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Pressures and positions of need during the Swedish third-grade National Test in Mathematics

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This paper presents and discusses parts of a large-scale [1] ethnographical and longitudinal study that has followed the process of implementing the National Test in Mathematics for third graders (Ntm3) in Sweden during its first three years (2010, 2011, and 2012). Pupil talk from 2011 about pressure and what is at stake was used to construe three positions of need that might characterize pupils during the National Test in Mathematics in their third school year: the position of shame, the position of unfamiliarity, and the position of stress. How these might be handled in educational practices is discussed briefly.

Keywords: National test, pressure, mathematics, third grade, position of need.

INTRODUCTION

The National Test in Mathematics for third graders (hereafter called Ntm3) in Sweden was introduced in 2010 (Utbildningsdepartementet, 2012). Since this test in its current form is a new phenomenon, research is scarce. Levlin (2014) has investigated how reading and language skills in the second school year predict achievement on the National Test in Mathematics for third graders, test anxiety and its connection to achievement have also been examined (Nyroos, Bagger, Silfver, & Sjöberg, 2012), and the tests have been studied as a technology of disciplinary power (Foucault, 1980) exercised over children (Sjöberg, Silfver, & Bagger, 2015). Other research on tests for children of similar ages has shown that national tests can contribute to difficulties in mathematics (Sjöberg, 2006). There are ways of handling test anxiety, coping with stress, and learning test-taking skills (Sena, Lowe, & Lee, 2007), but these require identifying needs and pupils in need. The very concept of a pupil who needs support in mathematics is used and understood in a variety of ways in research, contributing to challenges in communicating and building knowledge about needs and support for these

pupils (Bagger & Roos, 2014). The concept of *need* is in this paper understood as a position that a pupil might move in and out of, depending on the situation and the individual or the environmental prerequisites (Silfver, Sjöberg, & Bagger, 2013). This paper looks further into some of the discursive prerequisites for developing the position of 'being a pupil in need'. The approach is to investigate pupils' perspectives from an ethnographic point of view. Hereby I strive to adopt an insider's perspective in the research by revealing the participants' perceived experiences and, through this, building an emic narrative. The pupils are then the source for the emerging story about being a pupil in need. Three focus areas guide this investigation in exploring how pupils are positioned and position themselves in terms of possible needs: (1) pupils' talk about the experience of pressure, (2) whether and how stakes are expressed by the pupils describing negative pressure, and (3) pupils' talk about the position of being in need. This paper represents a pilot study that elaborates on the methodology before it is applied in a larger sample of pupils at the same three schools. Larger numbers will make it possible to discuss issues of diversity and equity and to take socioeconomic factors into account.

NATIONAL TESTS IN SWEDEN

Educational reforms in which assessment and comparison of pupils have played key roles have become more common internationally in the last decades (Clarke, Madaus, Horn, & Ramos, 2000). One purpose of the testing is to identify pupils at risk of not achieving the educational targets (Wyatt-Smith & Castleton, 2005). Media often publicize the results, reporting how well schools perform in relation to each other and whether more or fewer pupils have succeeded. Thus, the tests sort and categorize not only pupils but also schools. This can be understood as part of an international trend in neoliberal educational policy, whereby schools are governed and govern through

the test (Hudson, 2011). Parents' choice of schools might then be described as a consumer's choice of education, where the child's knowledge is perceived as a product (Lange & Meaney, 2014). In this way, the discourse surrounding testing activates power relations between schools, teachers, and pupils.

Ntm3 has the purpose of both evaluating the pupil's level of knowledge and evaluating education at large. It also aims to support a just evaluation of pupils' knowledge by securing the equality in teachers' assessments (Björklund Boistrup, & Skytt, 2011). The third-grade National Test in Mathematics is taken by all pupils with few exceptions and requires approximately one month to administer. It consists of several subtests connected to different (but not all) parts of the curriculum. In addition, there initially is a self-evaluation section and a co-operation subtest. The test is administered and corrected by the classroom teacher. Afterwards, the schools' test results are saved in databases (SIRIS, Swedish Ministry of Education).

