about power structures. Focusing on relational agency instead of human agency can thus contribute to knowledge about the ways inequalities and hierarchies are maintained (Frers & Meier, 2022). Moreover, addressing and problematising the taken-for-granted mundane material relations may critically address and trouble asymmetrical power relations in more subtle ways.

6.2 The material-discursive production of teaching

In this section, I will articulate connections across the PhD thesis by highlighting and discussing the thesis's contribution in relation to its aim and research questions. This thesis explores teaching as a materially and relationally constituted phenomenon. The overarching research question for the thesis is: *Which material-discursive practices 'matter' in the teaching situations of a Norwegian upper secondary classroom?* As this study's findings have shown, multiple material-discursive practices are involved in producing the phenomenon of teaching. In line with the theoretical implications of the term, when I ask *which* practices 'matter', I am also inquiring into *how* these material-discursive practices materialise in teaching situations.

In the following, I argue how 'teaching' as a phenomenon can be seen to emerge through three different relational 'cuts':

1. bodily and spatial enactments (Articles 2 and 3),
2. inter-involvement of multiple practices (Articles 1 and 3),
3. embodied and embedded apparatus (Article 3).

I will use these three different relational 'cuts' as entry points to discuss how specific sets of relations contribute to the configuration and trajectory of the teaching

apparatus (the material-discursive becoming of 'teaching'). Furthermore, I will also use these points to connect the thesis' findings to the broader discussion on the materiality of teaching.

6.2.1 The production of teaching through bodily and spatial enactments

The second article of this thesis maps the relational dynamics of a sequence of fieldwork episodes and shows how bodies moved through different spatial arrangements with increased or decreased embodied energies and relational and affective connectivity. The vignettes show how corporeal exchanges had a continuous presence in the classroom through loud or quiet alliances, playful games, glances, looks for approval, disagreements, and disconnections. The article also describes how the spatial organisation, furniture and technologies guided the students' relational affordances and connectivity.

The article's activation of the theoretical concepts of alignment and orientation (Ahmed, 2006) was a fruitful way to address the spatial politics of the fieldwork episodes. The analysis shows one recurring spatial and embodied orientation within the classroom. The upper secondary students re-enacted a bodily and spatial routine of directing their attention to the 'rules', or the boundaries, for 'doing'. I argue that the students engaged in a shared alignment by re-enacting and thus stabilising this pattern of orientation in the classroom. Furthermore, the students appeared to be 'experts' at orienting to and aligning with the duties and rules of the teaching activities. Moreover, I argue that the materialisation of 'teaching situations' occurred through this habituated and relationally enactment of a practice of aligning with the local configuration of response-abilities.

This argument adds to a growing body of literature that argues how bodies and their affective capacities 'matter' in pedagogical encounters and classroom enactments (Mulcahy, 2012a; Zembylas, 2007). Reckwitz (2017) describes that as bodily senses and perceptions take directions, this direction organises the attention in particular ways, generating affective practices through 'explicit norms of attention' (p. 120). The notion of schooling as a type of directedness is in accordance with a field of

literature highlighting how schools and classrooms re-enacts ‘a technology of attention’ (Snaza & Sonu, 2016) and the different ways that educational body-space choreographies give ‘directionality to pedagogy’ (Taylor, 2018, p. 163). Moreover, Article 2’s arguments strengthen the idea that everyday teaching situations are embodied and affective processes with performative and normative effects (Dernikos, 2020; Åberg & Hedlin, 2015).

In the fieldwork, an important agential nuance became visible in how the student bodies were not merely ‘orchestrated’ into taking directions by their environment. Instead, the article shows how the students, and the teacher, were constantly using their bodies, enacting specific spatial relations, taking up space, tuning in to, transforming, and resisting practices. Through their enactment in the situated body possibilities, human bodies were important and influential relational ‘components’ of the teaching situations. The students actively and strategically enacted the relations of the everyday upper secondary classroom. According to Gherardi (2021), practitioners' ability to creatively negotiate and use the context as a relational resource to articulate connections can be described as a form of *knowing-in-practice* (Gherardi, 2021). In this thesis, the upper secondary students thus emerged as important and knowledgeable practitioners within the teaching constellation.

This notion of bodily and spatial strategies and alignments may be critiqued as emphasising an individual human-centred embodied and spatial intentionality and creativity. However, as students co-created and shaped how they performed ‘school’, their agency was always contingent and embedded in connections and relations. According to the theoretical framework, human bodies are not considered separate, individual entities. Instead, human bodies are part of relationally assembled ‘subjectivities’ (Braidotti, 2019). Although the spatial politics of the classroom formed the students’ relationships, they simultaneously strategically reshaped and manoeuvred the body possibilities. Consequently, this thesis does, as argued previously, install the possibility for a type of contingent ‘human’ capacity to emerge through sociomaterial relations and (dis)connections (Braidotti & Hlavajova, 2018).

Importantly, the second article's argument emphasises how bodies actively co-enacted these situations are considered *the* materiality of the classroom. Hence, the recurring spatial and embodied orientation *enacted* a material-discursive becoming of 'teaching'. Spatiality and embodiment were what the teaching situation was made *of.*

6.2.2 The production of teaching through the inter-involvement of practices

Article 3 shows how there was not only one but two different directions of attention within the classroom. The embodied, affective alignment to the duty and responsibility of 'doing school' was densely saturated with the affective alignments of friendship. The students were, in other words, not only engaged in understanding and negotiating what actions 'count' as 'doing the task'. The collective, habitual orientation was also directed to the restrictions and allowances for 'doing friendship'. Both practices were an active part of creating and negotiating the situated body possibilities in each pedagogical engagement.

The material demarcation of the practice of tasks further strengthens the idea that 'school time' and 'school space' emerge from bodily and spatial relations, for instance, as shown by Vanden Buverie and Simons (2017), how boundaries are re-enacted through preserving specific teachers' and pupils' *regions* (Sørensen, 2009).

Another important insight is how the practices of tasks and friendship are in continuous, reciprocal entanglement. In the classrooms, personal and school subject-related actions were continuously interweaving. Within seconds, students' conversation about a task could swiftly transform into playful or friendly talk and then return to work on the task. This interweaving was also seen through on-screen interactions (See Article 1). In ethnographic studies on peer learning (H. Riese et al., 2012) and class management (Plauborg, 2016), researchers have also contended that academic tasks and social relations are interdependent and intra-acting. In most literature, however, social and peer relations are often considered supporting or motivating factors for learning (H. Riese et al., 2012).

Nespor (2004) argues that school systems and institutions attempt to impose fixed or official educational *scales* for regulating and measuring students' performances. Scales are spatial and temporal ordering forces at 'work', producing students' and teachers' identities. However, as Nespor's other studies also have shown, the actual boundaries of schools are fluid and porous (Nespor, 1997, 2000b). School spaces and events are extended, connected to and calibrated by events and spaces elsewhere. Nespor (2004) contends that there are alternative spatial and temporal scales (e.g., family roles) in addition to the dominant scales (e.g., state-defined standards). However, the alternative scales are often overlooked and, as Nespor argues, at risk of being hidden or erased by the dominant scales.

I argue that this thesis's construction of material-discursive practices of tasks and friendship resonates with Nespor's (2004) conceptualisation of spatio-temporal scales. I understand, for instance, the practice of friendship as such an alternative spatial and temporal order at 'work' in the classroom. As the students were orientated to peers and to friendly connections, the practice of friendship can be understood to have enacted a 'measurement' that produced students' movements and capacities to interact. Furthermore, I also understand the practice of friendship as a force that permeates the boundaries of the classroom and connects it to spaces beyond the school.

The analytical work of Article 3 brought to the fore two recurring material-discursive practices in the upper secondary classroom: the orientation towards the given rules of the next task and the orientation towards the local rules of friendship. Practices of tasks and friendship were stable ways of 'doing', and these practices emerged from bodily and spatial activities. Furthermore, the relational affordances of each teaching situation depended on the 'local' relational configuration of the material-discursive practices (Barad, 2007). As such, the material-discursive practices of tasks and friendship overlapped or interfered with each other. For instance, sometimes the schoolwork provided opportunities for the students to be nearer their friends. Friendly engagements also enabled students to carry out school tasks. As they intra-acted, the two practices produced more complex boundaries for bodily doings and sayings.

An important contribution of the third article is that it emphasises how the material-discursive practices of tasks and friendship were material members of the teaching situation. The practices were co-constituting the material trajectory of the teaching situation by actively directing bodies and their attention and engaging in relations. Moreover, these material-discursive practices were what the teaching situations were made *of.*

6.2.3 The production of teaching through the embodied and embedded apparatus

Through this thesis, I have developed a conception of *the teaching apparatus.* Each enactment of the teaching apparatus contained a number of material entities, bodies and practices, and they engaged in a variety of relations. By thinking about teaching this way, I understood that 'teaching' is co-performed by the entanglement of task and friendship practice. As the above sections have shown, the trajectory of the teaching apparatus emerged out of this co-enactment. Furthermore, the two material-discursive practices were configured by the intra-action of bodies and spaces of the classroom.

The findings of this thesis show how the capacity to act was produced relationally. While no single 'actant' controls the teaching apparatus, all its material members contribute to its trajectory. Thus, the relationalities of students' and teachers' bodies and the classrooms' spatial and material practices of tasks and friendship were all part of creating the 'real' trajectories of the teaching apparatus inter-connecting becoming. Thus, the material configuration of the classroom 'mattered'.

This thesis's findings place spatial and bodily processes in the heart of the relational becoming of the teaching apparatus. Therefore, a vital contribution of this thesis is the conceptualisation of a teaching apparatus. The concepts allow us to map the complex processes and the performative effect of teaching while considering its bodily and spatial embeddedness. This thesis' findings thus suggest some of the ways that the physical and temporal organisation of everyday school encounters have implications for students and teachers and the overall orientation of the teaching apparatus.

The teaching apparatus allows us to notice the embodied inter-connectedness of everyday pedagogical encounters. Thinking further, we can consider the possibility of many more material-discursive practices constituting the teaching apparatus. In this sense, thinking with the concept of the teaching apparatus can increase our understanding of how multiple material-discursive force fields are 'at work' in the classroom.

As a concept, the teaching apparatus also allows us to speculatively expand and create networks of practices apparatuses and assemblages with the findings from others. Examples of other research that we can combine and connect this thesis' teaching apparatus to are, for instance, the learning apparatus (Simons & Masschelein, 2008), practices of feedback (Gravett, 2020) and educational readiness (Nielsen et al., 2022), as well as discourses of control and predictability, effectiveness (Osberg & Biesta, 2010), and class (Mulcahy & Martinussen, 2022). In this sense, I consider the research field as continuing to collectively create an open-ended map of multiple educational practices as a larger heterogeneous assemblage (Roehl, 2012a; Sobe & Kowalczyk, 2017; Strom, 2015). I also contend that this thesis strengthens and adds to this collective effort by conceptualising a teaching apparatus constituted by spatiality and bodily processes as agential forces.

7. Conclusion and openings

I will conclude this thesis by discussing its implications and connecting it to recent debates about teaching quality.

In the introduction, I mention that before starting this PhD I did not have the vocabulary to talk about the spatial and bodily processes of teaching. After my experiences from being in the field, reviewing recordings from upper secondary teaching situations, and having used the concepts of spatial politics, orientation and alignment, material-discursive practices and apparatuses, the work with thesis has given me, on a personal level, a bundle of valuable articulations to *think with* about the materiality teaching (Jackson & Mazzei, 2012).

Hopefully, this thesis' arguments can also be helpful for future teachers to think with. For instance, I believe that it is vital for teachers to understand friendship as a material-discursive force in teaching. Friendly connections did not just generate possibilities for the teaching apparatus. The teaching apparatus also generated possibilities for friendly connections. Therefore, as the teaching situation created friendly connections, it built and configured friendships. This finding resonates with other research accounts of friendship in a school context (Lahelma, 2002; Oswald & Clark, 2003). Thinking further, we can recognise that the teaching apparatus's configuration of friendship has consequences for students' life outside school. Therefore, I contend that insight into the significance and complexities of friendship in teaching may be one way to support teachers in their responsive and responsible engagement with young people in education.

This thesis also strengthens our understanding of how teaching practices are made up of intricate relations. Thus the findings of this thesis can be seen as adding to the 'complex turn' in teacher education and professional development (Strom & Martin, 2022). This field has, for instance, created accounts of teaching as an assemblage (Strom, 2015), teacher agency as intertwined in teaching assemblages (Heikkilä & Mankki, 2021), and the complexity of teachers' knowledge work (Nerland, 2022; Tronsmo, 2020).

A central argument in this thesis is that the material relationality 'within' the classroom is a key source of 'authority'. The thesis findings emphasise bodies and spaces as active parts of the material-discursive practices of the teaching apparatus. In other words, the local enactment of the teaching situation forms the trajectory of the teaching apparatus. Importantly, the apparatus' trajectory is in continuous evolution and negotiated collectively. Therefore, it is in each teaching situation that concrete, 'real' boundaries for action appear. Following this thinking requires us to characterise 'teaching' as a complex and unpredictable phenomenon. Adopting this processual and relational idea of 'teaching' thus invites the acknowledgement that no person, organisation or material-discursive practice can control the 'strategy' of the teaching apparatus.

This thesis' conception of the teaching apparatus is grounded in everyday vibrant, situated practices and their agencies, which challenge present discourses of 'good teaching' (Connell, 2009; Holloway, 2021). Debates about education and schools' purpose and quality have long centred on improving teaching practices (OECD, 2019) through standards for professional practice and student performance (Tolo, 2022). In the Norwegian context there is, for instance, an output-based curriculum, and standardised tests are employed to measure the students' learning outputs against these pre-defined goals (Meld. St. 21 (2016–2017)). In an international context, there has been a growing emphasis on standards through, for instance, debates on pre-defined best practices and evidence-based teaching practices (Biesta, 2015; Connell, 2009; Holloway & Larsen Hedegaard, 2021; Sullivan et al., 2021). Landri (2022) explains educational standards as 'normative specifications based on the temporary simplification of education' (p. 38). Critics argue that the weight placed on performative assessment reflects a narrow and instrumental view of teaching as an activity that produces 'specific learning outcomes as dictated by the policies' (Ro, 2021, p. 502).

This thesis's findings have underlined that no single actant can control the trajectory and, thus, the 'outcome' of the teaching apparatus. This argument highlights that it is problematic to assume that policy techniques have the capacity to 'control' or 'direct'

the trajectory of teaching practices. Furthermore, standards and their assessment are themselves relationally situated material-discursive practices (Madsen, 2021). By rethinking pre-defined standards with the teaching apparatus, we can imagine that, as these normative specifications 'enter' the classroom, through pre-defined learning outcomes and testing regimes, they will intra-act with a multiplicity of other material relations and practices. In each enactment, the enactments of standards may be, for instance, translated and shaped by the material-discursive practices of tasks and friendship in the day-to-day classroom.

However, the systematic routinising of teaching events that foregrounds students' performances (e.g., tests) is not without consequences (Nespor, 2004; Staunæs, 2018). For instance, as Holloway (2021) has argued, restricted ideas of teaching processes can conceal the rich plurality of everyday teaching situations and their material relationships. Thus, alternative ways of considering qualities in teaching may be muted. Not attending to non-standard notions of quality may, in turn, limit our imagination and curiosity about what teaching '*is,* and what it *can be'* (Holloway, 2021, p. 164).

This thesis has investigated the material complexity of teaching. I will conclude the thesis by inviting you to imagine the teaching apparatus as an alternative approach to 'measuring' teaching qualities. This approach to quality, as grounded and situated in the material relationality of the classroom, aligns with ideas of an *affirmative* (Braidotti, 2019) and *non-instrumental* theory of education (Osberg & Biesta, 2021). Through thinking with the idea of a spatially, bodily, and relationally produced apparatus, I believe we can consider the qualities of 'teaching' as embodied and embedded and emerging through the material relations of everyday teaching situations. This notion of quality as material relations assumes the materiality teaching not as a resource or a means to an end. Instead, this notion of quality reclaims material relations as the situated conditions that make educational practice possible.

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Article 1

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Implementing continuous consent in qualitative research

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Abstract

This article examines ways of approaching informed consent as a relationally constituted process in qualitative research practices. It argues that a researcher's operationalization of informed consent should be coherent with the overall epistemological framework of the project. Based on empirical examples from an ethnographic inquiry in an educational setting, the principle of informed consent is discussed as a reflexive and ethical tool throughout the inquiry, including its pre-fieldwork, fieldwork and post-fieldwork phases. Strategies of explicitly and implicitly (re) negotiated consent and dissent are discussed and illustrated by drawing on some of the recent discussions of continuous consent practices. The article's conceptualization of a continuous, situated and relational approach to informed consent is also supported by the concepts of *response-ability* and *thinking with care* in research ethics.

Keywords

Research ethics, reflexivity, informed consent, educational research, video ethnography, relational ethics, fieldwork relations

Introduction

Facilitating free and informed consent is a key ethical standard to consider when conducting social research. The principle of informed consent was formalized to help create research relationships that are founded on 'trust and integrity' (BSA, 2017) and aims to safeguard people's freedom to decide whether or not to participate in research. An important criterion for consent's validity is that an individual's decision is voluntary and based on clear, unambiguous information about what engagement in the research will entail. This recognition of participants' free will has been incorporated into ethical guidelines and regulations in many countries and institutions (Beach and Arrazola, 2019). The background for regulating ethical procedures is histories of harmful, covert research,

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which disregarded research participants' integrity and judicial rights, within both medical and social research (Wiles, 2013).

