

## Sticky stories about diffractive moments in classroom-education of becoming Early Childhood Teachers

**Keywords:** Diffraction, Reflection, Educators, Student teachers, Early Childhood Teacher Education (ECTE)

### Abstract

This article aims to challenge the prominence of reflexivity as a strategy for early childhood teachers to adopt by taking Norwegian Early Childhood Teacher Education (ECTE) as its focus. Observed micro-moments from a university classroom **generate multi-layered, multi-sensorial entangled narratives that address what reflection and diffraction are and what they do; where students, educator, materiality, space and affects intra-act**. Furthermore, the paper explores the ways in which teacher-educators and students in ECTE become-with the classroom and materiality, and in doing so, ideas about professionalism in early childhood education are opened out. By identifying the limitations of reflection, we go on to explore what working with diffraction might offer to reach alternative understandings. By placing a focus on seemingly unremarkable and routine events in the life of an ECTE classroom, we offer other, potentially more generative ways, to think about student teachers **and their further professional practice in kindergartens**.

## Introduction

Reflection has been, and still is a frequently discussed topic in literature about **practical work in kindergartens and in teacher education. Current debates about reflection** understood it as part of professional daily practices in early childhood institutions (e.g. Liljestrand and Hammarberg, 2017); concerned with development and differences (e.g. Barron et al., 2017); and as a point of discussion for newly qualified early childhood teachers (e.g. Farquhar and Tesar, 2016). However, reflection has long been a contentious concept with Fendler (2003: 20) describing reflective teaching as a ‘catch-all term’, that carries ‘mixed messages and confusing agendas’, and Klemp (2013: 42) arguing that reflection ‘belongs to an unclear linguistic category’. A recent review of the concept in teacher education concludes by questioning whether it is time: ‘to shift our focus from it as a required tool in programs of teacher education to the actual concept itself, and explore more fully its meaning and potential for enhancing professional practice in myriad contexts’ (Beauchamp, 2015: 137). Others have pointed to possibilities that become available when working with ideas of *diffraction* (e.g. Barad, 2007; Barad, 2014; Lafton, 2016; Lenz Taguchi, 2010; Lenz Taguchi, 2012), to investigate an event. We argue that diffraction offers alternative means to conceptualise teacher education in the university classroom, and specifically in early childhood teacher education (ECTE). We also argue that diffractive thinking holds greater potential to explore unforeseen, not-yet-known possibilities than critical reflection

allows for. This paper attempts a diffractive analysis of events in the university classroom in ECTE to explore the ways in which becoming early childhood teachers are prepared for work in kindergartens.

Diffraction is deployed in this paper as an overarching methodological framing, ‘in the sense of materially engaging in the world’ (Barad, 2007: 91) to investigate how materiality shapes teaching in university classrooms. In an attempt to open up ideas about professionalism in early childhood education we focus on how diffractions intertwine in classroom teaching in ECTE and how teacher-educators and students become-with materiality. Material-discursive-semiotic patterns are examined by being attentive to how data are made (Barad, 2007; Lenz Taguchi, 2012), how they spread out (Lafton, 2016) by undertaking a diffractive analysis (Lenz Taguchi, 2012; Jackson and Mazzei, 2013). Early childhood student-teachers’ preparations for future professional practice is discussed by focusing on differences and the agency of materiality. We do this by constructing a narrative based on micro-moments (Davies, 2014a) from observations in a classroom and then examine closely some possible diffractive moments. Reading Barad (2007) created opportunities to encounter observational data as fragmented but interwoven in unexpected and unanticipated ways. The central narrative strategy we work with in this paper is *sticky stories* which stresses how matter comes to matter in research in surprising ways. When the human is decentred from investigations, and attention is turned to events that cause us to stumble and wonder

new knowledge is generated that can take sedimented ideas about reflection to other places. Deploying sticky stories as a research strategy enabled us to trace the interconnections, and intra-actions between things, doings and ideas in and around university classrooms, and in processes of preparing for working in kindergartens. Crucially the strategy allowed us the opportunity to approach the concept of reflection afresh and contribute to extending existing debates about its central place in ECTE and ECE practice more broadly.

