

Exploring Sense-Making Processes to Discover Storylines About Becoming a Mathematics and Science Teacher in Norway

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Abstract

In this paper, we analyse interviews using positioning theory to provide insight into how student teachers with diverse cultural backgrounds use storylines to make sense of becoming teachers during their short post-master program in Norway. Research points to the importance of a person's experiences and narrative of themselves in the process of developing a teacher identity. We describe four sense-making processes used for analysing how the student teachers referred to and argued around the meaning of practices, features, and moral rules when making sense of becoming mathematics and science teachers. Our results consist of both methodological insights in identifying storylines in interviews and empirical findings on parallel and conflicting storylines used as resources for positioning. An analytical focus on the student teachers' argumentation for consequences of actions and commitments to positions, made visible different combinations of storylines for similar positions. Further, we could see that a renegotiation of the meaning of positions was initiated by conflicting storylines. For teacher education, our results indicate the importance of making different positions and perspectives of being a teacher available to explore as part of developing a teacher identity.

Keywords: Positioning Theory, Sense Making, Storylines, Teacher Education

Introduction

The increased migration has created more diverse cultural backgrounds in schools. In many countries, the increasingly culturally diverse population is not reflected in the teaching profession (Santoro, 2015). Immigrant teachers can contribute to understanding different cultural perspectives and be important resources in schools. Due to different national requirements for becoming a teacher, however, many immigrant teachers need to requalify as teachers in the new country (Røed & Tkachenko, 2022; Zvorono, 2013). For instance, Zvorono (2013) describes the difficulties in getting a job as a mathematics teacher even for people who have an educational background and experience as a teacher from their home country. Further, Dewilde (2013) describes how the competency of immigrant bilingual teachers is often devalued when they get part-time employment

to ease the transition to monolingual mainstream teaching, instead of heaving the full responsibility as mainstream subject teachers.

In this paper, the focus is on a short post-master teacher education program in Norway where people with a master's degree in science, mathematics or engineering can qualify to become teachers. Such educational programs are important for the recruitment of mathematics and science teachers, and potentially immigrant teachers. These programs often consist of student teachers¹ from diverse groups when it comes to age, educational background, work experience, as well as being born in Norway or an immigrant. We talk in our research about the student teachers' cultural backgrounds in a broad sense (D'Ambrosio, 2016). How people look at the world is interrelated with the contexts they have experienced, such as living conditions, diverse professions, educational settings, and multilingualism.

However, there are challenges with short teacher education programs. For instance, research shows that the transformation of a person's professional identity from other professions to science teachers can be challenging (Molander & Hamza, 2018). Further, Larsson et al. (2020) showed that educational programs communicate fragmented images of what it means to be a science teacher. Larsson et al. (2020) identified different incommensurable discourse models that frame teacher education in terms of a primary goal, but that also devalue other aspects of teacher education. For instance, two of the models are the *Practically well equipped* and the *critically reflective* teacher models. In the *Practically well equipped model*, the aim of teacher education is seen as developing teachers that can manage teaching on a day-to-day basis. In this model, theory and theoretical concepts are often devalued and the school-based practice is highlighted as the most important part of teacher education. These are views also found among biology teachers (Sjøberg et al., 2020).

¹ The term "student teachers" is used for people enrolled in a teacher preparation program. The short post-master program referred to in this study includes courses in pedagogy, subject-specific didactic courses, and periods of practise-based work in schools.

For student teachers who are immigrants, there are additional challenges with understanding a new educational context and school culture (Bressler & Rotter, 2017; Janusch, 2015; Zvorono, 2013). Such challenges could be related to the teacher's responsibilities, the teacher–student relationship and different norms and values. For instance, as an immigrant mathematics teacher, Zvorono (2013) reports that she was surprised how Norwegian teachers relate to time as a limitless resource in class, even though it is very scarce. Janusch (2015) argues that cultural differences contribute to a challenge in re-establishing a professional teacher identity in a new country. Therefore, there is a need to better understand how teacher education can support these student teachers, and how they can become resources in both teacher education and schools.