When qualitative researchers attend to and discuss informed consent, emphasis is often on the recruitment phase, before the fieldwork or data collection has begun (Gallagher et al., 2010). In this phase, researchers obtain formal access by sharing information and soliciting individuals' consent to participate in the research project. Researchers' reflexive accounts of the practice usually focus on how each individual participant's decision has materialized in the form of a written contract. Such ethical evaluations include discussions of who is capable of consenting and how much information was given and in what form during this initial phase (Alderson and Morrow, 2011). The recent changes to EU regulations on data protection (Regulation (EU) 2016/679, 2016) have contributed to increased emphasis on contractual agreements of consent during recruitment. Critics argue that this practice is insufficient for governing people's integrity and freedom when taking part in qualitative research (Connor et al., 2018; Smette, 2019). Some have cautioned that in specific cultural and socio-economic contexts, signing contracts might involve insecurity, suspicion, fear or exclusion for participants (Wynn, 2018). Challenges with written informed consent for participants who do not have the capacity to consent themselves have also been discussed (e.g. Heath et al., 2007). Others have argued that the main function of informed consent is to document the researcher's plan to protect participants' privacy and thus to legally protect the researcher and their affiliated institutions rather than the participants (Gallagher et al., 2010; Homan, 1991).

This article will reflect on and contribute to the ongoing debate about the role of informed consent in qualitative research. Drawing on my own experiences from conducting a participant observation study, I will discuss how my learning throughout the research process caused me to rethink my understanding of informed consent. The article explores how we can sustain knowledgeable and voluntary involvement in research participation. I begin by drawing up an epistemological argument for the need to reconsider the current consent practices in qualitative studies. This highlights an overlap between the type of knowledge a research study is designed to produce and the perception of knowledge that is inherent in the understanding of informed consent in the respective study. Next, the article describes the research project on which the discussion is based. Then, drawing on empirical examples from the study, the article explores ways of approaching informed consent as a processual and relational practice. Potential ways of using the principle of informed consent by applying the ethical concept throughout the inquiry are then discussed, including its pre-fieldwork, fieldwork and post-fieldwork phases. A practice of continuous, situated and relational approach to informed consent is conceptualized, supported by the concepts of *response-ability* and *thinking with care* in research ethics (Busher, 2019; Puig de la Bellacasa, 2017).

Why do qualitative researchers need to reconsider current practices of informed consent?

Informed consent represents an ideal for research conduct in which the people taking part in a study have a clear understanding of the research project and its risks, including what the researcher is doing in the field. The principle thus indicates that researchers should

share relevant knowledge with participants when inviting them to participate in the research. In this sense, the concept of informed consent is inherently connected to assumptions about how knowledge is created. The formalized standard of informed consent is often described in terms of *giving* information to and *obtaining* consent from research participants. These expressions indicate that increased understanding is a result of a transfer of information. Furthermore, the criterion of soliciting consent at one specific point in time, in the form of a signed contract, suggests that knowledge is contained and remains stable once integrated. For this reason, a strategy for consent based on standardized criteria is intimately tied to a perspective on knowledge production as a transaction between individuals (Cargill, 2019). In contrast, the majority of contemporary qualitative frameworks take the stance that research knowledge is developed within the context of a human-to-human relationship (Denzin and Lincoln, 2018). Rather than a static and individualized product, most social research considers knowledge to be developed throughout the research by a social collective that includes the researcher and participants. Ultimately, such an epistemological stance recognizes knowledge as co-produced, processual and situated in particular relational practices (Beach et al., 2018; Brinkmann and Kvale, 2015).

Following this, conducting qualitative research whilst adhering to the standardized practice of informed consent means relating to two dissociated frameworks for knowledge production (Dennis, 2019; Guillemin and Gillam, 2004). Even though the inconsistencies between the two are evident, both require researchers' engagement and consideration. Several authors have discussed the challenges that emerge as a result of their incompatibility (Connor et al., 2018; Heath et al., 2007; Okyere, 2018; Perez, 2019; Roulet et al., 2017; Smette, 2019). One example is that when juggling procedural ethics and the particularities of micro-ethics as two separate practices, the researcher may end up treating informed consent as 'a necessary evil, instrumental in nature, separate from research itself' (Hamilton, 2009: 86), performed only to satisfy institutional and legal obligations. Furthermore, the legally required and easily available prescriptive standards may automatically become the primary ethical focus, with the risk that future researchers will choose only a minimal, anticipatory engagement with the principle of informed consent (Hammersley, 2009). By leaving the antecedents of ethical standards unchallenged and the micro-ethics unattended to, we risk losing sight of important in situ relational work (Traianou, 2019) and end up diluting the participants' human right to integrity in our research (Heath et al., 2007).

There appears to be a growing awareness in the field of qualitative research that the current individualized, pre-fieldwork practice of informed consent is insufficient (Delamont and Atkinson, 2018). An important task for ethical research is, therefore, to explore meaningful ways of connecting the two spheres (Gillam and Guillemin, 2018; Stutchbury and Fox, 2009). This article expresses apprehension about the reductive potential of standardized, anticipatory ethics. It explores potential ways to account for researchers' responsibility to protect participants' integrity when initiating research relationships. With the acknowledgement that research knowledge production is a joint and ongoing activity, what concrete paths can be taken to work towards and account for informed consent as a more integrated part of qualitative research? The scope of this article is, therefore, to connect ideas of research as a co-constituted and situated practice with the principle of informed consent: How can we approach 'knowledgeable' consent

from a relational and processual understanding of social research, acknowledging that informed ethical decisions are not made in isolation, but take place as a continuous co-production?

The study

The examples in this article are drawn from an ethnographic study that inquired into everyday educational activities in a Norwegian upper secondary classroom. In the research project, I adopted a new materialist theoretical framework (Fox and Alldred, 2015), conceptualizing material relations as an important part of knowledge making in educational practices. By engaging the empirical data with new materialist theories, the project explored teaching as a collectively negotiated, affectively and materially situated phenomenon (Fenwick et al., 2011). The overall aim of the project was to contribute to the recent discussions on the roles of the body and the wider physical environment in both teaching and learning situations, as well as in the research (De Freitas and Sinclair, 2014; Taylor, 2018).

For the study, I recruited a class of 23 students and one teacher studying the subject 'The Media Society'. I followed their activities for approximately 40 lessons over a period of 3 months. I used participant observation to generate the empirical material, including video and audio recordings, field notes, informal conversations and interviews with students and teachers. The use of two pocket-sized video cameras and one audio recorder facilitated the explorative nature of the study, as I could easily move the equipment to follow the activities that unfolded in the classroom (Heath et al., 2010). Furthermore, the recordings allowed for micro-level analysis of both discursive and material interaction in the teaching situations (Knoblauch and Schnettler, 2012).

Following the theoretical framework, I paid close attention to material-discursive processes both while observing activities in the classroom and in the broader ethnographic fieldwork (Dennis, 2018). This, in turn, led me to inquire into the active roles played by research tools. From the perspective of new materialism, the recording equipment can be considered a participant in the research relationship (Santiago de Roock, 2020), co-producing specific forms of relations in the classroom. As the next section will show, the physical presence of the recording equipment sometimes prompted participants' talk and actions. This gave me unexpected but fresh insight into their reflections about the research and their own participation in it, which in turn highlighted both the limitations and the productivity of the principle of informed consent.

Pre-fieldwork informed consent

In the field, I followed the students and their teacher in their ordinary classroom interactions. My focus was on whole-class situations and group collaborations and not on individuals. The participant students were aged from 17 to 18 years and thus themselves capable of consenting to participate in the project or not.[1] Besides being young people in an educational context, the participant group was not classified as particularly vulnerable participants (Busher, 2019). I also did not consider the main theme of the study, the materiality of group interaction in teaching situations, to be of a sensitive nature. The study,

like many social research projects, thus posed a relatively low risk of predictable harm to participants (Guillemin and Gillam, 2004).

When planning for soliciting consent, I combined advice from qualitative methods literature, the research community and my own previous experiences with the official guidelines and checklists (NESH, 2016; NSD, 2020). For instance, I used the recommended template letter for informed consent but adjusted explanations of how participants' privacy and anonymity would be protected to the age group in question (Busher, 2019). In the process of gaining access to the field, I strived to fulfil the formal ethical requirements and guidelines regarding informed consent and to address the asymmetrical power relations that are present in the recruitment of young people in school settings. I distributed information sheets to the gatekeepers, teachers and their students, and visited schools to talk with potential participants about the project in person. Whilst there, I redistributed printed information about the project, along with consent contracts, and asked the students to read these and to consider taking part. Later on, when one class had agreed to participate and signed the forms, I considered the phase related to informed consent more or less complete.

However, observations and interactions with participants after the actual fieldwork had begun made me rethink the role of informed consent in my research. The following conversation took place between two students in a video editing room. I had left the room to see which activities were taking place in the other groups. Meanwhile, the two students were working together on a computer when, for a moment, their conversation transformed into playful beatboxing and singing. After this, they both burst out laughing, and then became quiet, returning their attention to the computer screen in front of them. Then, moments after, in close succession, both glanced at the research camera and then at each other:

> **Student 1:** You know that (.) she [the researcher] will write down this (.) and this (.) and this as well? [smiling]
>
> **Student 2:** [Maintains a serious facial expression. Replies quietly] And then she will tell the teacher, and I will get a 'two'. [The lowest grade.]
>
> **Student 1:** What did you say?
>
> **Student 2:** E:m: [Glances at the camera, and back at the computer screen] Never mind.

In this short interaction, we see the two students articulate diverging accounts about participation in research and how it affects them. Student 1 appears at ease with being recorded and playfully weaves the future transcription of the recording into the conversation. Student 2 replies with a serious expression and an explicit concern about grades and how the recordings will affect them. The conversation in this video footage took me by surprise, as I felt I had clearly informed the students that their teachers would not have access to the recorded material. Both students were present at the time of the distribution of information, and both had signed the consent contract.

There are multiple potential reasons for why Student 2 did not display knowledge of the project in the way I believed I had communicated it. First, in any person's already

busy day-to-day life, detailed information given about a research project in the distant future could easily be forgotten, misunderstood, misinterpreted or ignored (Gallagher et al., 2010). Second, in the context of formal education, children and young adults are regularly asked to listen before being questioned to reproduce what they have learned in class and to have their answers assessed and graded by teachers. If a young person in a school setting feels they do not have a clear understanding of the research project, the stigma attached to declaring this status might cause the student to hesitate to tell the researcher so (Gallagher et al., 2010). Previous experiences may also lead young people to not always believe what adults tell them. Third, this verbal exchange could also be part of the students' casual banter more than an expression mirroring their 'true' understanding. Hazel (2016) found that participants strategically utilized the presence of the research tools and their understanding of the research project in their negotiation of social identity construction. From this point of view, the situation can be seen to illustrate how the two students strategically made use of their research participation as an opportunity to display, for example, their knowledge of the research in a joke or to express a general worry about grades to a friend.

The standardized pre-fieldwork practice of getting informed consent proved useful as a way to connect with the field and begin the open-ended negotiation of access (Riese, 2019). Sharing my own fragmented understanding of the research, including my intentions for and ideas about future consequences of the study, was a productive starting point for conversations and reflections during the fieldwork. Nevertheless, as the above example highlights, there are some important limitations to pre-fieldwork informed consent. Informing and soliciting consent during recruitment only assumes that individuals have the capacity to produce a stable and unambiguous understanding of the research, even though it has not yet taken place. However, participants will continue to observe and evaluate the research project as it unfolds, whilst making decisions throughout on how to respond and strategically make use of their participation. In other words, the participants co-create and shape the ways that they understand and perform the research relationship, as it unfolds as part of their everyday context (Dennis, 2018). From such a collaborative perspective on research knowledge, participants are not at the receiving end of 'information' but are actively co-producing their own understanding as well as the research knowledge itself. Consequently, neither before nor during the fieldwork do any of the persons involved in the research 'possess' clear and unambiguous knowledge about how the research will unfold. This understanding of the research process calls for more situated and processual ways of respectfully evaluating participants' knowledgeable decisions. One way to approach research from such a relational ethical framework (Flinders, 1992) is to consider consent as an ongoing relational negotiation.

Continuous negotiations of informed consent and dissent

The first pre-fieldwork steps of the consent process can be described as an explicit and formal dialogue about informed consent. Even though the *standardized* procedures of pre-fieldwork consent are insufficient, I will argue that the *principle* of informed consent is vital as an ethical tool in the complexity of qualitative research and its relations. In what follows, empirical examples from my study are discussed as various types of ongoing

negotiations of consent. The discussions draw on some of the recent conceptualizations of processual, 'in-field' consent (Gallagher et al., 2010; Heath et al., 2007). In the literature, continuous consent has been described both as a more formally motivated practice of documenting direct and indirect re-negotiations (Mueller and Instone, 2008; Wendler and Rackoff, 2002) and as a more informal and fluid practice, motivated by viewing research as an inherently inter-relational and situated process (Bhattacharya, 2007; Bourke and Loveridge, 2014; Plankey-Videla, 2012). In what follows, 'in-field' informed consent is discussed as a continuous practice supported by concepts from both of these approaches, but primarily sharing the motivation of the latter.

Explicitly (re)negotiated consent and dissent

When I arrived in the field, I was struck by its affective intensity. The classroom practices I aimed to study were not 'tidy entities' but rather a messy, interdependent web constituted by students and teachers in the middle of their busy everyday lives. In the 4 weeks that passed since the participants' initial agreement, small or large changes could have occurred in their lives. Such changes could alter how the participants felt about being part of the research project, in particular since it involved introducing video and audio recording equipment into their classroom. In the early days in the field, I therefore decided to ask the participants for permission again. For example, when following smaller student groups up close, I would ask if it was ok to place the camera with them and remind them that they could turn it off at any point. Asking participants again, whilst in the field, can be seen as an example of explicit maintenance and renegotiation of informed consent (Plankey-Videla, 2012; Wendler and Rackoff, 2002), or *explicitly (re) negotiated consent*.

In another situation, the students were giving presentations in front of the whole class as part of an assessment. Many students had previously expressed high levels of anxiety about this form of assessment, so I decided to remind them that it was still voluntary to participate in the research and that it would be no problem for me to turn off the camera. After this reminder, one student came up and told me that he would prefer if I did not record his presentation that day. This decision to withdraw illustrates a case of 'informed dissent' (Bourke and Loveridge, 2014) or *explicitly (re)negotiated dissent.*

During fieldwork, the participants had been able to see, for example, how I as the researcher was acting within the classroom with the equipment. After these experiences, their understanding of what participation in this particular research means was likely to be different from when they initially consented. When directly asking about consent at this point, decisions to re-consent or dissent were therefore arguably more informed, or knowledgeable in a different way, than during recruitment. However, this form of reasoning around ongoing consent repeats the same epistemological principles of the standardized informed consent procedures. The decision can only be 'more' informed in the sense that it is based on 'increased' knowledge about the in-situ research relationship. There can still not be any better understanding about future consequences and risks posed by the research at large. Moreover, arguing for a continuous practice of informed re-consent and dissent in the form of individuals' agreements based on the logic of transaction and predictability, only repeats the epistemological problems of the standardized ethical procedures.

There are, however, other ways to understand the role of an explicit dialogue about participation in the research relationship. Giving participants the choice to permanently or temporarily withdraw during fieldwork can contribute towards a mutual understanding of the active role that participants play in the research. Following a relational ethical framework, research is perceived as a collaborative relationship (Beach and Eriksson, 2010; Ellis, 2017). This means that we depend on participants' active assistance as well as 'a shared affinity' in our cooperation (Flinders, 1992: 107). Explicitly renegotiating consent with participants while in the field can thus be seen as a way of configuring and confirming the research relationship as an open-ended dialogue.

Openly placing an interest in participants' well-being above the interest in the aim of the research itself can contribute to the continuous building of trust (Smette, 2019). For example, the participant who decided to opt out during their presentation only did so temporarily and from that particular situation. The same student did not withdraw in other situations and decided later on to take part in a group interview. To provide explicit opportunities to consent or dissent to take part in the research, with genuine room for refusal, can be a way to signal respect and build affinity within research relationships.

Whilst in the classroom, I felt a tension in my interests as a researcher. I wanted the participants to continuously make informed decisions of consent and therefore be aware of their participation in the research. On the other hand, I did not wish to disturb the activities that I had generously been allowed to observe or to draw unnecessary attention to my own and my equipment's presence. Therefore, as time went by, I became more hesitant in explicitly asking for re-consent. An explicit consent dialogue can signal regard for participants' personal integrity as well as affirm the collaborative role participants play in the research. However, the directness of an actively sought, ongoing practice of informed consent can also signal a lack of cultural sensitivity and rapport (Flinders, 1992). Furthermore, as both Okyere (2018) and Perez (2019) demonstrate, formal and explicit dialogues of consent can be counteractive by reproducing power structures rather than fostering trust in the research relationship.

Implicitly (re)negotiated consent and dissent

Throughout the fieldwork, the participants engaged with the research equipment and me in a variety of ways. Sometimes our presence was ignored. Other times, I was casually greeted or asked questions, for example, about how my project was going or what kind of things I was looking for. Some also developed the habit of playfully greeting the camera as they entered the classroom in the morning. On one occasion, a student spoke to the camera as they moved it with a group from one to another part of the classroom, telling it, 'You can come with us'. Through such actions, some participants expressed an awareness of being recorded and being part of the research and simultaneously implied acceptance and inclusion of the researcher and the research tools in their everyday classroom practice. These responses can be seen as consenting through various modes of cooperation and engagement with the research (Gallagher et al., 2010). Such questions, invitations and other forms of interactions can be interpreted as informal 'implied continued consent' (Mueller and Instone, 2008) or *implicitly (re)negotiated consent*. In another

situation, however, only moments after I placed the camera with a group of students, one student got up and sat by another table. The student had formally consented to participate, but this withdrawal from the recorded situation could be interpreted as a non-verbal indication of dissent (Bourke and Loveridge, 2014; Heath et al., 2007) or *implicitly (re) negotiated dissent*.