#### Diffraction in a world of mirrors

Reflection has become embedded within teacher education programmes and is established as a pedagogical tool to link academic knowledge to practical experiences in the education of kindergarten teachers. The aim is to foster practitioners who can reflect upon their kindergarten practice and question their professional judgement as a part of a professional developmental process (Kemmis, 2008: 288). Reflection is frequently in use in literature on **teacher** education, and has been a valued part of learning processes for many years (Beauchamp, 2015; Fendler, 2003; Moxnes, 2016). One example is, *the curriculum documents for Norwegian Early Childhood Teacher Education* (MER, 2012), which refers to 'reflection' 23 times. It describes reflection as a professional value, an assessment element, and uses concepts like 'reflection over ethical questions', 'professional reflection' and to do 'critical reflection'. **As such, the curriculum document appears** 'to embody mixed messages and confusing agendas' (Fendler, 2003:

20). The privileging of reflection in ECTE has often been understood to mirror what is considered good practice and a call to do more of the same (Søndenå, 2002). The concept in ECTE is criticised for **functioning** as a mirror and fostering normative practitioners who act and think in normative ways, instead of engaging **in exercises** which might result in fundamental changes to professional practice in early childhood contexts (Søndenå, 2002). **As an optical concept, mirroring** sheds light upon ‘something’, and reflects a picture back to something/someone (Barad, 2007).

However, researchers working with posthumanist ideas offer other possibilities by suggesting a related, optical phenomenon: *diffraction*. Diffraction offers an alternative methodology to reflection (e.g. see Barad, 2007; Barad, 2014; Lanås et al., 2015; Lenz Taguchi, 2012; Davies, 2014b; Osgood and Giugni, 2015; Lenz Taguchi, 2013), which is being taken up in research of kindergartens and higher education. One example is Otterstad (2012: 147) who urges investigations of pedagogical processes that move beyond critical reflection to include *diffraction* as a way of seeing teacher educators’ pedagogical processes. Another example is suggested by Lanås et al. (2015) who investigated theoretical reflections in teacher education in Finland. They **suggest that in the university classroom, diffraction concerns how theory passes and twirls around in the various spaces in the classroom. Consequently, teacher educators fail to fully recognise student-teachers diffracted theoretical utterances as theory. Further, this diffractive approach allows educators to re-evaluate what they have taken to be student**

disinterest, and to approach pedagogy in more expansive and experimental ways (Lanas et al., 2015: 10).

Diffraction can be described as what happens when a wave alters, bends, passes through an opening, or spreads out in different directions (Lafton, 2016: 36). Alternatively, when light strikes a prism, it appears to be white, but when the light hits the prism it diffracts, or separates the white light, so it appears changed and visible in multiple colours. According to Grütters (2011: 60) this can also be studied when a thought materializes through words and concepts. **In research that takes a diffractive approach to conceptualising early childhood practice a concern with the human subject (i.e. the teacher-educator, the student-teacher, the child) is displaced and instead attention to emotion, affect, materiality, space and place, and how they become entangled (and what they diffractively produce) is central. For example, also working in the Nordic context, Davies (2014b: 734) offers a diffractive analysis of anger and bodily affects within and between young children in kindergartens. Whilst Hultman and Lenz Taguchi (2010) investigate the relational field between young children and materiality, and Lafton (2016) traces the generative possibilities for early childhood practices when the agency of digital technology is accounted for. In our research we work with diffraction as a means ‘to see, feel, touch, taste, smell, hear, and otherwise sense phenomena with the mind’s eye’ (Barad, 2007: 388).**

By mapping sticky stories, we focus on how matter comes to matter in university classrooms in intra-active micro-moments (Davies, 2014a). We do this to offer a re-reading of the concept of pedagogical reflection and to attend to routine and everyday events in ECTE through a different lens. Diffractive analysis allows for a deeper engagement with approaches that are routinely taken to teacher education in ECEC and we explore what can happen when established and predictable ways of being reflective and doing reflection in ECTE are unsettled. The initial objective of the research was to identify how educators facilitate and work with reflection in their classroom. An observational study was conducted, involving nine teacher-educators in ECTE. Pages of observation-notes were gathered but in attempts to identify reflection in practice the slipperiness of the concept became apparent. Searching for the known (i.e. reflection in practice) incited curiosity about the not-known and the not-yet-known going on in these classrooms that transcended what was recognizable as reflection.