In education research, a person's experiences and narrative of themselves have been described as important in the process of developing a teacher identity (Avraamidou, 2014; Darragh, 2016; Molander & Hamza, 2018; Sfard & Prusak, 2005). In such contexts, identity involves processes of gaining pedagogical content knowledge and participating in professional learning practices to get experiences of what it can mean to be a teacher. Positioning is a theoretical concept that is gaining more interest in education research referring to identity development (McVee, 2011). For example, Sfard and Prusak, (2005) investigate identity performances used for describing individuals' positionings as a teacher. Mosvold and Bjuland (2016) describe how positionings both support and hinder teacher identity development. Among other things, positioning theory has affordances for educational research by drawing attention to discursive practices (McVee, 2011). The theory connects individuals' views on the world to their actions. Thus, we want to explore this connection further in this paper to better understand how student teachers make sense of becoming teachers.

Aim and Research Questions

The aim of this study is to provide insight into how student teachers with diverse cultural backgrounds make sense of becoming teachers during a short post-master program in Norway. Positioning theory is used as a theoretical framework, with a special focus on storylines as

resources for positionings and sense-making processes (Davies & Harré, 1990). We present a comparative case study with seven student teachers with diverse cultural backgrounds. They all had master's degrees in mathematics and science before starting teacher education in Norway. Our research questions are:

- 1 What storylines do the student teachers share when making sense of becoming teachers?
- 2 How can the use of sense-making processes guide the analysis of interviews to make visible such storylines as resources for positionings?

Both authors of this paper have more than ten years of experience as science and mathematics teachers and teacher educators. The first author is Swedish and has experience teaching in both Sweden and Norway. The second author is Norwegian with experience teaching post-master teacher education courses. Also, the second author was the teacher of the course which is the empirical context of this paper.

Theoretical Framework

Positioning theory builds on a triad of interrelated social constructs to analyse interactions: positioning, communication act, and storyline (Herbel-Eisenmann et al., 2016). The triad foregrounds a joint construction of meaning in interactions and is related to the rights and duties that people draw on in interactions. Participants in an interaction bring with them a range of stories that carry perspectives of the world influenced by different contexts, expectations, and experiences (Davies & Harré, 1990).

Positioning is a process addressing a dynamic aspect of interaction that can make visible perspectives participants use when they communicate (Harré & Van Langenhove, 1991). With perspectives come values and beliefs of what rights and duties are expected or available in a context, reflected in the way the people position themselves and others. Multiple positionings can happen simultaneously. A given position can be accepted if a participant perceives the rights and duties the position represents as aligning with their own. There could also be a disagreement about

valid rights and duties, initiating a negotiation process and possible repositioning. Regardless, positionings are reciprocal, dynamic, and contextual processes.

Communication acts relate to the impact of actions that an individual chooses and is allowed to use depending on available positions in the situation (Harré & Van Langenhove, 1991).

Depending on how communication acts are perceived, new positions and perspectives can become available in the situation. In choices of communication acts the individual's agency is also of importance (Davies & Harré, 1990). For example, agency gives individuals the ability to reflect on their own positionings and actions and to act also contrary to moral rules.

Storylines are connected to experiences and known culturally-shared narratives that are influencing interpretations of communication acts and can be seen as sources for available positions (Herbel-Eisenmann et al., 2016). Since interpretations of communication acts can be done using different perspectives, multiple storylines can be activated in an interaction at the same time. The storylines can be both resources for enabling positioning and limiting factors depending on what expectations of rights and obligations that are shared or not.

Applying positioning theory in education research can be done in various ways and with different emphasis on positioning, storylines, or communication acts (Wagner & Herbel-Eisenmann, 2009). However, there is a methodological challenge of being explicit about what necessary features a narrative must have to be called a storyline or what positions are available (Herbel-Eisenmann et al., 2016). Being explicit about how storylines or positionings are identified is then of importance. Herbel-Eisenmann et al. (2015) addressed this issue by introducing scales of storylines and positionings to describe how discursive choices in the moment are influenced by experiences from practices at different levels or distances from the actual situation. For example, there can be storylines developed on a historical scale (decades) or a more bibliographical scale related to one's own lifetime. Complementing positioning theory with the idea of scales "can provide greater clarity regarding what people bring forth into current interactions from past

conversations” (p.194). In our work, we use sense-making processes as a guide to storylines connected to positions student teachers identify, explore, or engage in reflecting on becoming teachers.

The Multiplicity of Selves and Sense-Making Processes

The dynamic aspect of interactions is an essential principle in positioning theory originating from looking at the world and ourselves as dynamic (Davies & Harré, 1990). Sfard (2001) describes social interactions and communication with others as sources for getting new ideas and making sense of things in the world. Similarly, Davies and Harré (1990) write about the importance of others to make sense of or get to know the multiplicity of selves. Positioning happens from the perspectives of the people engaging in the interaction. When a person becomes aware of a range of possible perspectives through social experiences, interactions, and commitments, they can be more conscious of a multiplicity of I-positions (Linell, 2009). Subject positioning includes learning about and engaging in the repertoire of actions connected to the rights and duties of those using this repertoire (Davies & Harré). If a person becomes conscious of the positionings that are happening, it takes emotional engagement for that person to change the communication acts or to engage in a new subject position.