These moments of interaction generate insight into how participants continue to explore and produce new understandings of the research relationship (Whiting et al., 2018). Through paying particular attention to these (dis)engagements, I learned about the research relationship, including the participants' orientations towards participating in the research. This attentive involvement creates space for participants to negotiate access and shape the ongoing research relationship. For example, after the participant's withdrawal away from the camera, I adjusted my actions and position in the field by keeping a respectful distance from that particular student. To attend to continuous informed consent can therefore mean to listen to both 'what is said and unsaid' (Bourke and Loveridge, 2014) and to be receptive to the explicit as well as implicit ways of consenting and dissenting to 'doing-being-observed' (Hazel, 2016).

The participants' responses continuously affected my choices in the field, such as who to follow and the ways I interacted with participants. Initiating both an explicit and implicit dialogue with participants can thus be useful as an ethical tool for the researcher in their effort to listen, attune and align to the participants and their understanding and interest in the research participation as a whole. This continuous responsiveness in research has been conceptualized as a *response-ability* (Beach and Eriksson, 2010; Pearce and Maclure, 2009). Such a response-ability cannot be achieved through the employment of anticipatory ethics but needs situated, reflective and relationally attuned ethical labour (Busher and Fox, 2019). By striving for openness and sensitivity to participants' responses, the research practitioner incorporates a space for these voices to be heard. As the next section highlights, this inter-relational work can be valuable, especially in the later research phases, when opportunities for explicit and implicit negotiations over consent and dissent are absent.

Post-fieldwork articulations of informed consent and dissent

As outlined, explicit and implicit dialogues about consent influenced the development of the research relationship in the field. However, between such direct and indirect negotiations, there were longer stretches of time in which the participants displayed little or no response to the researcher. The participants appeared busy with their school lives and either ignored my and the research equipment's presence or forgot it altogether. After finishing fieldwork, I conducted group interviews, in which I could de-brief the participants and discuss unresolved issues of consent with them (Brinkmann and Kvale, 2015). However, later on, when I reviewed the video data, new issues concerning participation and informed consent emerged. Since I had left the field and the class I had been observing had left school, I had no opportunity to discuss these issues with the participants. This prompted a post-fieldwork reflexive and ethical evaluation (Gillam and Guillemin, 2018).

The case of recording on-screen interaction

The activities I observed for my study were lessons on the topic of 'media and communication', and there was often a strong presence of electronic screens and digital technology in the classroom. For example, the students used various types of recording equipment in their own school projects. The students were actively encouraged by the teacher to use computers and mobile phones to access online resources, including learning platforms as well as social media. The activities using these digital devices were generally subject-specific, but 'off topic', socially motivated use of the same technology also occurred. For example, during class, students would interact with not only teachers and co-students, but also other people (e.g. friends) and companies (e.g. browsing online shops or playing computer games). In the recorded material, it became evident that such off-topic and on-topic activities were tightly intertwined. Any subject-specific activity could swiftly turn into private interaction and the other way around. This quick switching of activities in the technologically dense classroom, combined with my use of video recording for the research, provided me with some ethical dilemmas relating to participation and informed consent.

During the analysis of the visual material, I discovered that the screens of the participants, including mobile phones and computers, would regularly appear in plain view of the recording cameras. With time, the tight interweaving of personal and subject-related interactions in the digital as well as the physical classroom became analytically interesting for my inquiry. However, I soon realized that I had not brought up this interest in the on-screen activities, in neither the information sheets I distributed, nor the debriefing group interviews. The video recordings thus allowed me as a researcher to inquire into aspects of the school activities that I had not discussed with the participants. The research equipment looked similar to the students' devices in the media classroom environment, and I often left the cameras in the same spot for longer periods. Therefore, it could be easy to forget their presence. This made me question whether the students themselves were sufficiently aware of the recording equipment and of their own screens' visibility, and how closely their private and subject-specific activity intertwined. In this post-fieldwork phase, I thus realized that I had no strong points of navigation from which to decide whether the participants had consented with knowledge, to take part in the research in that particular way.

This recognition prompted another question: Would it be ethically sound to analyse something that I suspected the participants had not consented to? In this process, I became interested in the gestures of consent and dissent described above. I searched the recorded material as well as the field notes for episodes of participants' interaction with the research camera and looked for explicit or implicit articulations of the participants' positions. For example, there were several incidents of students deliberately displaying their screens by holding their mobile phones up close to the camera. This could suggest that the visibility of the screens in classroom interaction was unlikely to be of equal surprise to the participants as to me. However, I also found other more subtle gestures indicating dissent. For example, while I followed the students in one group, they sometimes appeared to communicate digitally, in silence. Discreet glances towards the camera indicated that they shielded their conversation from being recorded. This suggests that they

wished to protect their private sphere, and the digital device was a way to keep it out of the reach of the researcher's eyes and ears. The participants thus displayed some signs of being aware of the on-screen aspect of their classroom practices. At the same time, they appeared to draw boundaries for my access to certain parts of their social sphere in the classroom via the use of digital devices.

In this post-fieldwork case of considering informed consent, I combined the above observations with the fact that I had not explicitly made the participants aware that their on-screen activity could be observed and analysed. I decided to consider this a case of informed dissent, to avoid 'imposition' (Flinders, 1992: 107) on the participants by making in-depth, detailed descriptions of the on-screen practices. Should the participants read such descriptions in an article, they may conceive that I have 'betrayed' the trust they placed in the research relationship, and this in turn could damage public trust in qualitative research.

In this way, I continued the ethical work with informed consent after leaving the field, through a reflexive immersion in the research collaboration. The way in which participants interacted with the researcher and the research equipment became a guide to inform my ethical decisions in situations in which consent status was ambiguous. The sum of formal and informal responses was helpful in suggesting how students position themselves in the research. Through a context-specific tracing of explicit and implicit dialogues with participants, new boundaries for the research relationship were negotiated. Informed consent was thus a fruitful reflexive tool in dialogue with the relational knowledge I had gained from the research engagement.

Constructing post-fieldwork articulations of informed consent and dissent from the verbal and non-verbal responses in participant–researcher interactions, is an analytical and imaginative ethical response. This reflexive work with consent can thus be understood as a form of *thinking speculatively* (Puig de la Bellacasa, 2017) with the principle of informed consent. The attempt to construe the participants' expectations of the boundaries of the research relationship remains vague, with uncertain assumptions of informed consent and dissent (Homan, 2001). However, here it is important to note that the pre-fieldwork practice of informed consent, in which I shared my predictions of the actual path of the research and its consequences, was equally 'an exercise in creativity' (Cassell cited in Flinders, 1992: 103).

The case of indistinct boundaries in the research–participant relationship

During the fieldwork, I was puzzled by the ways participants sometimes appeared to explore and play with the presence of the recording equipment. Some students took photographs of the research camera with their mobile phones. Another student walked up close to one of the cameras and displayed their naked belly. In both instances, the participants appeared to take charge of the situation and relate to the camera not only as a research tool, but also in a manner similar to how they acted towards peers' and their own lens-based devices. During an intense group discussion, one student turned to the camera and said, half smiling: 'I'm only doing it for the camera'. In another situation in which a student and teacher were engaged in a heated discussion, another student commented to a co-student while smiling and nodding towards my camera: 'This is good content'. My

understanding of these instances is that the comments referenced documentaries and reality-style TV programmes, in which conflicts are considered good entertainment. The participants appeared to creatively combine the research situations in the classroom with other social genres, and thus redefine the situation.

When these episodes became a point of interest in my analysis, I again began to reconsider the participants' informed consent. The participants expressed a clear awareness of the camera, but at the same time, they seemed to treat the research camera differently from how I had intended. In these examples, it is not just the roles of the researcher and the equipment that are altered but also the role of the participants and the configuration of the research relationship as a whole. The research relationship thus seems to be transformed into another less clear type of relation. The change was not due to me as a researcher deliberately obscuring its role, but rather a result of the participants' actions. The boundaries of the research relationship seemed to dissolve for all of us, and I started to question the participants' awareness that these particular interactions could become part of the research and be presented in a research article. Furthermore, it was unclear to me how I could make ethically sound decisions whether or not to include such situations as part of the analysed material.

Methods literature on participant observation recognizes that in fieldwork, where regular life intertwines tightly with the researched activity, there is an unavoidable risk of the researcher's roles and intentions being unclear (Wang, 2013). Indistinct roles and relations are inherent aspects of everyday interaction, and the same is necessarily so for participant observation. The researcher and research equipment inevitably become embedded in the studied practice in unpredictable ways. Being involved in social research, and representing it, thus means engaging in opaque and untidy everyday relationships. From this perspective, the risk of unintended covert recordings and uninvited observations is never desirable or even possible to eliminate (Perez, 2019; Roulet et al., 2017).

In informed consent, the boundaries of the research relationship are an important part of the 'it' that participants are to gain an understanding of and consent to (Hamilton, 2009). As we have seen, the boundaries of the research relationship as a whole are under continuous re-configuration by all its members. What is consented to is co-created by researcher and participants throughout the fieldwork, and imagination and creativity are thus exercised not only by the researcher but also by the participants. Rather than a risk posed to the integrity of the participants, the ambiguity and indeterminacy of the boundaries of the research relationship are a natural and productive part of any research relationship.

Critics of the growing emphasis on protecting individuals' autonomy through informed consent, argue that the this focus on participant vulnerability ultimately is funded on a distrust of participants' capacities (Connor et al., 2018; Gallagher et al., 2010; Van den Hoonaard, 2018). Schulz (2020) explains this wariness as a paternalistic approach that positions researchers as almighty, in-control experts, whilst participants are presumed to be constantly 'vulnerable and in need of external protection' (Schulz, 2020: 11). By excessively doubting the research participants' capacities to consent, a static hierarchy of knowledge is projected onto the research relationship. This perception of positions does not match the complex power dynamics in the field, where the participants strategically and creatively '(re-)shape power dynamics' within the research relationship (Schulz, 2020: 4).

Importantly, to protect participants' integrity means to acknowledge their agencies and competences to make decisions on partaking in research. However, one way to better foster these values is to decrease the focus on protecting individual autonomy and increase our ethical deliberations on trust in the research relationship (Stutchbury and Fox, 2009). One example of this can be to value both explicit and implicit dialogues about consent with participants.

Conclusion

Even as we consider research knowledge to be a creative co-production, the relations within a research project need to be cared for, and the ethical responsibility for navigating the limits of the research relationship lies with the researcher (Ellis, 2017). Puig de la Bellacasa (2012) presents a non-idealized concept of care, defining it as 'inseparably a vital affective state, an ethical obligation and a practical labour' (197). From this approach, a practice of caring is understood as a 'thick, impure involvement in a world' (Puig de la Bellacasa, 2017: 6). The question, then, is not how to care *more*, but *how* to care. The *ways* in which we care for the relations we engage in when we produce research knowledge make a difference. This requires us to account for the ethical consequences of such relational work with 'engaged curiosity' (Puig de la Bellacasa, 2017: 92) rather than following recipes of moral obligations.

Engaging the concept of care with the concept of informed consent allows me to account for consent practices as an affectively charged and non-idealized engagement, and to approach ambiguous and creative aspects of research engagement with curious attentiveness. Following this, I propose that one way to 'think with care' about the integrity of both the research and its participants is through the fostering of response-ability in the research relationship and through a continuous, reflexive engagement with the principle of informed consent. This can, for instance, be done through the situated ethical work of explicitly and implicitly (re)negotiated consent and dissent, as well as through speculative articulations of informed consent and dissent.

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Note

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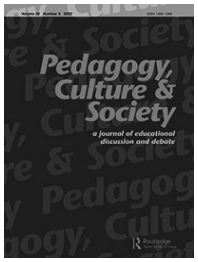

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'Are *we* going to do *that now*?' Orientations and response-abilities in the embodied classroom

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ABSTRACT

Asking 'How do spatial and bodily processes produce teaching as a phenomenon?' this paper approaches 'teaching' as a relational, spatial and bodily encounter. Findings from a video-based ethnographic account of everyday teaching situations in a Norwegian upper secondary classroom are explored using an analytical framework inspired by feminist perspectives on bodies. The argument made is that material organisations of social practices are politically and ethically charged. A series of pedagogical encounters are mapped and discussed by engaging the concepts of *affect, orientation* and *alignment*. The article demonstrates that one recurring material relation was the collective orientation towards a configuration of the boundaries for 'doing school'. The bodily and spatial practice of aligning with the local *configuration of response-abilities* is proposed as a material relation that actively contributed to producing teaching as a phenomenon.

KEYWORDS

Classroom; teaching; video-ethnography; materiality; embodiment; spatiality; orientation; affect; spatial politics

Introduction

This article approaches 'teaching' as a relational, spatial and bodily encounter. Following feminist perspectives on bodies (Ahmed 2006), the material organisation of a social space is always politically and ethically charged due to its influence on bodily relations. Drawing on data from a video-based ethnography (Grosjean and Matte 2021) of everyday teaching encounters in a Norwegian upper secondary classroom, the article centres on the following question: *How do spatial and bodily processes produce teaching as a phenomenon?* The analyses discuss the actions of bodies and their use of space in a series of teaching situations while engaging the concepts of *orientation, affect* and *alignment* (Ahmed 2006).

Prior research has approached the embodiment and spatiality of teaching and learning from a diversity of perspectives, including material phenomenology (Merleau-Ponty 2012), human geography (Massey 2004), sociomaterial approaches (Fenwick, Edwards, and Sawchuk 2011), and feminist and queer theories of the body (Butler 1988). In what follows, the article will present a brief account of some of these studies.

Teaching has been studied as embodied knowledge, for example in Estola and Elbaz-Luwisch (2003) research on teachers' narratives of teaching as a physical endeavour. Students' experiences of embodiment have been given considerable focus in research

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on physical education (Aartun et al. 2020) and dance education (Anttila and Nielsen 2019), but also in other school subjects, such as social studies (Sund, Quennerstedt, and Marie 2019).

Several ethnographies have also approached teaching as a larger material constellation encompassing teachers' and students' bodies, objects, environment, time, relations and practices (Nespor 2004; Roehl 2012a). These works highlight the active role of space and time in everyday teaching and learning processes. For example, McGregor (2004) has shown how materially embedded relations (e.g. prior experiences, transport and timetables) exert a 'spatialising force' by locating bodies and curricula within the fluid boundaries of schools. Sociomaterial relations can also, as Vanden Buverie and Simons (2017, 116) found, temporarily fabricate objects (e.g. socks or sonatas) into 'pedagogical things', and co-produce a specific 'school time' and 'school space'. A similar argument has been made by Roehl (2012b), who suggests that for an 'epistemic configuration of school lessons to take place', the alignment of multiple elements is required, including 'educational discourse, pointing gestures, spatial arrangements, the symbolic order of material objects in the classroom, the direction of gazes and so forth' (Roehi 2012b, 67).

Research has also demonstrated how the spatial organisation of school produce different bodily and spatial constrictions for teachers and students (Holland, Gordon, and Lahelma 2007). The layout of a classroom environment can be understood as a technology for directing attention (Snaza and Sonu 2016), that guides its 'inhabitants' into relations of (in)visibility and (im)mobility. For instance, students are frequently described as choreographed into 'stillness, quietness and obedience', whilst teachers are often put in motion, both to survey and control the class but also to be 'available to fulfil students needs' (Taylor 2018, 161–162).

Furthermore, research on the materiality of teaching has accounted for how spatial organisation produces other types of social and bodily divisions, for instance gender (Þrastardóttir, Jóhannesson, and Lappalainen 2021), class and race (Snaza and Sonu 2016).

This account of literature is by no means exhaustive, but illustrates the diverse and growing interest in how materiality influences what it means to be an embodied participant in everyday teaching situations. Meanwhile, many researchers continue to point to the lack of research on relations, bodies and movement in the 'living' practices of the classroom (Delamont and Atkinson 2021; Fenwick 2015; Hickey and Riddle 2021). Increased knowledge about the material and relational complexity of teaching practices can, for instance, be of particular value for the education and support of new teachers (Strom and Viesca 2020). This article is inspired by and shares these scholars' arguments that more research is needed to address teaching situations as relational, embodied and affective encounters (Fenwick, Edwards, and Sawchuk 2011; Zembylas 2007; Mulcahy 2019).

The article will first introduce the theoretical concepts of *orientation, affect* and *alignment* (Ahmed 2006), followed by a section about the research project and its methods. The article then presents a series of teaching situations in four vignettes whilst mapping their various bodily orientations and use of space. The final section discusses how a bodily practice of aligning with the local *configurations of response-abilities* can be understood as an active participant in the material production of teaching as a phenomenon.

Conceptual framework

In her book 'Queer Phenomenology', Sara Ahmed (2006) connects phenomenological theories of embodiment to feminist materialist theories of the body. She engages with phenomenologist thinkers such as Husserl (2012) and Merleau-Ponty (2012) who emphasised how the perception or experience of the 'living body' is directed and shaped through its engagement with the world. Rather than the experiences of objects having a 'general essence' that is the same for everybody, Ahmed (2006) underlines that different bodies will meet and be met by objects in different ways. In the development of this argument, Ahmed draws on feminist, queer and antiracist theorists who articulate how material relations are productive of power distribution and social differences. For example, according to Butler (1988), bodies and their possibilities are constructed and maintained through a legacy of sedimented bodily and spatial acts. In line with feminist calls for a 'politics of location', Ahmed (2006) argues that our perceptions and experiences are never neutral but always partial and positioned. All bodies, things and environments carry distinct histories that allow space for some actions rather than others.