#### Pathways into diffractive methodology.

The methodological approach was inspired by Barad (2007) and Haraway (1997) who suggest that diffractive methodology is a critical practice for making differences. This article concerns differences that interrupt teaching in the university classroom, and its purpose is to inspire stakeholders to twist and twine with differences in thoughts, words and happenings when teaching students. Or, as Davies (2014b: 734) urges, to consider 'how something different comes to matter'. Diffractions plays a double role in this

study, both as something to be studied in the classroom, but also put to work through a diffractive methodology to undertake a rhizomatic analysis of classroom assemblages and entanglements. **In what follows, the data-collection process and a framework for undertaking diffractive analysis are discussed.**

### Pathways to data

This study works with observations of educators teaching pedagogy with students studying to become kindergarten-teachers. The intention was to investigate how these educators work to facilitate student teachers' capacities to critically reflect. However, in seeking to identify evidence of reflection the limitations of the concept quickly became apparent. The classroom became more than a site for human subjects to interact, and for pedagogical wisdom to be imparted from the knower to the novice. In a search for reflection we began to wonder about what else mattered in the ECTE classroom. The myriad intra-actions between people, place, space, affect and materiality interfered with, and ultimately generated, diffractive patterns that reconfigured what (and who) was taught/teaching in the classroom.

Initially **the intention was to** capture observations using a video camera. However, **this proposition** was met with uncomfortable silence. Nordstrom (2015) argues that recording devices in research remain largely unquestioned, but she urges that they should not be considered innocent. The suspicion and hostility towards a proposed



camera in this research was detectable through the students' silent protest. Recognising the affective charges of the not-yet-known camera, an alternative strategy (note taking) was introduced which **mitigated the** absentpresence (Haraway, 2008) of the camera and successfully secured the participation of the student teachers. The video camera, even as an imagined presence, brought about material-discursive affects (Nordstrom, 2015: 399) that shaped the research in unexpected ways. The research strategy relied upon memory and the noting of as many moments as possible from classroom teaching. The observation process comprised classroom-observations, small talks in classrooms, meeting rooms or in offices.

**Each research action becomes an ethical matter** (Davies, 2014b: 735) **and calls for us** to exercise what Barad (2007) terms response-ability; the ability to respond, became apparent. To be present as an observer in a classroom site raises different and difficult questions. **Moreover, what is included in the observations, and what is omitted or what excludes itself? Such questions are about practices of engagement.** And this again is to see ethics as intertwined with knowing and being, to an ethico-onto-epistem-ology (Barad, 2007: 185). Furthermore, this is questioning what matters, why it matters, and how what matters again affects what is possible to think and do. This is also to see ethical practices as being in encounters with others, human and non-human (Davies, 2016: 9).

Attuning to the minute details involved in undertaking research diverts attention to the in-between spaces and events. Conventional research guidelines (NESH, 2013) insist that the researcher should be aware of how she acted when contacting participants, informing them, behaving when observing, and how the data were treated thereafter. However, a shift to diffractive methodology necessitated a deeper consideration; the concern reached beyond what was jotted down to how it was noted, but also to the embodied relationship with the notes. Whilst the students were no longer central to the investigation they were a co-constitutive elements shaping and shaped by the classroom entanglements. Students were given written information beforehand, and permission to be there as a 'modest witness', without interrupting (Haraway, 1997) was granted. Both students and educators were invited to make known things that happened which they preferred not to be included. This research, with its concern with the human, non-human and more than human, demanded a heightened response-ability to all elements that make up the micro-moments that are under investigation beyond only humanist concerns.

#### Pathways to read data and detect sticky stories

To see how matter comes to matter, a diffractive mode of analysis was deployed. This analytic strategy does not carry predetermined methods, but allows for experimentation, and it requires the researcher to let analytical processes tune in on ways that are 'sufficiently attentive to the details of the phenomenon' (Barad, 2007: 73). Throughout

this research study, which has shifted and mutated over time, thinking with theory at each stage has provided generative possibilities (St.Pierre and Jackson, 2014: 717) to reconceptualise reflection in ECTE. Such an approach views theory as forces that move the analyses away from mechanical coding towards a diffractive reading. A reading that spreads out thoughts and meaning that again creates different, unpredictable and productive emergences (Mazzei, 2014: 742). When witnessing teaching, analysing data, and through the process of making text out of data different theoretical approach has influenced and changed the understanding of classroom teaching and what might go on in minor micro-moments.