Following Davies and Harré (1990), it is through sense-making processes all human beings identify, explore, and learn the meaning of I-positions available in a context. People learn what categories are available in the context that one can either belong to or not, for example, mother/son or teacher/student. Participating in different practices, people connect features and meanings to the categories and learn about storylines that reveal different positions associated with rights and duties. By testing the repertoires of actions, people can further understand what it means to take different perspectives. All sense-making processes result in finding out more about the multiplicity of selves.

Methodology

In this section, we will present the empirical material, arguments for using sense-making processes in the analysis, and how sense-making processes have been identified in the process of analysis.

Empirical Material and the Interview Setting

The empirical material is from interviews with student teachers following a one-year post-master teacher education program in Norway. Data has been gathered from two cycles of the program during 2021 and 2022. In total seven student teachers participated voluntarily and not in connection to any course assignment. The participants were selected because they represented a variety of cultural backgrounds. As the instructor in this program and second author of this paper, Sjøberg conducted semi-structured interviews during the first semester of the program. Every interview lasted approximately 30 minutes. The interviews primarily focused on the student's educational background, choices to become a teacher, expectations of being a teacher, and their experiences from the teacher education program so far.

In this paper, we present an overview of the storylines we identified as resources for positionings. Using examples from two cases, we then show how the focus on sense-making processes made visible different combinations of storylines for similar positions and how conflicting storylines can initiate a renegotiation of the meaning of positions. The two example cases, Serena and Victor (names are pseudonyms), were chosen because they had been particularly articulate about their needs and challenges with the teacher education program. Serena is a student teacher in her 40s with immigrant background arriving from Southeastern Europe approximately ten years ago. She has teaching experience from upper secondary school in her home country and an educational background in food technology. Victor is relatively young, born in Norway and currently works as a mathematics teacher but needs to be formally qualified as a teacher. He

recently finished his last university degree and has a diverse educational background in mathematics and science. His master's degree is in biotechnology.

Sense-Making Processes as Analytical Tool within Positioning Theory

In an interview, mostly positionings of oneself and others that are part of one's experiences would be expected. The narratives from the interviewee can be seen as communication acts in relation to what the interviewee chooses to share or what the interview setting allows them to share. Analysing an interview can also relate to the question of what storylines can be seen as valid in this setting (Herbel-Eisenmann et al., 2015) since no one except the interviewer and the interviewee can challenge a position. As one way to address this challenge, we use the sense-making processes to guide the analysis of interviews to identify storylines used as resources for positionings. Following Davies and Harré (1990) we point out that the sense-making processes are not static or exclusive but can be in progress simultaneously influencing each other.

The four sense-making processes

In this section, we describe our interpretation of the sense-making processes adapted from Davies and Harré (1990) in more detail, here presented as four processes labelled as process a, b, c, and d. We also describe how we have identified the processes in the interviews. See Table 1 for examples.

Process a involves a person learning of categories to either belong to or be excluded from. The categories can be broad like gender or a citizen of a country or connected to a closer context such as teacher or parent. In our analysis categories related to becoming a teacher brought up by the student teachers were identified by looking at various pronouns and nouns in the interview transcript, for example connections to *I*, *you*, *we* and *one* together with descriptions of people.

Process b involves participation in different contexts through which meanings are given to the categories. The learning of different perspectives within categories is also about learning about available storylines and positions. Then subcategories can be connected to features such as good,

bad, lazy, or interested, making several positions available. In our analysis, desirable features and expectations of teacher education or being a teacher were noted. Also, contexts and practices expressed to have influenced such expectations were classified as *process b*.

Process c involves testing and exploring storylines or perspectives further in interactions in different contexts. Rights and duties associated with available positions are given meaning by trying out the repertoire of actions. This can, for example, involve trying out a profession or taking on a perspective to take an active part in a discussion. Multiple I-positionings can be tested, some creating interconnected positions, others creating contradictory positions. In our analysis, we investigated descriptions of experiences from participating in practices and how pronouns were used together with actions and their consequences. Further, argumentation involving conflicting perspectives within categories, or features of a (sub)category that the student teachers struggled to identify as their own were classified as *process c*.