Following this perspective, the material and relational arrangement of a pedagogic encounter plays an active role in distributing its participants' capacities to act. To explore how spatial and bodily interactions enact directionality in teaching situations, the following sections will present the concepts of *orientation, affect* and *alignment* (Ahmed 2006).

The orientation of bodies

The term *orientation* refers to bodies' spatiality and directionality in two ways (Ahmed 2006). First, a body is always orientated by inhabiting a specific location so that it is 'facing' in one direction and away from others. Taking one direction over another will make some things visible or reachable and others not (Ahmed 2006). Deciding how to inhabit a space is thus an exclusionary process. Things that become (un)reachable are understood here in a broad sense and include, for example, not only physical objects or other bodies but also ideas, emotions or practices. Second, a body is also orientated by inhabiting a specific location in time. Events in the past, as well as anticipations about the future, will give direction to a body's orientations in the present. Orientation refers not only to a body's spatial direction in its movements towards or away from an object but also to the *way* the object is approached. In other words, a body's orientation includes the 'quality' and historical, sedimented 'angle' with which the body directs its attention and energy towards that object. Importantly, since an embodied encounter entails a meeting, it is to be considered a relational encounter where multiple orientations meet (Ahmed 2006).

The affective capacity of bodies

In an embodied encounter, such as a teaching event, the meeting of multiple orientations can be understood as an *affective* process. Affect has been conceptualised in multiple ways but refers here to the reciprocal, inter-corporal process of affecting and being affected (Blackman and Venn 2010). 'To affect' refers to the process of a body directing attention and energy to 'impress' on others, whilst 'to be affected' refers to a body being 'impressed' upon or engaged by other bodies' actions (Ahmed 2014, 6). When one body

enacts a particular spatial orientation, it entails a mutual relation of both affecting and being affected by other bodies and their orientation. A body's capacity to affect and be affected is an ongoing negotiation, and it can be amplified or diminished as a result of this process. In other words, affect refers to both the relational *processes* that produce capacity, and the *product* as the affective capacity itself (Clough 2007). What a body can do in a situation is thus always contextualised by its inter-corporal location. In a school setting, one example can be how affective capacities are produced differently depending on the relational structure of the situation. As Gunnarsson (2020) found, the relational affordances during the break created intense discussions about the same theme that during a whole-class teaching situation generated tense silences.

Material arrangements: aligning bodies

When bodies orientate their attention and actions in the same direction, for example, towards the same object, they can be said to be *aligned* (Ahmed 2006). Bodies enact a particular spatial relationship by aligning with the direction of other bodies or towards the same object. Being in alignment can entail a social agreement being affected in certain ways and moving in certain directions. The alignment of bodies can also mean that they share an emotional association or a historical angle with an object (Ahmed 2006). Orientations to 'shared points of alignment' thus temporarily enfold bodies in specific spatial relations: 'Depending on which way one turns, different worlds might even come into view. If such turns are repeated over time, then bodies acquire the very shape of such direction' (Ahmed 2006, 15).

Since bodies are different, one set of spatial relations will appear more familiar or comfortable to some bodies than others. Specific material constellations therefore enable bodies to inhabit space in some ways rather than others. Recurring spatial and bodily relations distribute possibilities differently, and are therefore inevitably tied to power dynamics.

Repeated orientations may result in anticipated ways of 'being in line' with others and accumulate into bodily practices. Bodies habitually 'gravitate' towards paths or actions that align with shared, familiar or valued directions and objects (Snaza and Sonu 2016). Such recurring orientations contribute to establish what emerges as the legitimate or *compulsory* orientations (Ahmed 2006). The spatial processes of orientation and alignment are, in other words, tied to the production, distribution and stabilisation of bodily capacities to affect and be affected in social practices (Reckwitz 2017).

The study

The article draws on data from a video-based ethnography investigating bodies' actions and use of space in a Norwegian upper secondary classroom. For the inquiry, I followed a class and their teacher during their lessons in a subject called 'The Media Society' for three months in 2018. The research participants were one class of 23 students and their teacher. The students were aged 17 and 18 years old, and they were halfway through a three-year-long upper secondary education. The study followed ethical guidelines for research in Norway (Klykken2021;NSD 2020; NESH 2016).

The research material was generated by recording approximately 40 lessons during day-to-day classroom practices. I used two pocket-sized cameras and one separate audio recorder, and I moved the equipment around in response to unfolding actions and spatial arrangements (Luff and Heath 2012). In line with a 'focused' approach to ethnography (Knoblauch 2005), the recorded material was contextualised by the situational knowledge gained from being in the field, including field notes and debriefing group interviews with the participants.

The qualitative analysis was conducted by combining the interpretive video analysis (Knoblauch and Schnettler 2012) with the analytical approach of 'thinking with theory' (Jackson and Mazzei 2012). In this analytical strategy, I engaged the theoretical framework with the empirical material by moving between three different modes of 'reading'. In the first reading, the audio-visual material was viewed and organised into broad and descriptive categories using video coding software. Categories were constructed by emphasising contrasting spatial arrangements and bodily movements (e.g. bodies arranged in groups or separately), including key themes of conversation and non-verbal expressions (e.g. of emotional character). I then selected video fragments that represented a broad variation of bodily processes and spatial arrangements, and made transcriptions of verbal, non-verbal and spatial activities and movements (Knoblauch and Schnettler 2012).

In the second reading, to investigate and make sense of the bodies' actions and use of space, theoretical concepts of affect, orientation and alignment were 'plugged in' (Jackson and Mazzei 2018). The concepts were used to disrupt and unsettle habitual thinking (MacLure 2010), and they aided the focusing of the analysis by bringing the material flow of spatial and bodily interactions to the 'front', rather than gravitating towards a more 'hard-wired' or familiar focus (Delamont and Atkinson 2021), for example, by prioritising individual or verbal aspects of teaching practices.

In the third reading, I compared the transcribed and analysed accounts to look for connectedness across the empirical material. The reading of these accounts centred on the relations between human and non-human 'participants' in the teaching situations. Approaching the data with the above theoretical concepts resulted in the articulation of one recurring material relation that 'held' the teaching practice together: a collective bodily and spatial orientation towards the local and temporary boundaries for 'doing' school. The fragments that are presented in the vignettes below were chosen because they illustrate this recurring orientation.

A mapping of bodily and spatial trajectories in the classroom

In this section, I map the actions of bodies and their use of space in a series of teaching situations. The vignettes below were constructed from a series of different spatial and bodily arrangements that occurred in one afternoon lesson. Each vignette represents a mapping of how bodies direct their actions, attentions and interests and encounter other materialities through *orientating* and *aligning* their responses in the classroom teaching situations.

The aligned classroom

Before the situation in this first vignette, the class had been working individually for some time. The teacher had just told the students to finish the assignment and submit it via the school's digital learning platform.

Vignette 1

The dimmed ceiling lights allow daylight to fall into the room from two large windows. A soft glow from individual laptop screens lights up the concentrated faces of bodies sitting in rows of desks. Their hands and eyes are resting on the laptops opposite. Most desks and chairs in the room are organised in rows, all facing the same direction; however, one set of furniture – a desk, chair, a TV screen and a whiteboard faces the other way and is located at one end of the room, near the exit. In this area, one body is standing, eyes panning the classroom. Slowly, the standing body walks down an open passage in the middle of the room, between the rows of desks, before approaching the seated bodies with a low-voiced enquiry: 'Have you handed it in?' Some bodies answer, but the replies are too quiet to reach my ears. A thick silence continues to fill the room, accompanied by the sound of keystrokes. From the back row, one seated body's eyes also pan the room whilst stretching both arms up into the air, as if just having awakened from a deep sleep. The rest of the seated bodies' gazes and hands remain directed towards the laptops.

In the situation described above, most of the seated bodies were engaged with their laptops. Their attention appeared to be orientated in a similar direction, thus collectively aligned, as they dwelt on reading and writing on laptops. With its dimmed lights and the stillness and silence of the bodies, the whole spatial arrangement facilitated individual thinking and concentration and thus contributed to this alignment. The placement of the rows of desks and chairs also put the seated bodies into alignment. The attention of the standing body, however, was differently directed. This body moved around, observed and approached the seated bodies by engaging with them verbally, waiting for their replies. The open passage between the rows in the middle of the room enabled the standing body to move closer to the seated bodies and their desks and laptops. To sum up, the standing body's attention was directed towards the seated bodies and the activity they were doing, while the seated bodies' attention was given to their own 'doing' of the task at hand.

The closely interlinked alignment of the bodies in the room is an example of a collective enactment of a specific spatial relation. Together with the room's physical setup, the standing and seated bodies enacted a material arrangement with an orientation frequently seen in contemporary classrooms. The direction of the furniture constructs a 'front' and a 'back' of the room, which is typical in schools. The enacted orientations make the standing body recognisable as a 'teacher' and the seated bodies as 'students'. This spatial arrangement is an example of established sets of relational alignments, such as how to sit and where to look, that emerge as familiar and contribute to what makes the situation intelligible as a 'teaching' situation.

Bodies changing direction: 'Are we going to do that now?'

The vignette below shows that the collective direction of attention and action was put into motion. After investigating the students' progress, the teacher requested the students' 'change of gaze' and told them, with some evasiveness, what they were going to do next.

Vignette 2

The teacher returns to the front of the classroom and speaks louder, addressing the whole room: 'Is there anybody who has not handed it in yet?' Some students quietly reply, 'Yes' and 'Just a minute', whilst most continue to type and gaze silently at their computer screens. A few moments later, a more decisive uttering cuts through the room: 'When you have handed it in, close the lid of your laptop and direct your gaze this way'. Now, a wave of movement spreads through the room, as one by one the laptop screens are lowered and seated students shift their gaze to look up and towards the front of the room.

The standing teacher smiles and says, 'Er … Next, we are going to do something a bit . . . awkward, [. . .] but I also think it might be interesting and fun. [. . .] But I'm going to show you. [. . .] We are going to do something similar to this.' The teacher touches the computer on the 'front desk' and then walks to the side. Next, a video[1] is projected onto a large screen at the front of the classroom. A narrator's voice and music fill the room. The video shows several groups entering a large room. Each group is visually portrayed and labelled as, for example, high or low earners, teenagers, pensioners, different professions and so forth. Next, a person calls out different criteria and asks individuals with experiences meeting those criteria to step forward; for example, 'Who in this room was the class clown?', 'Who has been bullied?', 'Who has bullied others?', 'Who had sex this past week?' and so forth. Individuals then walk out of their 'original', seemingly homogeneous group and create a new, heterogeneous group in the middle of the room. The new and more diverse groups display various emotions, for example, amusement, sadness or pride. Some groups bond or receive applause or other forms of non-verbal recognition from the others. At the end of the video, the narrator's voice states that despite their superficial differences, people share many experiences. A logo at the end makes it clear that the video is a commercial for a national TV station.

Throughout the screening, the teacher leans on the wall, next to the first row of desks, whilst the students remain seated, with their gaze directed towards the large screen. As the video plays, the faces in the room switch between thoughtful expressions and smiles, corresponding to the events in the video. After a while, some students turn their heads towards co-students and the teacher to exchange wide-eyed looks and discreet smiles.

The very second the film finishes, one student asks aloud, 'Are *we* going to do *that now*?' There is an emphasis on 'we', 'that' and 'now' that expresses a combination of disbelief, eagerness, and curiosity. The teacher replies with a smile: 'Yes.' The student follows up: 'With *those* questions?' The teacher replies that the questions will be different and more oriented towards 'the subject' (curriculum).

In this vignette, the teacher introduced a new activity for the class and connected it to the content of the video, and the students shifted their gaze from individual laptop screens and towards the large screen at the front of the room. This event initiated a bodily and spatial shift in the material arrangement of the room. The bodily relations first aligned with the video, as the concentrated, relaxed and sleepy facial expressions gave way to large, surprised eyes and smiles. The atmosphere of the room appeared to 'warm up' and change in line with the music and unfolding narrative in the video. The change in the students' facial expressions was followed by a discreet exchange of looks and smiles, showing an interest in seeing how others responded to the video and communicating something about it to the other bodies in the room. When the students' attention to the video began to weave together with an interest in the other students' responses, they were in the process of aligning with each other.

The video screening and the subsequent embodied engagement produced a different spatial and bodily arrangement than the one depicted in the first vignette. Compared to the actions described in the first vignette, this series of actions and gestures showed a different set of spatial relations. One change was that the room for relational engagement was differently 'shaped' , as seen in the subtle but increased non-verbal exchanges as the students looked for others' expressions. The material arrangement, on the whole, was thus modified, with a different collective enactment of the whole group's capacity to affect and be affected. Thus, the new 'room' for social connections represents a different *configuration* of the bodies' capacity to act, which, as the following vignette will illustrate, continued to alter.

A familiar direction on unfamiliar ground

As the situation unfolded, the students continued to look for direction and give each other and the spatial arrangement direction through a process of orientation and alignment.

Vignette 3

After the screening, the teacher asks everybody to gather at the back of the room. Some students stand up quickly, others more hesitantly. As they navigate between the rows of desks, some students engage in low but energetic conversations. Some students assist the teacher in moving some of the desks and chairs to the side of the room. The sound of furniture scraping the floor mixes with the low buzz from talking. After freeing up floor space at the back of the room, the students gather along the back wall in a jumbled line. Some students look enthusiastic, some indifferent and some nervous, with arms crossed. Some exchange looks with their eyebrows raised, and others exchange smiles.

Meanwhile, the teacher walks to his computer at the front of the room, then smiles and states, 'These things do not work without good "hero-music".' A loud guitar solo bursts out of the speakers (an instrumental action-movie soundtrack called 'The Top Gun Anthem'). Some students burst out laughing, while others groan. The teacher smiles in reply to the students' vocal outburst and joins the row of students at the back of the room. The students and the teacher now face the same direction, looking towards the empty, makeshift 'stage', while the room is saturated with 'heroic' music, excitement and tension.

The teacher holds a smartphone and reads from a list on it. As the teacher begins to speak, some students look towards the floor, as if listening with concentration. Others look directly at the teacher. All seem to be fully 'tuning in' to what the teacher is about to say. The teacher's voice is loud over the background music: 'I want those who are technically skilled to step forward.' One student replies with hesitation: 'In . . erm . . . this subject?' Some appear confused and look around to gauge their co-students' reactions. The teacher replies: 'Yes.' Another student requires further clarification: 'Like cameras and stuff?' The teacher replies, 'Cameras and stuff, yeah.'

All the students appear to be in the midst of considering whether to move forward or not. Some students are almost glued to the floor; others appear eager and ready to 'go forward'. Finally, two students decide to break out of the line and move slowly forward. When they reach the middle of the cleared space, they turn to face the students remaining in the line. Moments later, another student grabs the arms of two other students, forcefully dragging them along to the 'front'. Others hesitantly join them, with hands in pockets, arms crossed. In the end, a total of eight students go forward. The group stands there for some moments, as the music plays, while receiving a look of recognition from the teacher and the co-students. The teacher nods and says, 'Ok! Come back.' The group of students returns to the line.

Then, with a smile, the teacher announces a new criterion: 'Next, those who define themselves as "technically backwards".' This request sparks laughter and receives even more theatrical or animated body language from the students. Some move forward with arms demonstratively crossed, or hands in pockets, while one student 'hops' playfully forward. A group of five students walk to the 'front stage' and turn to face the others. One student remaining in the line claps in support of them, as in the video. The teacher looks at them with a warm smile and says, 'Yes . . . And return. Thank you.' The teacher looks again at his phone and then looks up. 'And next, those who feel that they are good at writing.' Again, several students look towards each other as if silently seeking assistance with deciding, or to get approval for their decision, of whether to 'move forward' or not.

The activity continues in a similar pattern. Depending on the teacher's criterion, relating to skills required for the subject, smaller groups of students gather in the middle of the room. Other examples of criteria were 'those who call themselves creative', 'those who find it hard to write', 'those who are good at analysing' and 'those who struggle with concentration'. Towards the end, the students request another round, and the teacher asks the students to come up with criteria. After the activity, the students and the teacher rearrange the layout of the room. The students return to their seats, and the teacher returns to the front of the room.

In the activity described above, bodies stood up and left their desks. Furniture was moved away from an area of the room, and the 'traditionally' structured classroom lost its shape. The students connected with one another while they were on 'the move'. Some students chatted cheerfully and laughed, while others exchanged worried looks as they gathered in the line at the back of the room. The students orientated towards the new situation with a mixture of emotions, including tension and anticipation, excitement and unease. The increased social interaction and heightened emotional intensity that emerged during the video screening depicted in the second vignette seemed to spill

into and grow in this situation. On the whole, the situation, including the 'heroic' music, the physical setup of the furniture and the social energy and emotional displays, can be said to align with the atmosphere in the video mentioned in the second vignette.

During the activity, each request from the teacher brought on an intense social and corporeal exchange. The students orientated towards the teacher's request, by listening and by asking the teacher to clarify the criterion for moving forward. The teacher orientated towards and responded to the students' requests and choices by giving them clarifications, smiles and looks of recognition. The students appeared to be continuously gauging the situation by making non-verbal alliances and agreements or looking for approval or support from other students before they walked to the front. After having made their choice, some students turned around whilst walking to see the others' responses. Thus, the students moved in and out of the jumbled line in alignment with the teacher's requests and with the responses gathered from the non-verbal dialogue with other students' bodies.