THE PUPIL IN NEED DURING TESTS

Pupils might experience standardized tests as a pressure on them, but whether the pressure is perceived as positive or negative varies. Negative pressure can increase failure rates and affect the learning progression because it threatens pupils' self-worth (Putwain, Connors, Woods, & Nicholson, 2012). Putwain and colleagues (2012) describe how stakes relate to negative pressure:

Higher stakes tests increase the threats to self-worth, unfamiliarity increases the uncertainty of being able to demonstrate competence and low competence beliefs increase the likelihood of failure, all of which result in the appraisal of tests as threatening rather than challenging. (p. 300)

That is, if pressure is negative, the pupil might fear or imagine that something is at stake, and this could contribute to pupils "in general" being transformed into pupils in educational needs. A need is not only constituted of what the individual wishes and asks for but is also a matter of necessity and depends on the situation at hand (McLeod, 2011). The need for support during tests can be explained as an occurring agency need that for some individuals remains also on other occasions and at other times but may also be caused by a dispositional educational need. An occurring need

may therefore be temporary or persistent and in some cases both. Teachers are good at detecting achievement but are less skilled at detecting what the pupil thinks about him- or herself (Urhahne, Chao, Florineth, Luttenberger, & Paechter, 2011); thus, it is crucial that research seek to clarify pupils' understandings of themselves. Research about how pupils position themselves in testing situations contributes to this end, since it may reveal some of the social dimensions of testing from the pupil's perspective and positions of need that are foreseen. Giving pupils support and equal chances of passing the test is especially urgent because reports indicate that the school system is segregating pupils, which might be seen in test scores and grades (see, e.g., Swedish Agency for Education, Swedish School Inspectorate, 2012). Drawing on Atweh, Graven, Secada, and Valero (2011), I understand the issue of providing high quality mathematics and equity as an ethical imperative that schools must address.

METHODOLOGY

Ethnographical data were produced before, during, and after the national test. Contextual facts were collected before the test regarding the municipalities, schools, and classes.

Data collection and selection

In order to access the pupils' firsthand experiences about the test, video-stimulated recall dialogues (VSRD) were conducted with pupils individually and video recorded (see Silfver, Sjöberg, & Bagger, 2013). The technique used in interviewing the children was inspired by Morgan (2007). Data from these interviews have been analysed, whilst other data from the project constitute a contextual background for understanding and interpreting the interviews. The pupils with the highest and the lowest test scores at three schools in one municipality (2011) were selected. Choosing these pupils presumably brought forward some of the critical issues regarding mathematics testing. The selection makes it possible to investigate prerequisites for needs regardless of achievements, gender, background, or skills. The schools ranged in size from medium to large, and their locations varied from inner-city to suburban and from lower class, immigrant-majority to native Swedish-speaking, middle-class areas. The selection of schools allows for the discussion of social justice and diversity, in addition to discourses in the area of test taking in both policy and practice.

Year 2011	Outer-city school		Inner-city school		Non-city school	
Pupil	Sofie	Ali	Ellen	Emmanuel	Anna	Sara
Passed subtests	All	None	All	None	All	None
Score (max 101)	87	55	89	19	97	75

Table 1: Pupils with the highest and the lowest test scores from three classes (2011) in three schools, from various socioeconomic settings (the names are fictional)

Analytical process

Data were examined using Transana, a computer software for encoding and analysing video and audio recordings. Analysis was performed in three steps, according to guidelines from Heath, Hindmarsh, and Luff (2010) and is displayed in Table 2. Clips were organized, after repeated reviews, into collections with open codes. Patterns, such as similarities and contradictions, were searched for between collections. Positions of need were construed as categories to summarize the patterns found. This is presented in the results. Examples are given of what was said.

Negative pressure was identified in the talk when pupils implied that they had felt uncomfortable and experienced disturbing thoughts about the test, math, and themselves. *Positive pressure* was identified when the talk was influenced by positive feelings, expectations about the test, math, and themselves. Whilst searching for things at stake, I applied Putwain and colleagues (2012) definition of *stakes* as

the real or imagined consequences of testing students’ academic credentials (test scores or grades), educational access (for example to a particular school) and educational progression/ability setting, and also for teachers professional status (e.g. from school league tables). (p. 291)

Instead of *teachers’ professional status*, I searched for *pupils’ status*.