Process d involves I-positioning. Choosing (consciously or not) to see oneself as part of a (sub-)category involves engaging in different perspectives and their repertoire of actions and storylines, seeing them as features of oneself. In our analysis, any kind of emotional connection to positionings related to how the student teachers talked about themselves was of interest here. Also, utterances involving if they saw themselves as being included or excluded from a category or having desired features or not were classified as *process d*.

Sense-making process	Features of the process, examples in italic
Process a	Categories: through pronouns (<i>I, you, we, one</i>), nouns and descriptions of people. <i>jeg snakket med lærer, praksislærer på ungdomsskole</i> <i>(I talked to teachers, the mentor teacher at lower secondary school)</i>

Process b	Contexts and practices or influential persons: through activities, desirable features, expectations, and experiences from being part of practices. <i>jeg hadde noen venner som hadde det samme som begynte som lærere</i> <i>(I had some friends with the same background who began teaching)</i>
Process c	Testing positionings with their duties and moral rules: Pronouns combined with verbs, actions and their consequences, autobiographical aspects, future choices, struggles or conflicting statements, <i>men generelt jeg kunne jo slutta på skolen eller skjært av tre år av utdannelsen min og fortsatt jobba som det jeg jobber som, men for elevene og for alle jo mer man kan jo bedre er det</i> <i>(but in general I could have left school or cut off three years of my education and still have the job I have, but for the students and for everyone the more you know the better)</i>
Process d	I-positionings within categories, emotional connection to positions, clear choices or taking a stand, accepting consequences, commitments, <i>jeg ser ikke for meg at det blir noe utfordrende for meg</i> <i>(I can't imagine it's going to be challenging for me)</i>

Table 1: Features of the sensemaking processes used for classifying processes in the analysis including one example per process from the empirical material.

The Process of Analysis

The interviews were first analysed by the first author of this paper and then discussed with the second author, who had transcribed the interviews. We recognize that our analysis, what details and available positions we have paid attention to, and how we have interpreted the student teachers' argumentations are influenced by our own backgrounds. Our interpretation is made from our perspectives and someone else might see things differently. So, we have followed advice from Herbel-Eisenmann et al., (2015) to describe methodological choices and to be explicit with the rationale behind our choices about which potential storylines to highlight. By describing the categories, features, perspectives, practices, and moral rules that we have identified, our interpretation of storylines and positions can be examined by others.

During the analysis process, we acknowledged that since experiences of categories are contextual (Davies & Harré, 1990) the format of the interview is interrelated to what

(sub)categories (process a and b) are addressed. Therefore, we decided to analyse processes a and b as a pair to find expectations and features associated with categories initiated by the interview questions or by the student teachers' own experiences. Creating a new sub-category would involve the interviewee bringing up slightly different expectations or a new feature of an already addressed category. Process a and b gave categories, features, and contexts to connect storylines to (Table 2).

	Example of findings
Categories	student, teacher, scientist, citizen,
Subcategories	student with a master's degree, Norwegian student teacher, science student, university teacher, mentor teacher, Norwegian teacher, working citizen, immigrant/native citizen
Features	independent, motivated, subject knowledge, strict, status, researching approach, responsible, good with people,
Contexts and practises	<i>private contexts</i> : family and friends, <i>formal contexts</i> : previous educational experiences, activities during teacher education, experiences from work-based learning,

Table 2: Categories, features, contexts and practises identified through processes a and b.

Similarly, we compared episodes involving processes b and c to discover moral rules, features of the repertoires of actions, and engagements with such actions. By following features, perspectives, practices, and moral rules connected to a (sub)category that recurred through the interview different storylines emerged. By focusing on the argumentation for consequences of subject positionings and personal commitments to positions (processes c and d) we found both differences and similarities in sources used for positioning.

Results

In this study, we are interested in what storylines student teachers share when making sense of becoming teachers (research question 1) and how the use of sense-making processes in the analysis of interviews can make visible such storylines (research question 2). We start by giving an overview of the main storylines around the categories 'Norwegian teacher' and 'Norwegian student teacher' identified in the interviews. We then report on a more detailed analysis of two cases, to

give examples of how the sense-making processes were used to make storylines visible in the interviews.