Even though the individual bodies enacted the activity by displaying different emotions, the collective orientation described in the third vignette was, on the whole, characterised by increased social and bodily connectivity, movement and energy. This spatial quality becomes evident when compared with the quiet and calm (almost sleepy) individual computer-, desk- and whiteboard-based activities that had taken place only a few minutes earlier, as described in the first vignette. Thus, the relational structure depicted in the third vignette shows a new spatial and bodily configuration of the classroom's material arrangement.

A material encounter in the embodied classroom

The differing spatial and bodily figurations in the series of teaching situations described above draw attention to the changing material conditions within the classroom. They highlight how bodies performed different sets of orientations and alignments with multiple others. The movements and atmosphere of the classroom were utterly transformed from the first to the third vignette. The second vignette shows a transitional situation, as one configuration of the groups' engagement with co-inhabitants and the environment was replaced by another. Together, the contrasting spatial and bodily arrangements in the three accounts illustrate how the materiality of the classroom unfolded with a variety of social energies and paces. In the following, I will discuss this continuous process of orientation and alignment of bodies in the classroom more closely.

An affective inquiry into the boundaries for 'doing' school

The material arrangement described in the third vignette was differently structured from the two other vignettes and from most of the other teaching situations I observed during fieldwork. The reactions of the students indicated that the teaching situation was significantly different or unexpected for them too. Despite the unfamiliar situation, I was struck by how the students' bodily responses were somewhat familiar. What emerged as familiar in the third vignette was the collective direction of attention. The students responded to this surprising arrangement with an embodied

display of interest and inquiry, actively seeking to understand which responses were currently expected and allowed. The students engaged in an intense evaluation of the whole situation, including the actions of the teacher and the co-students, as they were looking to adopt the 'right way' to do the activity at hand. In the third vignette, the strangeness of the situation and the responses of the students, which nonetheless remained aligned, highlighted the students' orientation of actively listening and attuning to the requests for action in the encounter in question. Such embodied attunements are also present in the second vignette, as the students appeared to orientate towards the content of the video as well as towards other students in the relational exchange accompanying the video screening.

The vignettes above have thus illustrated how, through a complex set of movements and interactions, the students continuously orientated towards the requirements of the activity, looking for clarity, while at the same time evaluating their own ability to respond in the ongoing event. The students' enactment of aligning directions thus represents how they collectively navigate the continuously changing capacities for action in a teaching situation. The activities during and right after the video screening can therefore be understood as a shared affective inquiry into the relation between the video and the group's future actions. The expressions of anticipation, tension and excitement depicted in the third vignette emerge as aligned responses to the energy, pace and intensity that the video brought to the spatial and bodily arrangement in the second vignette. The material arrangement of the situation in the second vignette, including the screening of the video and the exchange of smiles and eye contact, thus affected the configuration of bodily capacities in the situation in the third vignette. One effect of this altered configuration was articulated in the emotionally charged, verbal request when one student asked the teacher, 'Are *we* going to do *that now*?'

The students thus appeared to return to a position of observing and listening to words and gestures and then responding by performing different bodily and spatial arrangements. In this case, they moved from a teaching situation composed of individually working, silent and seated bodies looking at laptops, through an emotionally moving video screening, before joining the jumbled line of standing bodies, while intensely exchanging looks, laughing, and moving in and out of groups to the sound of an 80s movie soundtrack.

Throughout the fieldwork, I identified similar inquiries by the students into the local conditions of each situation for how to act and respond. This interest came to the fore as both explicitand vocal questions and comments and more subtle and implicit bodily negotiations. For example, when entering the classroom in the morning, the students often immidiately asked the teacher, 'What are we going to do today?' The students also frequently asked if they could amend the conditions or rules of the given assignments (e.g. to be allowed to work in groups rather than individually). As shown in vignette three, these inquiries also took the shape of more subtle and non-verbal negotiations. Through an embodied routine of orientation and alignment, the students thus appear to seek out and negotiate over the boundaries for the current activity: What are the current possibilities for action? What 'doings' are expected or allowed? What 'doings' are not legitimate?

The action of orientating towards or 'tuning in' to the requirements, expectations or obligations thus occurred on multiple occasions and seemed like a constant material relation throughout the ethnographic material. The student bodies appeared to routinely

direct their attention and actions in response to the relational requests of other bodies and the environment. They habitually directed their attention to the 'right way' to act in the situation by active listening (with eyes and ears), identifying, understanding, interpreting, negotiating, mimicking, changing and adopting the current 'rules'. The students thus appeared both expected to and expecting to adjust to the body possibilities of the classroom, negotiating new as well as established boundaries, restrictions and affordances to move and interact. The bodies' possibilities to act and respond were thus shaped by the situation's material distribution of allowances and restrictions to respond.

To 'do' or not to 'do school': at the thresholds of alignment

The vignettes above illustrate how, with each new material arrangement as a new 'room' for action unfolded, the bodies sought out its shape and responded by adjusting their activities to its boundaries. This section presents examples of a different kind of situation in which students appeared to move back and forth over thresholds of alignment.

One example of *realignment* to the 'room' for action was when one student, following her group's 'off-task' conversation, attempted to refocus their attention on the required activity by asking the others: 'Ok, now . . . should we *do* something?' Another example was when one student explicitly reassured the teacher and co-students that he was, in fact, 'doing school', despite being in the midst of using a social media app on his mobile phone. In these situations, 'to do' was contrasted with 'not doing' and thus seemed to refer to aligning their 'doings' with the present situations' required spatial and bodily orientation.

There were also several situations in which the students avoided or restricted their engagement with the obligatory direction of attention. For example, in the situation described in the vignette below, a group of students negotiated the legitimate boundaries for 'the school doings' amongst themselves during a group-work situation.

Vignette 4

Four students sit around a round table, each facing their own laptop. One student takes the lead and allocates different tasks to the three other students. They have planned to interview a specific person, a YouTube blogger, and have to prepare by collecting information about that person.

Student 1 looks at students 2 and 3, and says, 'It's your job to find previous videos. Enter what you find in this document.' Student 1 then shares the link to the online document with the group, then points to Student 4 and continues, 'You can find facts elsewhere. OK, let's start the research.'

Next, the students work individually on their laptops. Student 2 was told to look at YouTube videos made by the person they are planning to interview, but instead, he begins to look at irrelevant videos while chatting cheerfully with Student 3. The topic of their conversation reveals that their on-screen activity is off-task. This makes Student 1 look up and stare at Student 2.

Student 1 says, clearly annoyed, 'What are you doing? Read about the YouTube interviewee instead!' Student 2 answers, with a teasing smile, 'But, these would be better guests!' Student 1 reacts to this reply by leaning over the table and physically grabbing Student 2, play-fighting him for a few moments. Then Student 1 stands up and dramatically puts his hands up in the air, saying, 'That was the *one* task that I thought you'd be able to do. Looking at YouTube videos, like you *always* do anyway. And *this time*, you are *actually allowed* to do it!'

The three other students smile but do not comment on Student 1's frustrated reaction. Student 1 sits down again. He repeats the instructions for the group, and they continue to work individually.

Here, two students' disagreement over the required activities caused both emotional and embodied friction. Their conversation revealed that watching YouTube videos was normally not a legitimate 'school doing', but here it was considered part of the task at hand. Nevertheless, even when looking at YouTube videos was 'actually allowed', Student 2 chose to look at the 'wrong' videos. Student 2's actions thus did not align with Student 1's rules or conditions for the 'right way' of 'doing school'. While their responses seemingly fell out of alignment, Student 1's expressed frustration suggests that he embodied a sense of duty tied to the group's activities. The above vignette thus demonstrates an ongoing negotiation over what 'doings' were situated 'outside' and 'inside' the boundaries of the obligatory orientation of that teaching situation. In other words, in this case, the students negotiated over a shared point of alignment and disagreed about the current shape of the 'room' for action and movement.

A different example of the continuous movement of bodies back and forth over thresholds of alignment was when the students' actions were performed to look 'as if' they were 'doing school'. For example, during lectures, students' bodies were sometimes positioned as if facing the talking teacher but were wearing earbuds and discreetly peering down on the screens of their half-closed laptops. In this example, the students were performing the required spatial and bodily alignment, since the bodily orientation was constructed to imitate the required direction of attention (e.g. body facing forward, staying silent). In other words, to some degree, the students aligned with the current configuration of bodily demands and possibilities, but they also *non-aligned* by subtly creating a different 'room' for their own attention so that their ears and gazes could move in a different direction. Even if the students were not fully aligning with the orientation demanded by the activity at hand, these situations illustrate the embodied effect of the classroom's spatial politics. The feelings of duty and the sense of responsibility that the students expressed demonstrate how implicit rules for 'doing school' appear to have been effectively 'attached' to the students' bodies.

The local 'configuration of response-abilities' as a shared point of alignment

The four vignettes illustrate how the bodies taking part in the classroom teaching situations collectively orientated towards the materially configured opportunity for responses. By 'thinking with' the concepts of orientation and alignment, the above account has highlighted that each of these teaching situations represents an enactment

of a different set of rules or boundaries for what counts as a legitimate school activity. The vignettes show how the material arrangements were differently structured, whilst the shared point of alignment was to seek out and adjust to the present situation's possibilities, duties and constraints. A recurring material arrangement can thus be seen in how the students engaged in a spatial and bodily process of aligning their actions to the local and temporary boundaries for 'doing school'.

In what follows, I conceptualise how these spatial orientations within the classroom reproduced one shared point of alignment, namely the *configuration of response-abilities*. The hyphen in the word 'response-ability' underlines the double, reciprocal affective capacity of bodies to respond as well as to be open to receiving responses (Healy and Mulcahy 2020; Plauborg, Stine Adrian, and Malou 2020).

The boundaries of each teaching situation were configured so that it was open to some responses and closed to others. The configuration of the collective's compulsory orientation afforded and restricted the students' actions in a specific way. As each configuration of bodily capacities to respond unfolded, some spatial and embodied relations were amplified, while others were diminished. It made some actions emerge as legitimate and 'in line', and some as 'out of line' with the class' collective direction. Examples of such aligned responses are when the students were seated and quietly typing, as portrayed in the first vignette, and when they were standing and moving, as in the third vignette. Each set of boundaries 'called' differently on the students and teacher and put them into a local and temporary 'contract' of response-abilities, and the pedagogic encounters were thus opened and closed in particular ways for bodies to move and act.

Thus, each of the vignettes show one set of alignments and a temporarily resolved local configuration of a situation's distribution of affective capacities. In this process of aligning with the configuration of response-abilities, the students were opening for, engaging in and enacting sets of rules, duties and demands. The orientation and alignment influenced the capacity of students and the teacher to take part in a relational circuit of being affected and affecting others, thereby also in the production of the 'room' for responses, hence the configuration of response-abilities, in each encounter. Furthermore, this distribution of affective capacities can be understood as an *affective practice* (Wetherell 2012).

The recurring collective evaluation of the situation's response-abilities appears as a crucial spatial and bodily process in the classroom. As bodies sought and responded to the local response-ability, the affective practice itself guided or 'moved' its student and teacher bodies into established trajectories and thus shaped those bodies' perceptions, actions and directions. Thus, the practice appears to be a shared point of alignment, with the ability to move and bind the participating bodies into particular spatial arrangements. The vignettes demonstrated how the practice recruited the students' and teacher's bodies and attentions and played a key role in producing its inhabitants' obligatory orientation and alignments. The affective practice of orientating to the local and temporary 'configuration of response-abilities' can thus be seen as an active 'participant' in the material arrangement of the classroom and contributing to the production of the teaching encounter.

In each of the vignettes, some spatial and bodily enactments, such as the direction of attention and alignment of responses, 'came to matter' as legitimate ways of doing school, whilst others did not. The collective orientations thus made some responses appear as aligned and 'inside' the boundaries (e.g. doing school the 'aligned' way), and

some responses appeared non-aligned and 'outside' the boundaries (e.g. not 'doing' school, or 'doing' school the 'non-aligned' or incorrect way). Such affordances became particularly clear in the cases of non-alignment, where the students adapted their actions to appear to be 'inside' the boundaries whilst directing their attention elsewhere than to the required object of orientation (e.g. the teacher). This adaptation demonstrates how the practice is directing and '(re)working' the spatial politics of the embodied classroom.

Conclusion: The spatial and bodily production of 'teaching'

This study's focus on materiality has made prominent the central role played by the spatial and bodily processes of alignment and orientation in classroom situations. The vignettes show how possibilities and restrictions for action were temporarily and collectively configured in each teaching encounter. Through collective enactments of orientation and alignment, the students sought and responded to the local configuration of response-abilities. Each configuration produced a set of limitations and affordances that determined what activity fell under the legitimate category of meaningfully 'doing school' and what did not. The practice of collective alignment with required orientations thus made bodies adhere, move and use space in specific ways. The practice of (re)configuring response-abilities can therefore be seen as an active contributor to classrooms spatial politics. It distributed powers to act and feel in that situation by creating boundaries for legitimate orientations and alignments in each pedagogic encounter. The way that the bodies align over time, as part of the material and relational arrangements of teaching encounters, can be understood as prohibiting and reinforcing certain directions of investing one's body's energy, interests and attention.

I thus propose that *the practice of aligning with and (re)configuring response-abilities* can be seen as another material 'participant' or 'body' that co-constitutes teaching as a phenomenon. The teaching situations, as material arrangements, were simultaneously shaping and being shaped by the ongoing distribution of response-abilities. One implication of approaching teaching as a material entanglement of multiple bodies working together is that the shared orientation enacted through the classroom's spatial and bodily arrangement, matters. This position prompts ethical discussions about the trajectories of teaching that we align with, and how we direct our orientation towards responsibility and accountability for our teaching's iterative production of corporeal exclusions and inclusions.

Note

1. https://www.youtube.com/watch?v=jD8tjhVO1Tc

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Appendices

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Vår dato: 28.02.2017 Vår ref: 52293 / 3 / AMS Deres dato: Deres ref:

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 18.01.2017. Meldingen gjelder prosjektet:

52293	*Kunnskapsproduksjon som språklig og materielt samspill i norske klasserom i videregående skole*
Behandlingsansvarlig	*Universitetet i Bergen, ved institusjonens øverste leder*
Daglig ansvarlig	*Fride Haram Klykken*

Personvernombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldepliktig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvernombudets vurdering forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/meldeplikt/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://pvo.nsd.no/prosjekt.

Personvernombudet vil ved prosjektets avslutning, 31.12.2021, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Katrine Utaaker Segadal

Anne-Mette Somby

Kontaktperson: Anne-Mette Somby tlf: 55 58 24 10
Vedlegg: Prosjektvurdering

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

Personvernombudet for forskning

Prosjektvurdering - Kommentar

Prosjektnr: 52293

INFORMASJON OG SAMTYKKE
Utvalget (lærere og elever) informeres skriftlig og muntlig om prosjektet og samtykker til deltakelse. Informasjonsskrivet er godt utformet.

Personvernombudet legger til grunn at forsker følger Universitetet i Bergen sine rutiner for datasikkerhet. Dersom personopplysninger skal lagres på mobile enheter, bør opplysningene krypteres.

PROSJEKTSLUTT OG ANONYMISERING
Forventet prosjektslutt er 31.12.2021. Ifølge prosjektmeldingen skal innsamlede opplysninger da anonymiseres. Anonymisering innebærer å bearbeide datamaterialet slik at ingen enkeltpersoner kan gjenkjennes. Det gjøres ved å:
- slette direkte personopplysninger (som navn/koblingsnøkkel)
- slette/omskrive indirekte personopplysninger (identifiserende sammenstilling av bakgrunnsopplysninger som f.eks. bosted/arbeidssted, alder og kjønn)
- slette digitale lyd-/bilde- og videoopptak

OM ANONYMISERING OG SLETTING
Personvernombudet erfarer at mange ønsker å forlenge perioden for bruk av forskningsdata (inkludert lyd/videoopptak) ut over den perioden som er avtalt med utvalget. Årsakene er flere, at prosjektet blir forsinket, at data ønskes benyttet i nye studier eller at man ønsker å bruke data til andre formål. Dersom dette er aktuelt i ditt prosjekt kan du kontakte oss for råd om hvordan dette kan la seg gjøre. Hovedregelen er at utvalget må samtykke til videre lagring/bruk av datamaterialet, og et slikt samtykke kan innhentes ved oppstart eller underveis i prosjektet.

Forespørsel om deltakelse i forskningsprosjektet 'Kunnskapsproduksjon som språklig og materielt samspill i norske klasserom i videregående skole'

Til elev

Formål
Dette prosjektet er en doktorgradsstudie ved Institutt for Pedagogikk, Universitetet i Bergen. Målet med prosjektet er å forstå mer om hvordan ulike aktiviteter i klasserommet kan være en ressurs for lærere og elever når de arbeider med å lære et fag.

Hva innebærer deltakelse i studien?
For å få mer kunnskap om dette vil jeg se på undervisningen i utvalgte timer over to til tre skoleprosjekt i løpet av våren 2018. Fokuset mitt vil være på faglige aktiviteter i klasserommet som grupper eller hele klassen deltar i, og ikke på enkeltelever. Som observasjonsverktøy brukes video- og lydopptaker. Dette vil si at jeg kommer til å filme læringsaktiviteter som du, læreren og dine medelever deltar i, i disse timene. Det er kun jeg og min veileder som kommer til å se disse videoopptakene, men i tillegg kan noen få utvalgte videoklipp bli vist og brukt som utgangspunkt for et gruppeintervju med deg og noen av dine medelever, og med læreren din, på et senere tidspunkt.