However, data is not given as data. Except that, sometimes data ‘may cause us to stumble – and thereby *become* data. On such occasions, we should stay unbalanced for a moment longer than what is comfortable’(Brinkmann, 2014: 724). Specific memories from the classroom observations came to haunt and trouble us. Moments that caused us to stumble urged that we question and reconfigure what we thought we saw (or didn’t see) as reflection in ECTE. Staying with the trouble (Haraway, 2016) provided access to diffractive moments, or ‘micro-moments of being’ (Davies, 2014a: 15). In such small moments, different chaotic elements and happenings become entangled and loaded with difference. These micro-moments form sticky stories wherein the university classroom is more than a room. It is a site, or context, for student teachers learning, acting and playing. And also a place where different elements take part and intra-act as active

agents (Barad, 2007). According to MacLure (2013a: 660) data have ways of making themselves intelligible. The sticky stories induced wonder and trouble, and in attempts at diffractive analyses ideas about professional becomings of early years teachers are pushed further. Within these sticky stories there is space for the trouble to continue to circulate.

We use sticky stories as devices for undertaking diffractive analysis of reflection in ECTE classrooms. The agency of the researcher in a diffractive analysis lies in making new mappings instead of tracing the already known (Davies, 2014b: 734). We therefore search through the sticky story for moments where human, non-human and more-than-human become entangled through processes of intra-activity. Intra-activity as a concept relates to the relationship between various organism and matters. Barad (2014: 175) claims that '[d]ifferences are *within*; differences are formed through intra-activity in the making of 'this' and 'that' within the phenomenon that is constituted in their inseparability (entanglement)'. This strong intra-action in how different elements interfere, increasingly intertwine into the meaning-making process, because different patterns of unexpected diffractions were endlessly available within the entanglements. The sticky stories carry traces of what Renold and Mellor (2013: 24) describe as a 'situated body/object/sound assemblage', which again points to all the elements that exist in a particular event (Hohti, 2016: 5). A deep (re-)immersion in research fieldnotes

expose places where (sometimes unlikely) elements link closely. A diffractive re-examination of the data exposes ambiguity and uncertainty where once there had appeared to be a neat story about critical reflection and the becoming ECE teacher. Unfolding sticky stories in a diffractive mode opens up possibilities to rethink what comes to matter in ECTE.

### Sticky stories

In the sticky stories, an entanglement from a seemingly unremarkable and routine moment in a classroom where ICT-materiality, furniture, equipment and humans intra-act, is explored.

The projector warms up and throws a flickering light in front of the classroom, and soon a PowerPoint acquires the screen. Laptops are booted, and sounds from keyboard keys pressed down by fingers are coming from different directions. Desks, chairs, bags and heavy winter coats spread out on the floor. Desks filled up with laptops, books, bottles, cups, fruit, sweets, pens, notebooks, mobile phones create a sense of chaos. I am sitting on the backrow and forcing all my attention towards the teacher educator. My pen passes over paper, and letters form words that illustrate the teacher educators' use of questions, experiences, pauses and other teaching methods. I notice how the smooth, wavelike rhythm of her teaching comforts me. The flow of words is explaining bullet points on

PowerPoints, questions are asked to student teachers', students are answering, and the waves reach the shore and fade out. New bullet point, more explanations and practical examples, new questions, answers and the wave fades out again, and again.

The glow from a laptop a few rows in front of me attracts attention. Earphones are attached to the laptop with a conduit and an audio plug, connected to the student's ears. A new bullet point shoots onto the screen, more talk about theory. Suddenly the audio plug becomes detached and a booming, powerful sound emanates around the classroom. The rhythm changes, sounds, expressions hail the attention of others, who turn towards the laptop and stare. The student teacher seems so engrossed by what is happening on the screen that it takes some time before she notices the change of sound source, and the eyes of fellow students resting upon her and the laptop.