When the student teachers argued for considering teaching as a job while also having a master's degree in science or mathematics, they indicated storylines about *The status of a job is decided by salary and degree of higher education* and *Being a teacher is an important job for society* (explored in episodes 1 and 2 below). In trying to make sense of being a teacher several of the student teachers with immigrant backgrounds referred to a “Norwegian way” of being a teacher. They then shared a storyline that *The Norwegian way of being a teacher includes adapting to the pupils rather than pupils adapting to the teacher*. This storyline implies that Norwegian teachers have an alleged duty to motivate, support and “pamper” their pupils, including their parents, rather than the pupils adapting to the teacher and school system (explored further in episode 3).

In the argumentation around the category ‘Norwegian student teacher’, the participants expressed an expectation that *Teacher education should focus on practical classroom skills*: “Jeg forventer egentlig at det skal være litt mer ‘sånn skal dere gjøre når dere er i klasserommet’” (I expected that the focus would be more like ‘this is the way you are supposed to act in the classroom’). Several students, both immigrant and Norwegian-born, also highlighted the difficult language used in teacher education with a lot of theoretical concepts. Students with less experience of the practice in Norwegian schools expressed a need for more time to understand the language and activities during teacher education. Further, this kind of argumentation is in line with a storyline that *Teacher education is not suited for immigrant student teachers*: “De sier på pedagogikk så sier de at studiet er for alle...for de som ikke har erfaring fra skole men eh...da tenker jeg er det også for utenlandske studenter som ikke har gått på skole her.” (In the pedagogy course, they say that teacher education is for those with no experience from school, but...I think...is it also for immigrant students who have not attended school here).

In addition to these main storylines, our analytical focus on sense-making processes showed some parallel storylines. To illustrate the analytical process, we have chosen three episodes from two cases: Serena, a woman with immigrant background and Victor, a man born and raised in Norway. The first two episodes, one from Victor and one from Serena, relate to the position ‘being useful’ where they used a similar storyline. At the time, the student teachers expressed different perspectives within that storyline. The third episode involves Serena making sense of a position of ‘being strict’, a process influenced by her immigrant background. This episode is chosen as an example of the challenge of understanding the Norwegian school system many of the student teachers with immigrant backgrounds expressed. In all episodes, we will focus on features, perspectives, practices, and moral rules that we identified to give examples of how the sense-making processes guided our analysis throughout the interviews.

Episode 1: Being Useful – Victor

Having alternated between jobs and education, Victor talks about experiences related to several educational practices that influence his descriptions of what it means to be a teacher. His previous educational choices seem to be largely based on his interest in science and mathematics. The type of jobs his education might lead to, Victor expresses as opportunities for work he can choose from out of interest or to be useful. The teaching profession is then one of many possible jobs for him. He has considered a job in economics, in technology, or working as a researcher. Yet, there is a possibility of being useful as a teacher that he is drawn to (episode 1 lines 01–08)².

01	Så til slutt så havna jeg på læreryrket fordi jeg ja...viktig jobb.	So finally I ended up with the teaching profession because I well...important job
02	Synes folk er generelt for lite kritisk tenkende og intellektuelt nysgjerrige...	I think people generally are too little critically thinking and intellectually curious...
03	jeg prøver å fostre til det og egentlig etter mitt skjønn så er det sånn	I try to foster that and in my opinion it's like
04	leger og advokater og sånn står regna høyt	doctors and lawyers have a high status

² All translations to English are our own.

05	for meg så er den viktigste samfunnsrollen lærere gode lærere er...	for me the most important role in society is teacher good teachers...
06	ja vi lever i et kunnskapssamfunn jeg synes det er rart at ikke de har høyere sosioøkonomisk rang men	Yes we live in a knowledge society I think it's weird that they don't have higher socioeconomic status but
07	man overlever på det men sånn av viktighet så synes jeg kanskje den er øverst jeg	you survive on it but out of importance so I perhaps think it is the highest
08	folk er ikke for skarpe liksom og det trenger vi vi trenger en skarp befolkning...	people aren't too sharp right and we need that we need a sharp population...