Dersom du samtykker til det, ønsker jeg også å kunne spørre deg underveis om å få kopi av noen av oppgavene eller tekstene som lages i timene.

Hva skjer med informasjonen om deg?
Alle personopplysninger vil bli behandlet konfidensielt. Dette vil si at filene fra video- og lydopptakene vil bli oppbevart på en passordbeskyttet harddisk som låses inn i et arkivskap på UiB. Tolkninger gjort ut fra observasjonene i klasserommet vil bli inkludert i forskningsartikler, men alle personopplysninger vil bli fjernet før teksten blir publisert. Det vil ikke være mulig å identifisere enkeltpersoner, klassen eller skolen i tekstene. Prosjektet avsluttes senest 31.desember 2021, og innen denne datoen vil all tekst være anonymisert, og alle lyd- og videoopptak bli slettet.

Frivillig deltakelse
Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli slettet. Studien er godkjent av Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

Dersom du har spørsmål til studien, ta gjerne kontakt!

Med vennlig hilsen

Fride Haram Klykken
PhD-stipendiat
Institutt for pedagogikk, Universitetet i Bergen
tlf. 457 65 139 / 55 58 39 81
e-post: fride.klykken@uib.no

(Se skjema for samtykke på neste side)

Samtykke til deltakelse i studien 'Kunnskapsproduksjon som språklig og materielt samspill i norske klasserom i videregående skole'

Jeg har mottatt informasjon om studien, og er villig til å delta.

Jeg samtykker til*
☐ å bli filmet (del 1)
☐ at oppgaver jeg lager i timen kan brukes som forskningsdata (del 2)
☐ jeg kunne tenke meg å delta i gruppeintervju senere i vår (del 3).

**Du kan samtykke til å delta i del 1 uten å delta i del 2 og 3*

Navn i blokkbokstaver:

_____

Signert av prosjektdeltaker, dato:

_____

Forespørsel om deltakelse i forskningsprosjektet 'Undervisingens materialitet: Faglig, språklig og romlig samspill i klasserommet'

Til lærer

Formål
Dette prosjektet er en doktorgradsstudie ved Institutt for Pedagogikk, Universitetet i Bergen. Hovedmålet for studien er å få ny kunnskap om klasserommet som læringsressurs og rammefaktor for møtet med lærere og elever i videregående skole. Hva kjennetegner samspillet mellom eleven og lærerens undervisningsaktiviteter og undervisningsrommets materielle aspekt, i det daglige arbeidet med læring i fag? Dette kan for eksempel være læremidler, pulter, tavler, rom, interiør, og tilgjengelig tid.

Hva innebærer deltakelse i studien?
For å bedre forstå disse prosessene vil jeg observere undervisningen i 4 til 6 uker i en klasse, i i løpet av våren 2018. Som observasjonsverktøy vil det brukes video- og lydopptak og notater. For å dokumentere en bredde av samhandlingsforløp i klasserommet vil både utvalgte enkeltsituasjoner og hele undervisningstimer filmes. Dette betyr at du som lærer kan regne med å bli filmet i undervisningssituasjoner. Jeg vil også være interessert i å se nærmere på planer og oppgavetekster som produseres til og i timene.

På bakgrunn av observasjonene vil jeg gjennomføre samtaleintervju, først med en gruppe elever fra klassen, og til slutt lærer(e). Intervjuene med deg som er lærer vil vare i omtrent 60 minutter. En lydopptaker vil bli brukt, og spørsmålene dreier seg om dine opplevelser av de ulike undervisningssituasjonene. Kun jeg vil se og høre disse opptakene, men noen utvalgte videoklipp vil bli vist i intervjuene med deltakende elever og lærer(e), som utgangspunkt for samtalene.

Hva skjer med informasjonen om deg?
Alle personopplysninger vil bli behandlet konfidensielt. Filene fra video- og lydopptak vil bli oppbevart på en passordbeskyttet (kryptert) harddisk som låses inn i et arkivskap på UiB.

Tolkninger av video og tekst vil bli publisert i forskningsartikler. Alle personopplysninger vil bli fjernet før funn og konklusjoner blir publisert, og det vil ikke være mulig å identifisere enkeltpersoner, klassen eller skolen i tekstene.

Prosjektet avsluttes senest 31.desember 2021, og innen denne datoen vil alt tekstmateriale være anonymisert, og alle lyd- og videoopptak blir slettet.

Frivillig deltakelse
Det er frivillig å delta i studien, og du kan når som helst trekke ditt samtykke uten å oppgi noen grunn. Dersom du trekker deg, vil alle opplysninger om deg bli slettet.
Studien er meldt til Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

Dersom du ønsker å delta eller har spørsmål til studien, ta gjerne kontakt!

Med vennlig hilsen

Fride Haram Klykken

Stipendiat
Institutt for pedagogikk
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Samtykke til deltakelse i studien
Jeg har mottatt informasjon om studien, og er samtykker med dette til å la meg filme og intervjue, og til at tekster jeg skriver kan brukes som forskningsdata. Jeg er gjort kjent med at materialet skal brukes i prosjektets analysearbeid.

(Signert av prosjektdeltaker, dato)

Doctoral Theses at The Faculty of Psychology, University of Bergen

1980	Allen, Hugh M., Dr. philos.	Parent-offspring interactions in willow grouse (Lagopus L. Lagopus).
1981	Myhrer, Trond, Dr. philos.	Behavioral Studies after selective disruption of hippocampal inputs in albino rats.
1982	Svebak, Sven, Dr. philos.	The significance of motivation for task-induced tonic physiological changes.
1983	Myhre, Grete, Dr. philos.	The Biopsychology of behavior in captive Willow ptarmigan.
	Eide, Rolf, Dr. philos.	PSYCHOSOCIAL FACTORS AND INDICES OF HEALTH RISKS. The relationship of psychosocial conditions to subjective complaints, arterial blood pressure, serum cholesterol, serum triglycerides and urinary catecholamines in middle aged populations in Western Norway.
	Værnes, Ragnar J., Dr. philos.	Neuropsychological effects of diving.
1984	Kolstad, Arnulf, Dr. philos.	Til diskusjonen om sammenhengen mellom sosiale forhold og psykiske strukturer. En epidemiologisk undersøkelse blant barn og unge.
	Løberg, Tor, Dr. philos.	Neuropsychological assessment in alcohol dependence.
1985	Hellesnes, Tore, Dr. philos.	Læring og problemløsning. En studie av den perseptuelle analysens betydning for verbal læring.
	Håland, Wenche, Dr. philos.	Psykoterapi: relasjon, utviklingsprosess og effekt.
1986	Hagtvet, Knut A., Dr. philos.	The construct of test anxiety: Conceptual and methodological issues.
	Jellestad, Finn K., Dr. philos.	Effects of neuron specific amygdala lesions on fear-motivated behavior in rats.
1987	Aarø, Leif E., Dr. philos.	Health behaviour and sosioeconomic Status. A survey among the adult population in Norway.
	Underlid, Kjell, Dr. philos.	Arbeidsløyse i psykososialt perspektiv.
	Laberg, Jon C., Dr. philos.	Expectancy and classical conditioning in alcoholics' craving.
	Vollmer, Fred, Dr. philos.	Essays on explanation in psychology.
	Ellertsen, Bjørn, Dr. philos.	Migraine and tension headache: Psychophysiology, personality and therapy.
1988	Kaufmann, Astrid, Dr. philos.	Antisosial atferd hos ungdom. En studie av psykologiske determinanter.

	Mykletun, Reidar J., Dr. philos.	Teacher stress: personality, work-load and health.
	Havik, Odd E., Dr. philos.	After the myocardial infarction: A medical and psychological study with special emphasis on perceived illness.
1989	Bråten, Stein, Dr. philos.	Menneskedyaden. En teoretisk tese om sinnets dialogiske natur med informasjons- og utviklingspsykologiske implikasjoner sammenholdt med utvalgte spedbarnsstudier.
	Wold, Bente, Dr. psychol.	Lifestyles and physical activity. A theoretical and empirical analysis of socialization among children and adolescents.
1990	Flaten, Magne A., Dr. psychol.	The role of habituation and learning in reflex modification.
1991	Alsaker, Françoise D., Dr. philos.	Global negative self-evaluations in early adolescence.
	Kraft, Pål, Dr. philos.	AIDS prevention in Norway. Empirical studies on diffusion of knowledge, public opinion, and sexual behaviour.
	Endresen, Inger M., Dr. philos.	Psychoimmuniological stress markers in working life.
	Faleide, Asbjørn O., Dr. philos.	Asthma and allergy in childhood. Psychosocial and psychotherapeutic problems.
1992	Dalen, Knut, Dr. philos.	Hemispheric asymmetry and the Dual-Task Paradigm: An experimental approach.
	Bø, Inge B., Dr. philos.	Ungdoms sosiale økologi. En undersøkelse av 14-16 åringers sosiale nettverk.
	Nivison, Mary E., Dr. philos.	The relationship between noise as an experimental and environmental stressor, physiological changes and psychological factors.
	Torgersen, Anne M., Dr. philos.	Genetic and environmental influence on temperamental behaviour. A longitudinal study of twins from infancy to adolescence.
1993	Larsen, Svein, Dr. philos.	Cultural background and problem drinking.
	Nordhus, Inger Hilde, Dr. philos.	Family caregiving. A community psychological study with special emphasis on clinical interventions.
	Thuen, Frode, Dr. psychol.	Accident-related behaviour among children and young adolescents: Prediction and prevention.
	Solheim, Ragnar, Dr. philos.	Spesifikke lærevansker. Diskrepanskriteriet anvendt i seleksjonsmetodikk.
	Johnsen, Bjørn Helge, Dr. psychol.	Brain assymetry and facial emotional expressions: Conditioning experiments.
1994	Tønnessen, Finn E., Dr. philos.	The etiology of Dyslexia.
	Kvale, Gerd, Dr. psychol.	Psychological factors in anticipatory nausea and vomiting in cancer chemotherapy.
	Asbjørnsen, Arve E., Dr. psychol.	Structural and dynamic factors in dichotic listening: An interactional model.

	Bru, Edvin, Dr. philos.	The role of psychological factors in neck, shoulder and low back pain among female hospitale staff.
	Braathen, Eli T., Dr. psychol.	Prediction of exellence and discontinuation in different types of sport: The significance of motivation and EMG.
	Johannessen, Birte F., Dr. philos.	Det flytende kjønnet. Om lederskap, politikk og identitet.
1995	Sam, David L., Dr. psychol.	Acculturation of young immigrants in Norway: A psychological and socio-cultural adaptation.
	Bjaalid, Inger-Kristin, Dr. philos.	Component processes in word recognition.
	Martinsen, Øyvind, Dr. philos.	Cognitive style and insight.
	Nordby, Helge, Dr. philos.	Processing of auditory deviant events: Mismatch negativity of event-related brain potentials.
	Raaheim, Arild, Dr. philos.	Health perception and health behaviour, theoretical considerations, empirical studies, and practical implications.
	Seltzer, Wencke J., Dr. philos.	Studies of Psychocultural Approach to Families in Therapy.
	Brun, Wibecke, Dr. philos.	Subjective conceptions of uncertainty and risk.
	Aas, Henrik N., Dr. psychol.	Alcohol expectancies and socialization: Adolescents learning to drink.
	Bjørkly, Stål, Dr. psychol.	Diagnosis and prediction of intra-institutional aggressive behaviour in psychotic patients
1996	Anderssen, Norman, Dr. psychol.	Physical activity of young people in a health perspective: Stability, change and social influences.
	Sandal, Gro Mjeldheim, Dr. psychol.	Coping in extreme environments: The role of personality.
	Strumse, Einar, Dr. philos.	The psychology of aesthetics: explaining visual preferences for agrarian landscapes in Western Norway.
	Hestad, Knut, Dr. philos.	Neuropsychological deficits in HIV-1 infection.
	Lugoe, L.Wycliffe, Dr. philos.	Prediction of Tanzanian students' HIV risk and preventive behaviours
	Sandvik, B. Gunnhild, Dr. philos.	Fra distriktsjordmor til institusjonsjordmor. Fremveksten av en profesjon og en profesjonsutdanning
	Lie, Gro Therese, Dr. psychol.	The disease that dares not speak its name: Studies on factors of importance for coping with HIV/AIDS in Northern Tanzania
	Øygard, Lisbet, Dr. philos.	Health behaviors among young adults. A psychological and sociological approach
	Stormark, Kjell Morten, Dr. psychol.	Emotional modulation of selective attention: Experimental and clinical evidence.
	Einarsen, Ståle, Dr. psychol.	Bullying and harassment at work: epidemiological and psychosocial aspects.

1997	Knivsberg, Ann-Mari, Dr. philos.	Behavioural abnormalities and childhood psychopathology: Urinary peptide patterns as a potential tool in diagnosis and remediation.
	Eide, Arne H., Dr. philos.	Adolescent drug use in Zimbabwe. Cultural orientation in a global-local perspective and use of psychoactive substances among secondary school students.
	Sørensen, Marit, Dr. philos.	The psychology of initiating and maintaining exercise and diet behaviour.
	Skjæveland, Oddvar, Dr. psychol.	Relationships between spatial-physical neighborhood attributes and social relations among neighbors.
	Zewdie, Teka, Dr. philos.	Mother-child relational patterns in Ethiopia. Issues of developmental theories and intervention programs.
	Wilhelmsen, Britt Unni, Dr. philos.	Development and evaluation of two educational programmes designed to prevent alcohol use among adolescents.
	Manger, Terje, Dr. philos.	Gender differences in mathematical achievement among Norwegian elementary school students.
1998 V	Lindstrøm, Torill Christine, Dr. philos.	«Good Grief»: Adapting to Bereavement.
	Skogstad, Anders, Dr. philos.	Effects of leadership behaviour on job satisfaction, health and efficiency.
	Haldorsen, Ellen M. Håland, Dr. psychol.	Return to work in low back pain patients.
	Besemer, Susan P., Dr. philos.	Creative Product Analysis: The Search for a Valid Model for Understanding Creativity in Products.
H	Winje, Dagfinn, Dr. psychol.	Psychological adjustment after severe trauma. A longitudinal study of adults' and children's posttraumatic reactions and coping after the bus accident in Måbødalen, Norway 1988.
	Vosburg, Suzanne K., Dr. philos.	The effects of mood on creative problem solving.
	Eriksen, Hege R., Dr. philos.	Stress and coping: Does it really matter for subjective health complaints?
	Jakobsen, Reidar, Dr. psychol.	Empiriske studier av kunnskap og holdninger om hiv/aids og den normative seksuelle utvikling i ungdomsårene.
1999 V	Mikkelsen, Aslaug, Dr. philos.	Effects of learning opportunities and learning climate on occupational health.
	Samdal, Oddrun, Dr. philos.	The school environment as a risk or resource for students' health-related behaviours and subjective well-being.
	Friestad, Christine, Dr. philos.	Social psychological approaches to smoking.
	Ekeland, Tor-Johan, Dr. philos.	Meining som medisin. Ein analyse av placebofenomenet og implikasjoner for terapi og terapeutiske teoriar.
H	Saban, Sara, Dr. psychol.	Brain Asymmetry and Attention: Classical Conditioning Experiments.

	Carlsten, Carl Thomas, Dr. philos.	God lesing – God læring. En aksjonsrettet studie av undervisning i fagtekstlesing.
	Dundas, Ingrid, Dr. psychol.	Functional and dysfunctional closeness. Family interaction and children's adjustment.
	Engen, Liv, Dr. philos.	Kartlegging av leseferdighet på småskoletrinnet og vurdering av faktorer som kan være av betydning for optimal leseutvikling.
2000 V	Hovland, Ole Johan, Dr. philos.	Transforming a self-preserving "alarm" reaction into a self-defeating emotional response: Toward an integrative approach to anxiety as a human phenomenon.
	Lillejord, Sølvi, Dr. philos.	Handlingsrasjonalitet og spesialundervisning. En analyse av aktørperspektiver.
	Sandell, Ove, Dr. philos.	Den varme kunnskapen.
	Oftedal, Marit Petersen, Dr. philos.	Diagnostisering av ordavkodingsvansker: En prosessanalytisk tilnærmingsmåte.
H	Sandbak, Tone, Dr. psychol.	Alcohol consumption and preference in the rat: The significance of individual differences and relationships to stress pathology
	Eid, Jarle, Dr. psychol.	Early predictors of PTSD symptom reporting; The significance of contextual and individual factors.
2001 V	Skinstad, Anne Helene, Dr. philos.	Substance dependence and borderline personality disorders.
	Binder, Per-Einar, Dr. psychol.	Individet og den meningsbærende andre. En teoretisk undersøkelse av de mellommenneskelige forutsetningene for psykisk liv og utvikling med utgangspunkt i Donald Winnicotts teori.
	Roald, Ingvild K., Dr. philos.	Building of concepts. A study of Physics concepts of Norwegian deaf students.
H	Fekadu, Zelalem W., Dr. philos.	Predicting contraceptive use and intention among a sample of adolescent girls. An application of the theory of planned behaviour in Ethiopian context.
	Melesse, Fantu, Dr. philos.	The more intelligent and sensitive child (MISC) mediational intervention in an Ethiopian context: An evaluation study.
	Råheim, Målfrid, Dr. philos.	Kvinners kroppserfaring og livssammenheng. En fenomenologisk – hermeneutisk studie av friske kvinner og kvinner med kroniske muskelsmerter.
	Engelsen, Birthe Kari, Dr. psychol.	Measurement of the eating problem construct.
	Lau, Bjørn, Dr. philos.	Weight and eating concerns in adolescence.
2002 V	Ihlebæk, Camilla, Dr. philos.	Epidemiological studies of subjective health complaints.
	Rosén, Gunnar O. R., Dr. philos.	The phantom limb experience. Models for understanding and treatment of pain with hypnosis.