The teacher educator begins to move her body over bags and pushes forward between desks and students. Furniture, bags and other equipment intra-acting with her movements, and she has to slow down. I am anxiously watching. This stirs strong feelings of sympathy for the educator, and wonderings about the student's motivation. The student finds the cause of the error and plugs the audio plug back in, before the educator reaches her desk. Although I am angered by the students' actions and lack of attention to the lesson. This anger is not shared

by the educator, instead I am left puzzled when the educator asks the student, with a friendly voice and sympathetic smile, if there was some serious harm done by the students' equipment. I cannot see or hear any reply from my location, but the educator gives the student a smile and climbs back to continue her teaching.

The situation carries possible moments that might activate reflection, but it also carries diffractive possibilities (Davies, 2014b: 739), due to how elements interfere within each other, and open up for differences. In what follows, this sticky story will be made more intelligible, by being opened up and further diffracted.

### [Re-mapping the laptop-intra-action](#)

By making use of what Mazzei (2014: 744) describes as 'entering the assemblage, of making new connectives' or 'reading-the-data-while-thinking the theory', this multi-layered micro-moment is read through theory and connected to other events both within and beyond the classroom. Barad (2007: 25) explains this as reading insights from different areas through one another. A diffractive analysis is according to Lenz Taguchi and Palmer (2013: 676) a 'wave-like motion that takes into account that thinking, seeing and knowing are never done in isolation but are always affected by different forces coming together'. Through the sticky stories different forces come together in different constellations over and over again. The continued shooting out of new bullet points,

various sounds from electronic equipment, human artefacts: words, glances, bodily movements and furniture and equipment filling up the room. The sticky story is open to a mapping of ‘situated body/object/sound assemblage (Renold and Mellor, 2013: 24), which again is intended to take us beyond what we think we see and know and instead to be open to see what happens when materiality is focused.

The agency of the laptop draws attention to experiences from meetings and seminars for employees in the university-sector. A laptop, tablet or mobile phone takes part and influences the owners, and often bystanders’ focus in meetings. By reading this together with the sticky story, intra-actions, like engagements between human-and non-human become visible (Barad, 2007). The student-laptop-earphones-audio plug entangle, but also how easily teacher educators intertwine with their tablets/phones/laptops in meetings. When the agency of materiality is the focus, it offers flattened-out non-hierarchical thinking. Something that moves the gaze away from only human activities. Materiality is not isolated, but can be viewed in cryptic patterns of movements and actions in relation to the human (Rautio, 2013: 379).

Reading-the-data-while-thinking the theory (Mazzei, op cit.,) takes us diffractively, to a news article from late summer 2016. The leader of a political party in Norway was discovered playing *Pokemon Go* on her mobile phone under the open hearing of the Armed Forces Long-Term Plan of the Standing Committee on Foreign Affairs and Defence. A photo of her playing caused great debate across Norwegian media. The



party leader was, from several quarters, accused of acting disrespectfully (VG, 24.08.2016). This situation shows some dominant discourses of what is permissible to think in a situation where human and electronic equipment interacts. The dominant view seems to characterize the politician (or the movie-watching student) as disinterested and failing to take seriously what is being discussed, and that the gaming-mobile, and laptop used on YouTube, or a movie channel, is a way to accelerate time and avoid paying due care and attention. The reading of data is crucial for where differences get made (Lenz Taguchi and Palmer, 2013: 676). Differences appear in the readings of these stories within each other. The laptop intra-acting with the student, and the mobile phone intra-acting with the politician brings differences to expected behaviour. The camera, catching the politician, and the revealing audio-plug created changes in what was expected. The mobile phone, the laptop, the camera and audio plug, the politician and the student became visible and emerge through the intra-action within each other (Barad, 2007: 88). In what follows, I will discuss this in the light of temptations.