Victor expresses features such as critical thinking and curiosity (line 02) as important to have as a citizen of Norway and for a teacher to promote (line 03). Also, subject knowledge is coming through as important (line 06). In positioning people as insufficiently curious or critical he is at the same time positioning himself as a 'knowledgeable person' with a duty to educate others. In this situation, Victor expresses two somewhat conflicting perspectives connected to a storyline, *The status of a job is decided by salary and degree of higher education*, that has developed on a historical scale. In the first perspective, doctors and lawyers are seen as high-status professions (line 04). In the second perspective, teaching is the most important job to have (line 05). When making sense of him choosing teacher education instead of another perhaps more well-paid engineering job, Victor seems to combine these perspectives with his duty to educate others as he sees himself as belonging to the category of knowledgeable people. By implying that teachers should have higher salaries (line 06) and that Norway needs more critical citizens (lines 02 and 08) Victor suggests a new storyline that *Impact on society is more important than the salary* (lines 05–07). When Victor is making sense of becoming a teacher, this new storyline in combination with his duty to educate people (lines 02 and 08), could be seen as sources that enable him to engage in positioning himself as 'being useful' for society.

Episode 2: Being Useful – Serena

When arriving in Norway Serena found it hard to get a relevant job related to food technology. She ended up as a shop assistant working both day and night shifts. Being a mother, she

found it challenging to combine working late with supporting her children. Serena describes the teaching profession as a job that can solve that challenge for her (Episode 2 lines 09–18).

09	det er ikke lett å finne jobb i en sånn bedrift...så jeg tenkte hvordan kan jeg gjøre meg mer synlig...	It's not easy to find a job in that kind of company...so I thought how can I become more visible
10	jeg liker å jobbe med barn og unge og snakke om mange ting...og undervise de	I like to work with kids and youth and to speak of many things...and teach them
11	men ja...så jeg bare prøver å gjøre meg mer synlig her...det er hovedpunktet...	but yeah...I try to become more visible here...that's the point
12	finne en jobb som jeg kan jobbe tidlig...fra til kl da til jeg er ferdig til klokka tre eller fire	find a job where I can work from early on...until I'm finished at three or four
13	komme hjem og være med barn...fordi nå jobber jeg på Kiwi og vanligvis sein vakt...	come home and be with the kids...because now I work at Kiwi normally late shifts so
14	så når de er i skole på skole...da er jeg på jobb...og når de kommer hjem jeg er på jobb	when they are at school...I am at work...and when they come home I am at work
15	så vi ser ikke hverandre...så det er hovedmotiv	so we don't see each other...so that's the primary motive
16	også å gjøre alt som jeg kan som det ja...prøve gjøre det alt kan så ja...	and to do all that I can do as it well...try to do what I can do
17	for jeg synes...kasserer kan være nesten alt må bare være over atten år gammel...(ler)	cause I think...to be a shop assistant you only need to be over 18 years old
18	og jeg synes jeg har mer kunnskap som kan brukes mer...så det er også et motiv	and I think I have more knowledge that could be used more...that is also a motive

When Serena argues why she wants to become a teacher, she expresses a drive of becoming more visible to society to get a different job (lines 09 and 11). Another argument is connected to a moral rule of being there more for her children (lines 13–15). Further, Serena is acknowledging her previous experiences of teaching including having characteristics and features that are important to have as a teacher (lines 10 and 18), including liking kids and having subject knowledge. Like Victor in episode 1, Serena wants to use her subject knowledge and contribute to society (line 18), expressing a perspective linked to the storyline *The status of a job is decided by salary and degree of higher education*. When describing the search for a more advanced job than working as a shop assistant (lines 16–18), she is implying a positioning of herself as a 'knowledgeable person'. However, Serena's argument indicates a different perspective than Victor's. She expresses having a right to a job that reflects her educational background (line 18). From that perspective, she can be

more visible and useful for society than she is now. Further, another storyline on a bibliographical scale is used in her argument about being useful. Serena is implying a storyline that *Teachers' working hours are positive for family life* (line 12). This storyline aligns with her moral rule of being there for her children. The two storylines and her wish to be more visible in society (lines 9 and 11) could be seen as the sources Serena uses to engage in the positioning as 'being useful' both for society and her family.

Episode 3: Being Strict – Serena

Norwegian is not Serena's native language. At the beginning of the interview, Serena talks about the challenge of understanding some words or following a fast conversation in Norwegian. Despite these difficulties, she states that having Norwegian as a second language is not an obstacle to completing teacher education. Instead, Serena refers to her experiences of being an older student and being brought up in a different cultural context. For example, she describes it as challenging to understand the expectations for tasks in teacher education courses not knowing the Norwegian school system. Further, Serena positions herself as being disciplined and hardworking. These are features she connects to her childhood and her mother's way of pushing her to complete things. So, despite challenges with understanding the system she tries to manage on her own. This feature is in strong contrast to her impression of the pupils in Norwegian schools. Before the next episode (episode 3, lines 19–28), Serena talks about students' motivation. Drawing on the storyline that *The Norwegian way of being a teacher includes adapting to the pupils rather than pupils adapting to the teacher*, she gives examples of how a student's desire and motivation to do things get a lot of focus in Norwegian schools. For example, she describes a phenomenon she calls 'nuffy nuff' referring to how Norwegian pupils are not motivated, and that it seems to be the teachers' task to motivate them. She is used to a school system where students are expected to strive and just do the work initiated by the teacher. In her opinion, Norwegian teachers pamper the students too much.