	Høines, Marit Johnsen, Dr. philos.	Fleksible språkrom. Matematikklæring som tekstutvikling.
	Anthun, Roald Andor, Dr. philos.	School psychology service quality. Consumer appraisal, quality dimensions, and collaborative improvement potential
	Pallesen, Ståle, Dr. psychol.	Insomnia in the elderly. Epidemiology, psychological characteristics and treatment.
	Midthassel, Unni Vere, Dr. philos.	Teacher involvement in school development activity. A study of teachers in Norwegian compulsory schools
	Kallestad, Jan Helge, Dr. philos.	Teachers, schools and implementation of the Olweus Bullying Prevention Program.
H	Ofte, Sonja Helgesen, Dr. psychol.	Right-left discrimination in adults and children.
	Netland, Marit, Dr. psychol.	Exposure to political violence. The need to estimate our estimations.
	Diseth, Åge, Dr. psychol.	Approaches to learning: Validity and prediction of academic performance.
	Bjuland, Raymond, Dr. philos.	Problem solving in geometry. Reasoning processes of student teachers working in small groups: A dialogical approach.
2003 V	Arefjord, Kjersti, Dr. psychol.	After the myocardial infarction – the wives' view. Short- and long-term adjustment in wives of myocardial infarction patients.
	Ingjaldsson, Jón Þorvaldur, Dr. psychol.	Unconscious Processes and Vagal Activity in Alcohol Dependency.
	Holden, Børge, Dr. philos.	Følger av atferdsanalytiske forklaringer for atferdsanalysens tilnærming til utforming av behandling.
	Holsen, Ingrid, Dr. philos.	Depressed mood from adolescence to 'emerging adulthood'. Course and longitudinal influences of body image and parent-adolescent relationship.
	Hammar, Åsa Karin, Dr. psychol.	Major depression and cognitive dysfunction- An experimental study of the cognitive effort hypothesis.
	Sprugevica, Ieva, Dr. philos.	The impact of enabling skills on early reading acquisition.
	Gabrielsen, Egil, Dr. philos.	LESE FOR LIVET. Lesekompetansen i den norske voksenbefolkningen sett i lys av visjonen om en enhetsskole.
H	Hansen, Anita Lill, Dr. psychol.	The influence of heart rate variability in the regulation of attentional and memory processes.
	Dyregrov, Kari, Dr. philos.	The loss of child by suicide, SIDS, and accidents: Consequences, needs and provisions of help.
2004 V	Torsheim, Torbjørn, Dr. psychol.	Student role strain and subjective health complaints: Individual, contextual, and longitudinal perspectives.
	Haugland, Bente Storm Mowatt Dr. psychol.	Parental alcohol abuse. Family functioning and child adjustment.

	Milde, Anne Marita, Dr. psychol.	Ulcerative colitis and the role of stress. Animal studies of psychobiological factors in relationship to experimentally induced colitis.
	Stornes, Tor, Dr. philos.	Socio-moral behaviour in sport. An investigation of perceptions of sportspersonship in handball related to important factors of socio-moral influence.
	Mæhle, Magne, Dr. philos.	Re-inventing the child in family therapy: An investigation of the relevance and applicability of theory and research in child development for family therapy involving children.
	Kobbeltvedt, Therese, Dr. psychol.	Risk and feelings: A field approach.
2004 H	Thomsen, Tormod, Dr. psychol.	Localization of attention in the brain.
	Løberg, Else-Marie, Dr. psychol.	Functional laterality and attention modulation in schizophrenia: Effects of clinical variables.
	Kyrkjebø, Jane Mikkelsen, Dr. philos.	Learning to improve: Integrating continuous quality improvement learning into nursing education.
	Laumann, Karin, Dr. psychol.	Restorative and stress-reducing effects of natural environments: Experiencal, behavioural and cardiovascular indices.
	Holgersen, Helge, PhD	Mellom oss - Essay i relasjonell psykoanalyse.
2005 V	Hetland, Hilde, Dr. psychol.	Leading to the extraordinary? Antecedents and outcomes of transformational leadership.
	Iversen, Anette Christine, Dr. philos.	Social differences in health behaviour: the motivational role of perceived control and coping.
2005 H	Mathisen, Gro Ellen, PhD	Climates for creativity and innovation: Definitions, measurement, predictors and consequences.
	Sævi, Tone, Dr. philos.	Seeing disability pedagogically – The lived experience of disability in the pedagogical encounter.
	Wiium, Nora, PhD	Intrapersonal factors, family and school norms: combined and interactive influence on adolescent smoking behaviour.
	Kanagaratnam, Pushpa, PhD	Subjective and objective correlates of Posttraumatic Stress in immigrants/refugees exposed to political violence.
	Larsen, Torill M. B. , PhD	Evaluating principals` and teachers` implementation of Second Step. A case study of four Norwegian primary schools.
	Bancila, Delia, PhD	Psychosocial stress and distress among Romanian adolescents and adults.
2006 V	Hillestad, Torgeir Martin, Dr. philos.	Normalitet og avvik. Forutsetninger for et objektivt psykopatologisk avviksbegrep. En psykologisk, sosial, erkjennelsesteoretisk og teorihistorisk framstilling.
	Nordanger, Dag Øystein, Dr. psychol.	Psychosocial discourses and responses to political violence in post-war Tigray, Ethiopia.

	Rimol, Lars Morten, PhD	Behavioral and fMRI studies of auditory laterality and speech sound processing.
	Krumsvik, Rune Johan, Dr. philos.	ICT in the school. ICT-initiated school development in lower secondary school.
	Norman, Elisabeth, Dr. psychol.	Gut feelings and unconscious thought: An exploration of fringe consiousness in implicit cognition.
	Israel, K Pravin, Dr. psychol.	Parent involvement in the mental health care of children and adolescents. Emperical studies from clinical care setting.
	Glasø, Lars, PhD	Affects and emotional regulation in leader-subordinate relationships.
	Knutsen, Ketil, Dr. philos.	HISTORIER UNGDOM LEVER – En studie av hvordan ungdommer bruker historie for å gjøre livet meningsfullt.
	Matthiesen, Stig Berge, PhD	Bullying at work. Antecedents and outcomes.
2006 H	Gramstad, Arne, PhD	Neuropsychological assessment of cognitive and emotional functioning in patients with epilepsy.
	Bendixen, Mons, PhD	Antisocial behaviour in early adolescence: Methodological and substantive issues.
	Mrumbi, Khalifa Maulid, PhD	Parental illness and loss to HIV/AIDS as experienced by AIDS orphans aged between 12-17 years from Temeke District, Dar es Salaam, Tanzania: A study of the children's psychosocial health and coping responses.
	Hetland, Jørn, Dr. psychol.	The nature of subjective health complaints in adolescence: Dimensionality, stability, and psychosocial predictors
	Kakoko, Deodatus Conatus Vitalis, PhD	Voluntary HIV counselling and testing service uptake among primary school teachers in Mwanza, Tanzania: assessment of socio-demographic, psychosocial and socio-cognitive aspects
	Mykletun, Arnstein, Dr. psychol.	Mortality and work-related disability as long-term consequences of anxiety and depression: Historical cohort designs based on the HUNT-2 study
	Sivertsen, Børge, PhD	Insomnia in older adults. Consequences, assessment and treatment.
2007 V	Singhammer, John, Dr. philos.	Social conditions from before birth to early adulthood – the influence on health and health behaviour
	Janvin, Carmen Ani Cristea, PhD	Cognitive impairment in patients with Parkinson's disease: profiles and implications for prognosis
	Braarud, Hanne Cecilie, Dr.psychol.	Infant regulation of distress: A longitudinal study of transactions between mothers and infants
	Tveito, Torill Helene, PhD	Sick Leave and Subjective Health Complaints
	Magnussen, Liv Heide, PhD	Returning disability pensioners with back pain to work

	Thuen, Elin Marie, Dr.philos.	Learning environment, students' coping styles and emotional and behavioural problems. A study of Norwegian secondary school students.
	Solberg, Ole Asbjørn, PhD	Peacekeeping warriors – A longitudinal study of Norwegian peacekeepers in Kosovo
2007 H	Søreide, Gunn Elisabeth, Dr.philos.	Narrative construction of teacher identity
	Svensen, Erling, PhD	WORK & HEALTH. Cognitive Activation Theory of Stress applied in an organisational setting.
	Øverland, Simon Nygaard, PhD	Mental health and impairment in disability benefits. Studies applying linkages between health surveys and administrative registries.
	Eichele, Tom, PhD	Electrophysiological and Hemodynamic Correlates of Expectancy in Target Processing
	Børhaug, Kjetil, Dr.philos.	Oppseding til demokrati. Ein studie av politisk oppseding i norsk skule.
	Eikeland, Thorleif, Dr.philos.	Om å vokse opp på barnehjem og på sykehus. En undersøkelse av barnehjemsbarns opplevelser på barnehjem sammenholdt med sanatoriebarns beskrivelse av langvarige sykehusopphold – og et forsøk på forklaring.
	Wadel, Carl Cato, Dr.philos.	Medarbeidersamhandling og medarbeiderledelse i en lagbasert organisasjon
	Vinje, Hege Forbech, PhD	Thriving despite adversity: Job engagement and self-care among community nurses
	Noort, Maurits van den, PhD	Working memory capacity and foreign language acquisition
2008 V	Breivik, Kyrre, Dr.psychol.	The Adjustment of Children and Adolescents in Different Post-Divorce Family Structures. A Norwegian Study of Risks and Mechanisms.
	Johnsen, Grethe E., PhD	Memory impairment in patients with posttraumatic stress disorder
	Sætrevik, Bjørn, PhD	Cognitive Control in Auditory Processing
	Carvalhosa, Susana Fonseca, PhD	Prevention of bullying in schools: an ecological model
2008 H	Brønnick, Kolbjørn Selvåg	Attentional dysfunction in dementia associated with Parkinson's disease.
	Posserud, Maj-Britt Rocio	Epidemiology of autism spectrum disorders
	Haug, Ellen	Multilevel correlates of physical activity in the school setting
	Skjerve, Arvid	Assessing mild dementia – a study of brief cognitive tests.

	Kjønniksen, Lise	The association between adolescent experiences in physical activity and leisure time physical activity in adulthood: a ten year longitudinal study
	Gundersen, Hilde	The effects of alcohol and expectancy on brain function
	Omvik, Siri	Insomnia – a night and day problem
2009 V	Molde, Helge	Pathological gambling: prevalence, mechanisms and treatment outcome.
	Foss, Else	Den omsorgsfulle væremåte. En studie av voksnes væremåte i forhold til barn i barnehagen.
	Westrheim, Kariane	Education in a Political Context: A study of Konwledge Processes and Learning Sites in the PKK.
	Wehling, Eike	Cognitive and olfactory changes in aging
	Wangberg, Silje C.	Internet based interventions to support health behaviours: The role of self-efficacy.
	Nielsen, Morten B.	Methodological issues in research on workplace bullying. Operationalisations, measurements and samples.
	Sandu, Anca Larisa	MRI measures of brain volume and cortical complexity in clinical groups and during development.
	Guribye, Eugene	Refugees and mental health interventions
	Sørensen, Lin	Emotional problems in inattentive children – effects on cognitive control functions.
	Tjomsland, Hege E.	Health promotion with teachers. Evaluation of the Norwegian Network of Health Promoting Schools: Quantitative and qualitative analyses of predisposing, reinforcing and enabling conditions related to teacher participation and program sustainability.
	Helleve, Ingrid	Productive interactions in ICT supported communities of learners
2009 H	Skorpen, Aina Øye, Christine	Dagliglivet i en psykiatrisk institusjon: En analyse av miljøterapeutiske praksiser
	Andreassen, Cecilie Schou	WORKAHOLISM – Antecedents and Outcomes
	Stang, Ingun	Being in the same boat: An empowerment intervention in breast cancer self-help groups
	Sequeira, Sarah Dorothee Dos Santos	The effects of background noise on asymmetrical speech perception
	Kleiven, Jo, dr.philos.	The Lillehammer scales: Measuring common motives for vacation and leisure behavior
	Jónsdóttir, Guðrún	Dubito ergo sum? Ni jenter møter naturfaglig kunnskap.
	Hove, Oddbjørn	Mental health disorders in adults with intellectual disabilities - Methods of assessment and prevalence of mental health disorders and problem behaviour
	Wageningen, Heidi Karin van	The role of glutamate on brain function

	Bjørkvik, Jofrid	God nok? Selvaktelse og interpersonlig fungering hos pasienter innen psykisk helsevern: Forholdet til diagnoser, symptomer og behandlingsutbytte
	Andersson, Martin	A study of attention control in children and elderly using a forced-attention dichotic listening paradigm
	Almås, Aslaug Grov	Teachers in the Digital Network Society: Visions and Realities. A study of teachers' experiences with the use of ICT in teaching and learning.
	Ulvik, Marit	Lærerutdanning som danning? Tre stemmer i diskusjonen
2010 V	Skår, Randi	Læringsprosesser i sykepleieres profesjonsutøvelse. En studie av sykepleieres læringserfaringer.
	Roald, Knut	Kvalitetsvurdering som organisasjonslæring mellom skole og skoleeigar
	Lunde, Linn-Heidi	Chronic pain in older adults. Consequences, assessment and treatment.
	Danielsen, Anne Grete	Perceived psychosocial support, students' self-reported academic initiative and perceived life satisfaction
	Hysing, Mari	Mental health in children with chronic illness
	Olsen, Olav Kjellevold	Are good leaders moral leaders? The relationship between effective military operational leadership and morals
	Riese, Hanne	Friendship and learning. Entrepreneurship education through mini-enterprises.
	Holthe, Asle	Evaluating the implementation of the Norwegian guidelines for healthy school meals: A case study involving three secondary schools
H	Hauge, Lars Johan	Environmental antecedents of workplace bullying: A multi-design approach
	Bjørkelo, Brita	Whistleblowing at work: Antecedents and consequences
	Reme, Silje Endresen	Common Complaints – Common Cure? Psychiatric comorbidity and predictors of treatment outcome in low back pain and irritable bowel syndrome
	Helland, Wenche Andersen	Communication difficulties in children identified with psychiatric problems
	Beneventi, Harald	Neuronal correlates of working memory in dyslexia
	Thygesen, Elin	Subjective health and coping in care-dependent old persons living at home
	Aanes, Mette Marthinussen	Poor social relationships as a threat to belongingness needs. Interpersonal stress and subjective health complaints: Mediating and moderating factors.
	Anker, Morten Gustav	Client directed outcome informed couple therapy

	Bull, Torill	Combining employment and child care: The subjective well-being of single women in Scandinavia and in Southern Europe
	Viig, Nina Grieg	Tilrettelegging for læreres deltakelse i helsefremmende arbeid. En kvalitativ og kvantitativ analyse av sammenhengen mellom organisatoriske forhold og læreres deltakelse i utvikling og implementering av Europeisk Nettverk av Helsefremmende Skoler i Norge
	Wolff, Katharina	To know or not to know? Attitudes towards receiving genetic information among patients and the general public.
	Ogden, Terje, dr.philos.	Familiebasert behandling av alvorlige atferdsproblemer blant barn og ungdom. Evaluering og implementering av evidensbaserte behandlingsprogrammer i Norge.
	Solberg, Mona Elin	Self-reported bullying and victimisation at school: Prevalence, overlap and psychosocial adjustment.
2011 V	Bye, Hege Høivik	Self-presentation in job interviews. Individual and cultural differences in applicant self-presentation during job interviews and hiring managers' evaluation
	Notelaers, Guy	Workplace bullying. A risk control perspective.
	Moltu, Christian	Being a therapist in difficult therapeutic impasses. A hermeneutic phenomenological analysis of skilled psychotherapists' experiences, needs, and strategies in difficult therapies ending well.
	Myrseth, Helga	Pathological Gambling - Treatment and Personality Factors
	Schanche, Elisabeth	From self-criticism to self-compassion. An empirical investigation of hypothesized change prosesses in the Affect Phobia Treatment Model of short-term dynamic psychotherapy for patients with Cluster C personality disorders.
	Våpenstad, Eystein Victor, dr.philos.	Det tempererte nærvær. En teoretisk undersøkelse av psykoterapautens subjektivitet i psykoanalyse og psykoanalytisk psykoterapi.
	Haukebø, Kristin	Cognitive, behavioral and neural correlates of dental and intra-oral injection phobia. Results from one treatment and one fMRI study of randomized, controlled design.
	Harris, Anette	Adaptation and health in extreme and isolated environments. From 78°N to 75°S.
	Bjørknes, Ragnhild	Parent Management Training-Oregon Model: intervention effects on maternal practice and child behavior in ethnic minority families
	Mamen, Asgeir	Aspects of using physical training in patients with substance dependence and additional mental distress
	Espevik, Roar	Expert teams: Do shared mental models of team members make a difference
	Haara, Frode Olav	Unveiling teachers' reasons for choosing practical activities in mathematics teaching

2011 H	Hauge, Hans Abraham	How can employee empowerment be made conducive to both employee health and organisation performance? An empirical investigation of a tailor-made approach to organisation learning in a municipal public service organisation.
	Melkevik, Ole Rogstad	Screen-based sedentary behaviours: pastimes for the poor, inactive and overweight? A cross-national survey of children and adolescents in 39 countries.
	Vøllestad, Jon	Mindfulness-based treatment for anxiety disorders. A quantitative review of the evidence, results from a randomized controlled trial, and a qualitative exploration of patient experiences.
	Tolo, Astrid	Hvordan blir lærerkompetanse konstruert? En kvalitativ studie av PPU-studenters kunnskapsutvikling.
	Saus, Evelyn-Rose	Training effectiveness: Situation awareness training in simulators
	Nordgreen, Tine	Internet-based self-help for social anxiety disorder and panic disorder. Factors associated with effect and use of self-help.
	Munkvold, Linda Helen	Oppositional Defiant Disorder: Informant discrepancies, gender differences, co-occuring mental health problems and neurocognitive function.
	Christiansen, Øivin	Når barn plasseres utenfor hjemmet: beslutninger, forløp og relasjoner. Under barnevernets (ved)tak.
	Brunborg, Geir Scott	Conditionability and Reinforcement Sensitivity in Gambling Behaviour
	Hystad, Sigurd William	Measuring Psychological Resiliency: Validation of an Adapted Norwegian Hardiness Scale
2012 V	Roness, Dag	Hvorfor bli lærer? Motivasjon for utdanning og utøving.
	Fjermestad, Krister Westlye	The therapeutic alliance in cognitive behavioural therapy for youth anxiety disorders
	Jenssen, Eirik Sørnes	Tilpasset opplæring i norsk skole: politikeres, skolelederes og læreres handlingsvalg
	Saksvik-Lehouillier, Ingvild	Shift work tolerance and adaptation to shift work among offshore workers and nurses
	Johansen, Venke Frederike	Når det intime blir offentlig. Om kvinners åpenhet om brystkreft og om markedsføring av brystkreftsaken.
	Herheim, Rune	Pupils collaborating in pairs at a computer in mathematics learning: investigating verbal communication patterns and qualities
	Vie, Tina Løkke	Cognitive appraisal, emotions and subjective health complaints among victims of workplace bullying: A stress-theoretical approach
	Jones, Lise Øen	Effects of reading skills, spelling skills and accompanying efficacy beliefs on participation in education. A study in Norwegian prisons.