Positioning and discourse as analytical lenses

Drawing on Foucault, one can understand discourse as constructing and constructed by individuals and society through systems of representation. Through these systems, knowledge, truth, and power are produced (Hall, 2001). An individual’s ability to speak is

regulated by discourse in determining how, when, and from what position people may speak (Davies & Harré, 2001). These positions depend on the discursive context, the participants themselves, and the activity at hand (Lofors-Nyblom, 2009). This means that the discourses in the test situation will govern possible positions of need and the ways that the test can be talked about. An important theoretical distinction is that a position of need is not the same thing as one pupil’s *being* in one fixed position of need. The concept is instead a construction of possible positions of need that a pupil may take on or be given in the test situation. One pupil’s talk might in this way contribute to several positions of need, depending on the position from which that pupil is talking. It is not the subject (pupil) who talks but the discourse that talks through the subject (Foucault, 1983).

RESULTS

Positions of need construed from pupils’ talk about pressure and stakes are presented in the following paragraphs. Positions of need were expressed only in regard to negative pressure. Positive pressure, along with what could be described as positions of ‘the good test taker,’ is also displayed. In pupil talk about positive pressure, no needs were apparent; neither was any talk about stakes.

Pressure as positive and the understanding of responsibility

Sofie and Ellen were both high achievers who talked about the test as interesting and the nervousness as stimulating. Ellen emphasized that loneliness and being on one’s own contributed to the feeling of positive pressure. These two girls were emphatic about positive aspects of the test. Ellen said, ‘The teachers want to see what we can do, so that we can achieve our goals.

Selection of pupils	Review 1	Review 2	Review 3: Analysis
Highest and lowest performing in class	Talk about pressure and test consequences	Talk about negative pressure and stakes involved	Positions of need during tests

Table 2: Process of analysis

I think it's really important—it's important to achieve goals in school, and you can do that if you take the test.' Ellen had great trust that the actual accomplishment of the test would help her reach her goals. And Sofie was very clear about where the responsibility for her development lay:

Because this test is for—I think it's for you to see what you already know and what you need to practise. And what the teachers will ... if they need to give someone more instruction and if they should be clearer on something ... So it's really the teachers that get to know if they did well or not.

Despite this outlook and the fact that Sofie had the highest score in her group, she referred to skilled boys in order to position herself as talented:

Yes, I think I had the fewest mistakes in the class, because there are two other boys that have other math books since they are so good ... [and] I had one mistake less than them.

Lack of curiosity regarding the test

Sara did not express pressure in either direction but thought that the math on the test was difficult. She implied that she might lose knowledge that is important to managing in life—for instance, 'if you have to go somewhere, or buy things in a store.' She also said that it could be fun to take the test because she was allowed to draw, something she liked to do. And it was fun to write the test because it was something unusual. Although she had the lowest scores, Sara passed all the tests. Her school's area was a white, middle-class neighborhood, and almost all its pupils spoke only Swedish.

Pressure as negative and what is at stake

In the talk about negative pressure, three different positions of need were construed: the position of stress, the position of shame, and the position of unfamiliarity. The talk also contains signs of things perceived as at stake. Of the six pupils, four talked about the test as pressuring them in negative ways and mentioned things being at stake.

The position of stress

Both high achievers (Anna) and low achievers (Emmanuel and Ali) reported having experienced anxiety and stress or disturbing thoughts in connection with the test. These emotions were felt in the

body, whilst only the high achiever Anna described stressful thoughts. Emmanuel said, 'I was nervous; my hands shook. It felt like they would write the wrong answer.' Anna talked about the fear of not being able to retrieve her knowledge whilst working on the test. Even though she was sure that she was good at math because adults had told her so, she was insecure about whether her knowledge could really be trusted:

But later on, I had a little panic ... so that I could barely ... I was still nervous, so I panicked because I was writing it. But exactly when you needed it [the knowledge] most and you needed ... to write the answer ... to remember the answer—then it flew out of your mind, and when you don't need it, it comes back. I got more than a little irritated.