19	for eksempel...jeg liker ikke jeg syns at det er ikke ok å ha beina på bordet...	For instance...I don't like I don't think it's okay to have the feet up on the table
20	lærer som var min praksislærer han sa okey han gidder ikke om det men	My mentor teacher said okay he doesn't bother with that but
21	jeg synes det er litt urettferdig mot andre elever...hvorfor de skulle se skitne sko?	I think it's unfair to the other pupils...why should they need to see dirty shoes?
22	eller okey de bruker spillekort...på pause det er greit...det gjør vi alle men	or okay they are playing card games...in the break that's okay...we all do that but
23	når timene begynner vær så snill...sitte på plass ta det vekk...	when the class begins please...sit down and put it away...
24	og jeg var kanskje litt streng der...og	and perhaps I was a little strict... and
25	praksislærer sa okey jeg bare så hvor streng skal du bli...hvor lang går du...	my mentor teacher said okay I just saw how strict you are gonna be...how far will you go...
26	men de kan ikke spille...okey timene begynner...ferdig...ta alle sine kort...nå begynner vi med jobb /.../	but they can't play...okay class starts...done...take your cards away...now let's start working /.../
27	så men ikke så tja...nå jeg var ikke så streng fordi ja...prøver å kontrollere meg	so but not so hmm...now I wasn't that strict because...I'm trying to control myself
28	jeg prøver å gjøre det på norsk måte	I'm trying to do it the Norwegian way

In this episode, Serena expresses conflicting perspectives and sets of actions connected to a teacher's responsibility of correcting behaviour in the classroom. The mentor teacher's perspective (line 20) is presented as allowing students to sit however they want. Paying attention to such behaviour is then part of 'being strict' as a teacher. Serena describes her own perspective differently (lines 19, 23 and 26). In her argumentation (lines 21–22) she implies a moral rule where you show your respect to others through your own behaviour. Given the storyline Serena expressed before this episode, this moral rule could be linked to her experiences of practices living somewhere else before coming to Norway, and to a storyline that *Time in class is for studying*. Serena positions herself as being strict (line 24), engaging in the repertoire of actions she sees appropriate from that perspective. The mentor teacher challenges Serena's decisions to act on students' behaviour (line 25) arguing that these types of actions can involve other complications difficult to foresee. This challenge makes Serena consider renegotiating the meaning of 'being strict' involving self control (line 27). To be able to accept the mentor teacher positioning her as being strict, but still complying

with her moral rules about respect and what the time in the classroom should be used for, Serena adjusts her actions in a way that is expected as a Norwegian way of being a teacher (lines 27–28),

Discussion and Further Implications

In this study, we have identified several storylines student teachers with diverse cultural backgrounds draw on in positionings related to becoming a teacher. We have also shown how sense-making processes can be used in the analysis of interviews to find storylines. Focusing on sense-making processes in our analysis we were able to find features, perspectives, practices and moral rules the student teachers associated with being a teacher (processes a, b and c) that guided us to storylines. The analysis gave insight into both similarities and differences in the students' argumentation when making sense of perspectives and categories during the interview.

First, we pay attention to how the student teachers made sense of a similar position as a teacher ('being useful' in our examples), using slightly different perspectives and argumentation connected to a larger societal storyline (in our examples, *The status of a job is decided by salary and degree of higher education*). In the case of Victor in episode 1, the argument is about why he can settle for the teaching profession, even though he could have a better-paid job. In the case of Serena in episode 2, on the contrary, her argument is about why she deserves a better job than being a shop assistant and her role as a mother who wants to spend more time with her children. The student teachers' argumentation in episodes 1 and 2 are some of the examples we found that made it possible for us to consider the use of complementing storylines on a bibliographical scale closer to the participants' own situations (Herbel-Eisenmann et al., 2015). Comparable with previous research on developing a teacher identity (Darragh, 2016; Molander & Hamza, 2018) we see the importance of previous experiences when making sense of positions. In the student teachers' arguments about consequences of subject positionings and personal commitments (processes c and d), they shared examples of different personal needs or features influenced by their cultural backgrounds and different contexts (e.g., educational experiences, parent influences, friends). The

use of different combinations and scales of storylines as resources when the student teachers are making sense of a similar position suggests an interesting contribution to the research field.