2012 H	Danielsen, Yngvild Sørebø	Childhood obesity – characteristics and treatment. Psychological perspectives.
	Horverak, Jøri Gytre	Sense or sensibility in hiring processes. Interviewee and interviewer characteristics as antecedents of immigrant applicants' employment probabilities. An experimental approach.
	Jøsendal, Ola	Development and evaluation of BE smokeFREE, a school-based smoking prevention program
	Osnes, Berge	Temporal and Posterior Frontal Involvement in Auditory Speech Perception
	Drageset, Sigrunn	Psychological distress, coping and social support in the diagnostic and preoperative phase of breast cancer
	Aasland, Merethe Schanke	Destructive leadership: Conceptualization, measurement, prevalence and outcomes
	Bakibinga, Pauline	The experience of job engagement and self-care among Ugandan nurses and midwives
	Skogen, Jens Christoffer	Foetal and early origins of old age health. Linkage between birth records and the old age cohort of the Hordaland Health Study (HUSK)
	Leversen, Ingrid	Adolescents' leisure activity participation and their life satisfaction: The role of demographic characteristics and psychological processes
	Hanss, Daniel	Explaining sustainable consumption: Findings from cross-sectional and intervention approaches
	Rød, Per Arne	Barn i klem mellom foreldrekonflikter og samfunnsmessig beskyttelse
2013 V	Mentzoni, Rune Aune	Structural Characteristics in Gambling
	Knudsen, Ann Kristin	Long-term sickness absence and disability pension award as consequences of common mental disorders. Epidemiological studies using a population-based health survey and official ill health benefit registries.
	Strand, Mari	Emotional information processing in recurrent MDD
	Veseth, Marius	Recovery in bipolar disorder. A reflexive-collaborative exploration of the lived experiences of healing and growth when battling a severe mental illness
	Mæland, Silje	Sick leave for patients with severe subjective health complaints. Challenges in general practice.
	Mjaaland, Thera	At the frontiers of change? Women and girls' pursuit of education in north-western Tigray, Ethiopia
	Odéen, Magnus	Coping at work. The role of knowledge and coping expectancies in health and sick leave.
	Hynninen, Kia Minna Johanna	Anxiety, depression and sleep disturbance in chronic obstructive pulmonary disease (COPD). Associations, prevalence and effect of psychological treatment.
	Flo, Elisabeth	Sleep and health in shift working nurses

	Aasen, Elin Margrethe	From paternalism to patient participation? The older patients undergoing hemodialysis, their next of kin and the nurses: a discursive perspective on perception of patient participation in dialysis units
	Ekornås, Belinda	Emotional and Behavioural Problems in Children: Self-perception, peer relationships, and motor abilities
	Corbin, J. Hope	North-South Partnerships for Health: Key Factors for Partnership Success from the Perspective of the KIWAKKUKI
	Birkeland, Marianne Skogbrott	Development of global self-esteem: The transition from adolescence to adulthood
2013 H	Gianella-Malca, Camila	Challenges in Implementing the Colombian Constitutional Court's Health-Care System Ruling of 2008
	Hovland, Anders	Panic disorder – Treatment outcomes and psychophysiological concomitants
	Mortensen, Øystein	The transition to parenthood – Couple relationships put to the test
	Årdal, Guro	Major Depressive Disorder – a Ten Year Follow-up Study. Inhibition, Information Processing and Health Related Quality of Life
	Johansen, Rino Bandlitz	The impact of military identity on performance in the Norwegian armed forces
	Bøe, Tormod	Socioeconomic Status and Mental Health in Children and Adolescents
2014 V	Nordmo, Ivar	Gjennom nåløyet – studenters læringserfaringer i psykologutdanningen
	Dovran, Anders	Childhood Trauma and Mental Health Problems in Adult Life
	Hegelstad, Wenche ten Velden	Early Detection and Intervention in Psychosis: A Long-Term Perspective
	Urheim, Ragnar	Forståelse av pasientaggresjon og forklaringer på nedgang i voldsrate ved Regional sikkerhetsavdeling, Sandviken sykehus
	Kinn, Liv Grethe	Round-Trips to Work. Qualitative studies of how persons with severe mental illness experience work integration.
	Rød, Anne Marie Kinn	Consequences of social defeat stress for behaviour and sleep. Short-term and long-term assessments in rats.
	Nygård, Merethe	Schizophrenia – Cognitive Function, Brain Abnormalities, and Cannabis Use
	Tjora, Tore	Smoking from adolescence through adulthood: the role of family, friends, depression and socioeconomic status. Predictors of smoking from age 13 to 30 in the "The Norwegian Longitudinal Health Behaviour Study" (NLHB)
	Vangsnes, Vigdis	The Dramaturgy and Didactics of Computer Gaming. A Study of a Medium in the Educational Context of Kindergartens.

	Nordahl, Kristin Berg	Early Father-Child Interaction in a Father-Friendly Context: Gender Differences, Child Outcomes, and Protective Factors related to Fathers' Parenting Behaviors with One-year-olds
2014 H	Sandvik, Asle Makoto	Psychopathy – the heterogenety of the construct
	Skotheim, Siv	Maternal emotional distress and early mother-infant interaction: Psychological, social and nutritional contributions
	Halleland, Helene Barone	Executive Functioning in adult Attention Deficit Hyperactivity Disorder (ADHD). From basic mechanisms to functional outcome.
	Halvorsen, Kirsti Vindal	Partnerskap i lærerutdanning, sett fra et økologisk perspektiv
	Solbue, Vibeke	Dialogen som visker ut kategorier. En studie av hvilke erfaringer innvandrerungdommer og norskfødte med innvandrerforeldre har med videregående skole. Hva forteller ungdommenes erfaringer om videregående skoles håndtering av etniske ulikheter?
	Kvalevaag, Anne Lise	Fathers' mental health and child development. The predictive value of fathers' psychological distress during pregnancy for the social, emotional and behavioural development of their children
	Sandal, Ann Karin	Ungdom og utdanningsval. Om elevar sine opplevingar av val og overgangsprosessar.
	Haug, Thomas	Predictors and moderators of treatment outcome from high- and low-intensity cognitive behavioral therapy for anxiety disorders. Association between patient and process factors, and the outcome from guided self-help, stepped care, and face-to-face cognitive behavioral therapy.
	Sjølie, Hege	Experiences of Members of a Crisis Resolution Home Treatment Team. Personal history, professional role and emotional support in a CRHT team.
	Falkenberg, Liv Eggset	Neuronal underpinnings of healthy and dysfunctional cognitive control
	Mrdalj, Jelena	The early life condition. Importance for sleep, circadian rhythmicity, behaviour and response to later life challenges
	Hesjedal, Elisabeth	Tverrprofesjonelt samarbeid mellom skule og barnevern: Kva kan støtte utsette barn og unge?
2015 V	Hauken, May Aasebø	«*The cancer treatment was only half the work!»* A Mixed-Method Study of Rehabilitation among Young Adult Cancer Survivors
	Ryland, Hilde Katrin	Social functioning and mental health in children: the influence of chronic illness and intellectual function
	Rønsen, Anne Kristin	Vurdering som profesjonskompetanse. Refleksjonsbasert utvikling av læreres kompetanse i formativ vurdering

	Hoff, Helge Andreas	Thinking about Symptoms of Psychopathy in Norway: Content Validation of the Comprehensive Assessment of Psychopathic Personality (CAPP) Model in a Norwegian Setting
	Schmid, Marit Therese	Executive Functioning in recurrent- and first episode Major Depressive Disorder. Longitudinal studies
	Sand, Liv	Body Image Distortion and Eating Disturbances in Children and Adolescents
	Matanda, Dennis Juma	Child physical growth and care practices in Kenya: Evidence from Demographic and Health Surveys
	Amugsi, Dickson Abanimi	Child care practices, resources for care, and nutritional outcomes in Ghana: Findings from Demographic and Health Surveys
	Jakobsen, Hilde	The good beating: Social norms supporting men's partner violence in Tanzania
	Sagoe, Dominic	Nonmedical anabolic-androgenic steroid use: Prevalence, attitudes, and social perception
	Eide, Helene Marie Kjærgård	Narrating the relationship between leadership and learning outcomes. A study of public narratives in the Norwegian educational sector.
2015 H	Wubs, Annegreet Gera	Intimate partner violence among adolescents in South Africa and Tanzania
	Hjelmervik, Helene Susanne	Sex and sex-hormonal effects on brain organization of fronto-parietal networks
	Dahl, Berit Misund	The meaning of professional identity in public health nursing
	Røykenes, Kari	Testangst hos sykepleierstudenter: «Alternativ behandling»
	Bless, Josef Johann	The smartphone as a research tool in psychology. Assessment of language lateralization and training of auditory attention.
	Løvvik, Camilla Margrethe Sigvaldsen	Common mental disorders and work participation – the role of return-to-work expectations
	Lehmann, Stine	Mental Disorders in Foster Children: A Study of Prevalence, Comorbidity, and Risk Factors
	Knapstad, Marit	Psychological factors in long-term sickness absence: the role of shame and social support. Epidemiological studies based on the Health Assets Project.
2016 V	Kvestad, Ingrid	Biological risks and neurodevelopment in young North Indian children
	Sælør, Knut Tore	Hinderløyper, halmstrå og hengende snører. En kvalitativ studie av håp innenfor psykisk helse- og rusfeltet.
	Mellingen, Sonja	Alkoholbruk, partilfredshet og samlivsstatus. Før, inn i, og etter svangerskapet – korrelater eller konsekvenser?
	Thun, Eirunn	Shift work: negative consequences and protective factors

	Hilt, Line Torbjørnsen	The borderlands of educational inclusion. Analyses of inclusion and exclusion processes for minority language students
	Havnen, Audun	Treatment of obsessive-compulsive disorder and the importance of assessing clinical effectiveness
	Slåtten, Hilde	Gay-related name-calling among young adolescents. Exploring the importance of the context.
	Ree, Eline	Staying at work. The role of expectancies and beliefs in health and workplace interventions.
	Morken, Frøydis	Reading and writing processing in dyslexia
2016 H	Løvoll, Helga Synnevåg	Inside the outdoor experience. On the distinction between pleasant and interesting feelings and their implication in the motivational process.
	Hjeltnes, Aslak	Facing social fears: An investigation of mindfulness-based stress reduction for young adults with social anxiety disorder
	Øyeflaten, Irene Larsen	Long-term sick leave and work rehabilitation. Prognostic factors for return to work.
	Henriksen, Roger Ekeberg	Social relationships, stress and infection risk in mother and child
	Johnsen, Iren	«Only a friend» - The bereavement process of young adults who have lost a friend to a traumatic death. A mixed methods study.
	Helle, Siri	Cannabis use in non-affective psychoses: Relationship to age at onset, cognitive functioning and social cognition
	Glambek, Mats	Workplace bullying and expulsion in working life. A representative study addressing prospective associations and explanatory conditions.
	Oanes, Camilla Jensen	Tilbakemelding i terapi. På hvilke måter opplever terapeuter at tilbakemeldingsprosedyrer kan virke inn på terapeutiske praksiser?
	Reknes, Iselin	Exposure to workplace bullying among nurses: Health outcomes and individual coping
	Chimhutu, Victor	Results-Based Financing (RBF) in the health sector of a low-income country. From agenda setting to implementation: The case of Tanzania
	Ness, Ingunn Johanne	The Room of Opportunity. Understanding how knowledge and ideas are constructed in multidisciplinary groups working with developing innovative ideas.
	Hollekim, Ragnhild	Contemporary discourses on children and parenting in Norway. An empirical study based on two cases.
	Doran, Rouven	Eco-friendly travelling: The relevance of perceived norms and social comparison
2017 V	Katisi, Masego	The power of context in health partnerships: Exploring synergy and antagony between external and internal ideologies in implementing Safe Male Circumcision (SMC) for HIV prevention in Botswana

	Jamaludin, Nor Lelawati Binti	The “why” and “how” of International Students’ Ambassadorship Roles in International Education
	Berthelsen, Mona	Effects of shift work and psychological and social work factors on mental distress. Studies of onshore/offshore workers and nurses in Norway.
	Krane, Vibeke	Lærer-elev-relasjoner, elevers psykiske helse og frafall i videregående skole – en eksplorerende studie om samarbeid og den store betydningen av de små ting
	Søvik, Margaret Ljosnes	Evaluating the implementation of the Empowering Coaching™ program in Norway
	Tonheim, Milfrid	A troublesome transition: Social reintegration of girl soldiers returning ‘home’
	Senneseth, Mette	Improving social network support for partners facing spousal cancer while caring for minors. A randomized controlled trial.
	Urke, Helga Bjørnøy	Child health and child care of very young children in Bolivia, Colombia and Peru.
	Bakhturidze, George	Public Participation in Tobacco Control Policy-making in Georgia
	Fismen, Anne-Siri	Adolescent eating habits. Trends and socio-economic status.
2017 H	Hagatun, Susanne	Internet-based cognitive-behavioural therapy for insomnia. A randomised controlled trial in Norway.
	Eichele, Heike	Electrophysiological Correlates of Performance Monitoring in Children with Tourette Syndrome. A developmental perspective.
	Risan, Ulf Patrick	Accommodating trauma in police interviews. An exploration of rapport in investigative interviews of traumatized victims.
	Sandhåland, Hilde	Safety on board offshore vessels: A study of shipboard factors and situation awareness
	Blågestad, Tone Fidje	Less pain – better sleep and mood? Interrelatedness of pain, sleep and mood in total hip arthroplasty patients
	Kronstad, Morten	Frå skulebenk til deadlines. Korleis nettjournalistar og journaliststudentar lærer, og korleis dei utviklar journalistfagleg kunnskap
	Vedaa, Øystein	Shift work: The importance of sufficient time for rest between shifts.
	Steine, Iris Mulders	Predictors of symptoms outcomes among adult survivors of sexual abuse: The role of abuse characteristics, cumulative childhood maltreatment, genetic variants, and perceived social support.
	Høgheim, Sigve	Making math interesting: An experimental study of interventions to encourage interest in mathematics

2018 V	Brevik, Erlend Joramo	Adult Attention Deficit Hyperactivity Disorder. Beyond the Core Symptoms of the Diagnostic and Statistical Manual of Mental Disorders.
	Erevik, Eilin Kristine	User-generated alcohol-related content on social media: Determinants and relation to offline alcohol use
	Hagen, Egon	Cognitive and psychological functioning in patients with substance use disorder; from initial assessment to one-year recovery
	Adólfsdóttir, Steinunn	Subcomponents of executive functions: Effects of age and brain maturations
	Brattabø, Ingfrid Vaksdal	Detection of child maltreatment, the role of dental health personnel – A national cross-sectional study among public dental health personnel in Norway
	Fylkesnes, Marte Knag	Frykt, forhandlinger og deltakelse. Ungdommer og foreldre med etnisk minoritetsbakgrunn i møte med den norske barnevernstjenesten.
	Stiegler, Jan Reidar	Processing emotions in emotion-focused therapy. Exploring the impact of the two-chair dialogue intervention.
	Egelandsdal, Kjetil	Clickers and Formative Feedback at University Lectures. Exploring students and teachers' reception and use of feedback from clicker interventions.
	Torjussen, Lars Petter Storm	Foreningen av visdom og veltalenhet – utkast til en universitetsdidaktikk gjennom en kritikk og videreføring av Skjervheims pedagogiske filosofi på bakgrunn av Arendt og Foucault. *Eller hvorfor menneskelivet er mer som å spille fløyte enn å bygge et hus.*
	Selvik, Sabreen	A childhood at refuges. Children with multiple relocations at refuges for abused women.
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