### Re-mapping temptations

The classrooms was connected to the internet. A net filled with temptations and possibilities, just a few clicks away. The temptation to use the equipment for other purposes than study skills are available. The concept introduced here to raise diffractive questions (Mazzei, 2014), is inspired from Lather (2007) who works with *voluptuous*, when she offers different perspectives on validity in research. It is used here to discuss

materiality further. Voluptuous draws attention to ‘sensuous enjoyment, pleasure, sensuously pleasing or delightful’ (Dictionary.com). Lather (2007: 126) connects it to embodiment, incompleteness, tentativeness, engagement and self-reflexivity. The laptop/mobile/tablet as sensuous enjoyment, can offer pleasure, but from other perspectives, this enjoyment might also be a vision of incompleteness. Both student and politician followed their temptations and were noticed. Equipment and user of equipment acted and revealed actions through intra-actions. When some things come to matter, it might actively change the way things are (Davies, 2014a: 75), and the leader of the political party first faced massive criticism for playing with her phone. Although, her robust defence was that she listens better when she is engaged in something mindless, like playing. For the politician, this led to much media attention. For the student a few minutes in suspense pending the reaction, and perhaps uncertainty and fear of further consequences. The concept of voluptuous gives visions of a hyper-feminine, nearly sexualized force, something overwhelming, hard to escape, like the force to judge from just a visual image of a situation. To be aware of some things, like the earphones, and how a particular reading of the materiality interfered with assumptions and interpretations of the situation, shows how easy it is to be trapped in a specific mode of thinking (Davies, 2014b: 740).

Specific modes of thinking also generate more wonder. The actions of the teacher-educator when she arrived at the student’s desk is reminiscent of the ways that some

kindergarten teachers work in their interactions with young children. A desire to capture a child's attention activates a mode of being that foregrounds the performance of showing a keen interest in the child's immediate preoccupation; like the toy or other materiality that has captured their attention at that moment. The educator's pull towards the computer and the audio-plug inspires a diffractive move as it passes and twirls around. According to Barad (2014: 169) time is 'out of joint', theory and practice of meeting children might have been passed and twirled around to find re-expression in this encounter, together with the student's thoughts, bodily reactions, laptop, audio-plug etc. However, if the material is significant, can educators make use of such situations, open them to unravel the situation differently, and open up discussions?

Lather (2007) highlights that 'between the no longer and the not yet lies the possibilities of what was impossible under traditional regimes of truth' (Lather, 2007: 127). The educator climbing over bags and squeezing through narrow bench rows also interferes and opens for opportunities. In an agential realist sense the classroom environment is making itself intelligible (Lenz Taguchi and Palmer, 2013: 678) to the educator, and time is given through delays. Bags and furniture take part and intra-act with the educator, slow down her speed, and force different uses of her body. As humans we are responsible for our behaviour, and the bags and furniture can never take over the responsibility the educator and the student have, for themselves in meetings with others. As Rautio (2013: 402) points to, 'we just no longer have illusions that our part is any

grander than it is'. The educator nor the student are responsible for access to the internet, or the fact that an audio-plug loosens. There is just something sensuously pleasing and delightful in such moments. Next, we discuss another diffractive layering within the sticky stories.

### Re-mapping bullet-wonders

In this section we continue the search for wonder opening for the not known and the not-yet-known, unfolding, refolding and enfolding in the sticky stories, that transcended what might be recognized as reflection. We intend to draw the text away from what might feel comfortable and force it to stay unbalanced for a few moments (Brinkmann, 2014: 724). And also to shade into curiosity around monstrosity, or what MacLure (2013b: 229) suggests as 'the capacity to affect and be affected'. By making use of small personal stories, we stay unbalanced by playing on affective elements.

The wave-like communication between the educator and a group of students, illustrated in the sticky story, can be read as doing more of the same (Søndenå, 2002). When everyone agrees, the discussion fades out and a new bullet-point can take over. What else takes place in the classroom initiates that someone and something are invited into a discussion, and others are excluded from this ongoing educational encounter. Through studying diffractions, or the process of how differences are made, instead of reflection, opens for interferences in 'thinking-as-usual' (Davies, 2014a: 2). The production of

difference in diffractive processes are not necessarily when a new bullet-point shoots-out, but when we venture behind and beneath the shooting. Who finds themselves invited to participate arises when students enter the classroom, or when the projector warms up.