Second, we note that several of the student teachers expressed an unfulfilled expectation of teacher education when using the storyline *Teacher education should focus on practical classroom skills*. This finding resonates with the practical well-equipped model described by Larson et al. (2020) and previous research by Sjøberg et al. (2020). However, our findings highlight the importance of immigrant students gaining knowledge of the practical context of teaching to understand the meaning of such classroom skills. For some of the students with immigrant backgrounds, their experiences within other school systems and less experience with Norwegian schools, together with the many theoretical concepts during teacher education, seemed to become a hindrance to positioning themselves as Norwegian teachers. This points to the challenge of developing a professional identity in a short time (Molander & Hamza, 2018) but also how to create learning opportunities that connect different parts of teacher education rather than fragment it (Larsson et al., 2020). It is important that teacher education continuously supports student teachers in their identity work, making positions and perspectives of being a teacher available to explore.

Third, we pay attention to how storylines and actions were adjusted when the student teachers made sense of conflicting perspectives (processes c and d). For example, Victor (episode 1) activated a new storyline to resolve conflicting perspectives when positioning himself as ‘being useful’. In the case of Serena (episode 3), we saw how a moral rule in combination with a need of learning the Norwegian way of being a teacher made her link new acts to the position ‘being strict’. Focusing on the consequences of actions (process c) made visible the argumentation that ended with a possible repositioning. Serena considered adjusting her actions to comply with the expectations of others. She expressed it as trying to teach ‘the Norwegian way’ but still upholding her own duties shaped by her cultural background. This situation with conflicting perspectives is an interesting finding that points to similarities with previous research about challenges with moving

between different school cultures (Bressler & Rotter, 2017; Janusch, 2015) and how Norwegian teachers relate to time (Zvorono, 2013). Conflicting perspectives that an individual meets could be addressed by using emotional arguments and references to previous experiences (Davies & Harré, 1990) or by adapting the interpretation of communication acts associated with positions (Harré & Moghaddam, 2003). If participation in teaching practices is seen as an important aspect of developing professional identity, then the process of conflicting perspectives and emotional engagement could be important to consider in teacher education. Participation and engagement do not only affect perceptions but influence actions and activate new storylines that might lead to the discovery of new features of being a teacher.

By choosing examples to illustrate the sense-making processes through features, perspectives, practices and moral rules, we as researchers are co-constructors of the meaning of being a teacher (Herbel-Eisenmann et al., 2016). The empirical examples could be interpreted as our prioritized perspectives and storylines. However, in our study, categories, practices and features were also activated and explored during the interview by the choice of interviewees. It is not possible to know the intent behind the choices of experiences and arguments the student teachers shared, but their choices can be interpreted as communication acts in the interview. The interview setting created a situation for the participants to make sense of their experiences. Within the pattern of question–answer, participants enact their agency in choosing what to bring up in the conversation (Davies and Harré, 1990). In this way, the student teachers are choosing how to portray themselves and their view of becoming a teacher.

By focusing on sense-making processes in our analytical process, we have been able to identify some storylines related to student teachers' sense-making of becoming teachers. For instance, the storyline *The Norwegian way of being a teacher includes adapting to the pupils rather than pupils adapting to the teacher*, points to cultural challenges with becoming a Norwegian teacher when you have an immigrant background, in line with previous research (Zvorono, 2013;

Janusch, 2015). Further, our findings point to challenges with teacher education programs for immigrant student teachers, visible in the storyline *Teacher education is not suited for immigrant student teachers*. Importantly, these challenges come in addition to the already existing challenges of transforming a professional identity (Molander & Hamza, 2018) and fragmented teacher education programs (Larsson et al., 2020). Our findings suggest that teacher education currently may not be serving student teachers who are not from the dominant group well and could more seriously consider how to do that. For instance, the results point to the importance of making different positions and perspectives of being a teacher available to explore in teacher education. In further educational research, the analytical approach presented in this paper may contribute to a deeper understanding of both agency and identity development during teacher education for different student teacher groups, including groups who are minorities. Further research could, for instance, focus on minority student teachers' storylines and explore how different perspectives on being a teacher can enrich learning opportunities for both students and educators during teacher education.

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