Anna also vividly described how stressed she felt during the test and how she tried to handle these feelings. She was worried about not finishing in time and about making mistakes; several times she indicated that she was afraid of not being permitted to continue to the fourth grade. Her social belonging was at stake: 'If you didn't get the right answer, maybe then you would have to retake third grade. It felt like that.' At the same time, she understood that this was not the case: 'I know that it's not like that, but I just got that feeling, and it also felt like I would get a heart attack a little.' The feeling of potentially losing her social context grew whilst Anna was waiting for the results: 'Waiting for the results felt like waiting to know whether I had to retake third grade or could move on to grade four.' The stress may also have involved knowing that the test would be difficult and that the situation would demand concentration and intense thinking. Ali commented on this: 'It's hard, and you have to think really, really hard, and that might be tough.' He also spoke of finishing as a relief from pressure: 'Finally, I'm done, and now I'm free.'

The position of disappointment

Ali implied that knowledge might be lost if a pupil did not pass the test: he assumed that taking the test *in itself* generated mathematics learning. Along with this lost knowledge, his dignity would be at stake if he did not learn more, along with a potentially loss of social status:

I think you can embarrass yourself sometimes if you don't know it [math] ... also, if we answer questions ... and they say how much is one times

one or ten times ten, and when you don't know, then you might embarrass yourself.

He also mentioned another possible outcome of not succeeding in the test—namely, feelings of sadness: 'If you don't pass, you'll be sad and feel sorry that it didn't go well.'

The position of unfamiliarity

The fear of not knowing mainly involved feelings about scores. Both Ali and Anna said, 'What if I make a mistake?' Anna also worried about being able to finish in time; that is, she did not know whether she had enough time. Emmanuel spoke of uncertainty about his skill and his possible results. 'Will I pass this? (Interpreted as: I'm afraid I won't.)' This fear may have arisen partly because the test took place in an unknown situation. Anna said, 'Beforehand, I didn't know what to expect, what the test would look like, and I wasn't prepared.' This concern could be connected to Anna's fear of being unable to retrieve knowledge and putting her educational progress at stake.

DISCUSSION

The analysis of how pupils talked about pressure in order to study discursive prerequisites for positions of need in the test situation seems to have yielded rewarding results, since the pupils talk about pressure and stakes seem to give valuable information to possible educational needs in the test situation. To perform the same analysis in a larger sample of pupils might reveal still other positions of need, beyond the ones discussed here. Clearly, issues of power and governance were involved in the practice of test taking for the pupils in this article. They talked about the risk of losing social belonging, pride, and knowledge. Some critical gendered issues, as well as matters of diversity and social justice, are revealed, and it will be interesting to examine these further in a larger study. One conclusion from this limited sample, is that the test leads to a comparison and sorting of pupils. Pupils start to relate their achievements to those of others in order to understand their placement within the competitive discourse, which is more apparent in the multilingual schools. Comparisons were highlighted more often by the pupils in the multilingual schools, regardless of which kind of pressure they expressed. This implies that pupils on these schools are participating in a competitive discourse regarding scores which position them as having the potential

of 'not winning' or 'loosing'. In the suburban school in a middle-class and mainly Swedish-speaking area, neither of the pupils compared themselves with others. Instead, they talked about their knowledge as the focal point in the testing situation. Those pupils are in this way participants in a testing and learning discourse where their knowledge is at stake. Anna is a key informant since she had much to say about her experiences. It is an important methodological reflection that the boys who reported negative pressure and stakes did not manage the Swedish language very well, going to the multilingual schools. It could be that their test performance was hindered because of this problem, which might cause negative pressure. It might also be that if they had been interviewed by someone who could speak their language, they could have provided much more information.

The results suggest that the position of unfamiliarity could both lead to uncertainty about one's ability and derive from uncertainty about one's ability. One educational need here is to cultivate knowledge about skills and the test, before the test. Knowledge about skills could decrease the risk of test anxiety (Ahmed, Minnaert, Kuyper, & Van der Weerf, 2012), but that would require that the teacher learn whether pupils lack these insights and have these feelings. The test situation enhances the focus on scores, which might lead to a heightened risk that teachers will not notice how pupils think or feel about this issue (see Urhahne et al., 2011). This also applies to the position of shame. Talking about these feelings would most probably positively affect both the achievement in the testing situation and the overall learning situation. Tests can actually create good opportunities to talk about feelings of putting things at stake, not remembering, not knowing, and embarrassment. This might lead to a balancing of the test situation so that pupils' needs come to the fore—not only the needs of the test. Clarifying the purpose of the test, how it will be used, and how it is understood by the teacher could perhaps lead to a leveling of inequalities for the pupils.

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ENDNOTE

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