**Bullet-points as materiality can be understood as extending beyond mere matter.** The bullet-points are as such relational with space, architecture, educator, students, arts and sciences, in intensification of meaning making, and in the notion of efficient lecturing and transmission of knowledge. Osgood and Giugni (2015: 349) urge us to turn attention towards ‘the material-affective-semiotic entanglements of everyday lives’, to reconstitute understandings and to unsettle dominant ideas. PowerPoints, and the constant revealing or shooting out of different theoretical points, seems to transmit ideas of an effective pedagogical tool for ECTE. Braidotti (2013: 182) points to academics as ‘left to broken ideas, while information networks do the content provision and are increasingly autonomous in decision making’. Bullet-points of broken ideas. Educators as ‘mid-ranking executives in a business organization’ (Braidotti, 2013: 182). Educational methods, directed by demands for what the labour market needs. Information networks as policymakers and academics reduced to shooters, shooting out bullet-points.

When a bullet-point appears on a PowerPoint it draws attention to important information, so that students quickly are able to identify key issues and facts. New

bullet-points appear and conquer the classroom with words of wisdom; you ought to know this, or read that. The size of the black dot, or bullet-point, indicating the importance of the message. The size of a bullet-point caused by a bullet again depends on the bullet-size. The bullet takes me back in time to my teaching-practice in a kindergarten. I (Anna) was a newcomer, and it was lunchtime. I found a place together with some children around a small table. I invited myself into a conversation. In front of me, a four-year-old boy was silently watching. I gave him a smile and said 'hello'. He kept looking at me; lifted what was left of his sandwich, and pointed it towards me. A whispering sound: 'bang, bang'. I was hit by, I do not know how many, invisible bullets.

It is possible to make endless points to huge groups of students, especially if the educator stops asking questions and denies students opportunities to ask questions or offer comments in response to the bullet. Death by bullet-point? Who and where do these kinds of textual bullets hit? How does this lead to new or critical thought? Does it prepare students to go 'beyond discursive, normalising and regulating practice' (Renold and Mellor, 2013: 25), **or prepare them on their further practices in kindergartens?** What do bullet-points bring to associations in education? Bullet point? Bullet? The size of the weapon also indicates the recoil, or the retroactive effect, or force, acting backwards when firing a bullet. Barad (2014: 169) explaining that 'diffraction is untimely. Time is [...] diffracted, broken apart in different directions, non-contemporaneous with itself'.

Bang. To stay with wonders is not necessarily safe and comforting, it somehow shades into disgust and monstrosity (MacLure, 2013b: 229). Bullet. Death. School massacre. The horror of the bullet hits differently. We struggle with suggesting such monstrous bullet-diffractions, combining this with classroom teaching. Where to start up teaching after bullets? We leave this, just here, hit by the recoil from the bullet-point.

In what follows, we discuss how diffractions in a teacher-education classroom can open for understandings in which student teachers prepare for their future professional practice through seemingly unremarkable and routine events.

#### [Puzzlements within/against diffractions](#)

In the introduction, we argued that diffractive thinking holds greater potential to explore unforeseen, not-yet-known possibilities than critical reflection allows for. The narration of sticky stories goes beyond the curriculum concept of critical reflection, and scrutinises other possibilities by working with diffraction. However, reflection in ECTE is a complex concept for educators to make use of for much less than mirroring practice and theories. The sticky stories: the play with bullet-points, and the lap-top-student-politician intra-action, draw attention towards teaching as something known and predictable. The unfolding diffractive patterns challenge discourses about good learning practice, how a student teacher should act and what is expected from teacher educators (Lenz Taguchi and Palmer, 2013). To get closer to the not-yet-known, both the student-

laptop-educator-bags-furniture entanglement, and the educator-bullet points-computer-PowerPoints-students entanglement, become possible points of departure to challenge predictable thoughts. Matter and materiality give room for other dimensions **both in kindergarten practice and in ECTE**, dimensions where differences are of value as something to kick-start thinking or for materialising affects. The sticky stories engage in situated body/object/sound assemblages (Renold and Mellor, 2013) to offer different ways of seeing/thinking/hearing a given situation. Differences can be made intelligible for both educators and students if such situations become something to think with, not to proclaim right or wrong, but to generate different ways of understanding what is happening in ECTE **classrooms, and in kindergartens**.

Differences in this text also provoke questions about how bullet-points contribute to education, and how the internet plays out in intended and unintended ways and can help teacher educators to become more aware of their teaching strategies. Both student teachers and teacher educators enter the classrooms carrying years of multiple experiences with the education system. Education teaches us to sit still, or protest; to pay attention to, and maybe ignore lecturers, among other ways of thinking and acting in teaching. To go beyond the dominance of critical reflection in ECTE and to make use of the potential available within modes of diffractive thinking might take us beyond sedimented ways of being and doing becoming-teacher. On-going rethinking of what teaching is, and might otherwise be, is needed if we are to recognise the limitations of



critical reflexivity and the generative possibilities for diffractive readings of what we think we know is going on in the classroom.

Reading other texts and other narratives together-apart with the sticky stories opens to sensing difference from within (Barad, 2012: 77). **Embedded within this diffractive practice of cutting together-apart is the idea that all matter comes to matter; material entanglements are intra-active and all constituent elements make a difference in the world.** Such intertwinements carry fascinating forces that transform our thinking about teaching, students and materiality in education. Human intra-actions with the non-and-more-than-human interrupts everyday life, and it contains what Haraway (2008) terms ‘pastpresences’; the idea that the future is already present (Osgood and Giugni, 2015: 349). In a classroom, this invites us to constantly grapple with life as of the past, present and future. The classroom is, in itself, a site for everyday life. This paper has invited a consideration of what going beyond entrenched ideas about critical reflection might afford us. By revisiting concepts and practices that have become embedded in practical training; and that are then reinscribed in kindergartens we can question the primacy of critical reflection in ECTE. We can take a step back to reconsider the educator’s role beyond passing on (theoretical) knowledge, and we go on to invite teachers and students to consider diffraction as a mode of enquiry. Working diffractively can help teaching to exceed traditional patterns. When materiality functions as multiple performative agents, it breaks us free of a unilateral focus only on human factors. To scrutinize the situation,

or to stay with the trouble, of how furniture, bags and a laptop intra-act; how the smell from a cup of freshly brewed coffee interrupts; and how bullet-points are being shot out, all offer possibilities for future understandings of ECE teacher professionalism.

### [In-diffractions towards professionalism](#)

This paper has attended to the diffractive patterns that erupt and circulate in classrooms in ECTE programs. It has also sought to reconsider how educators, students and materiality become-with each other and so open up ideas about professionalism in early childhood education. An experimental analytic process inspired by different theoretical and methodological entries helps to illustrate materiality as playing an agentic part in ECTE classroom situations. Sticky stories offers an analytic device to explore how matter comes to matter in a university classroom. The discussion maps the multi-layered and interwoven patterns of diffraction that occur repeatedly, but in different ways, and persistently interrupt and intertwine in the classroom. By working with concepts and figures: intra-actions, voluptuous, and bullet points, the sticky stories unravel to offer an opened out discussion about how diffraction might contribute in viewing educators and student teachers as always in processes of becoming. To discover the classroom as a site for everyday life, and to constantly engage with the idea that future is already present also opens up possibilities to disrupt and reconfigure views on professional life and professionalism.

However, diffraction is constantly splitting and mutating to become something else, somewhere else. This endless movement and dynamism always produces something different. Constant change invites us to re-think teaching afresh in each event, and so urges us to re-think what is possible in a classroom. It is in such differences that diffraction has greater potential than reflection. Because diffraction offers us a capacity to think-with and to think differently and resist being drawn back to familiar modes of understanding; mirroring the known. Seemingly, unremarkable moments in classrooms offer halting places, where if we stay with the trouble, reconfigure, we are offered ways to make matter matter and to trace differences. Diffraction might be considered an additional strategy to reflection that holds the potential to expand and change understandings, and views on professionalism.

What if we end this twisting and turning by going back to the bullet-point diffractions of effective teaching and stay there a little longer? What if the sound from the earphones and pictures on the computer screen are empowering the student to dare to protest against effective pedagogy? And the educator climbing over bags and coats is appreciative of the possibility for change that the protest incites? What if the presence of a pile of paper, pen and researcher prevents the educator's attempts to make sense of the diffractive moment? Bang, the recoil hits back.

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