“Minoritised mathematics students are motivated by gratitude”: An analysis of storylines in Norwegian public media

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As part of a larger participatory research project, we examine storylines about mathematics education and students from minoritised cultures and/or languages in Norwegian news media. We identify some of the positionings construed in this public discourse to consider what kinds of positionings are made available in relationship to education and mathematics education. In particular, we focus on one storyline we found, “minoritised mathematics students are motivated by gratitude” because we hope to engage the MES community in exploring it with us.

In this paper, we investigate storylines about youth from minoritised cultures and/or languages in Norwegian news media to identify some positionings made available in this public discourse. News media concurrently reflects and influences public opinion on mathematics and mathematics education, and about migrated and Indigenous youth. We note here that we are aware that any wording that points to the youth whose storylines we are most interested in should be used with caution and great respect. The possibilities—nondominant, minority, othered, non-Norwegian, multicultural, etc.—all rest on attributions that are not always consensual, and they imply problematic power relationships or may feel stigmatising or unfamiliar to members of the groups themselves. In this paper, we use the word minoritised, though we recognise it too may be problematic.

Our investigation of news media launches the beginning of a longitudinal, participatory research project with teachers, administrators, community members, youth, and families to understand and enact the kinds of storylines that position for example newly arrived students and Indigenous youth in asset-based ways. We are motivated by the fact that these students’ opportunities to learn mathematics are often diminished in comparison to their majority group peers, especially in mathematics and mathematics education (Källberg, 2018;

We also know that the positioning presented in news media can affect individual students’ and groups of students’ identities (Mendick, 2005; Wagner, 2019), the relations with and expectations of mathematics education and thereby opportunities for mathematics learning and life choices.

**Storylines**

According to positioning theory, people interpret their experiences through storylines – through “lived stories for which told stories already exist” (Harré, 2012, p. 198) such as for instance a coach/athlete storyline. Davies and Harré (1999) pointed out that the multiple storylines at play “are organized through conversations around various poles, such as events, characters, and moral dilemmas. Cultural stereotypes like nurse/patient, conductor/orchestra, mother/son may be called on as a resource” (p. 39).

Storylines make positions available, which could be either accepted or resisted. For example, a parent could position himself as a teacher in a teacher/student storyline when trying to help his child with homework. The child could resist by rejecting this positioning and try to interact within a different storyline. Hence storylines are negotiable; they are reciprocal and contingent (Wagner & Herbel-Eisenmann, 2009).

**Storylines about mathematics and mathematics education in public media**

Recent scholarship has begun to identify storylines present in news media. One storyline says that *mathematics equips society* in the pursuit of economic growth and national prosperity (Herbel-Eisenmann et al., 2016). This storyline positions students and their mathematical achievements as national commodities, valued by means of global ranking systems such as PISA and TIMMS (Lange & Meaney, 2018). The exchange value of the commodity is a high rated workforce—a STEM workforce. Yasukawa (2019) described how these rankings may translate into national pride or shame. In the context of Norwegian newspaper analyses, Lange and Meaney (2018) showed how this storyline ramifies into political rhetoric built on the ‘schoolification’ of the Norwegian public barnehage (kindergarten) for the sake of equipping the nation.

In contrast to this storyline that positions countries as competitors, the storyline *mathematics equips the individual* positions individuals as combatants in pursuit of social and economic advancement (Wagner, 2019), or as citizens equipped for collective action (Jablonka, 2003; Rodney, Rouleau, & Sinclair, 2016).

**Storylines in Norway**

Although the media storylines discussed in the previous section apply to many contexts, different countries also have ideals that might be more particular to that context. In Scandinavian societies, as for example reflected in the Norwegian national curriculum, qualities such as social justice, equity, and equal opportunities are emphasised. The national curriculum takes a ‘mathematics for all’ approach (Nortvedt, 2018).

As stated in the
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introduction, however, such ideals in education and mathematics education, may not have been realised for minoritised groups.

For us, the research context is part of the data because it provides one source of potential storylines. What people say about a country and its inhabitants are storylines. There are some historic (and historically shifting) storylines about minorities/immigrants and non-Norwegian peoples/nations of Norway. As our findings show, some may be seen as fulfilling the storyline: the groups are useful parts of the labour force and necessary for the growth of Norway; hardworking; the groups’ traditional ways of living that make use of natural resources inaccessible by others; the trade and handicrafts of the groups are praised. Others are less positive: the cultural characteristics, identity and languages of the peoples are unwanted; the groups are prospering at the cost of others; the groups are not complying to norms of the society; etc.

According to the Norwegian Government decisions, Norwegian society is historically composed of seven peoples: the Norwegian people, the Kven and Sami peoples in the North, the Forrest Finns in the South, and the non-territorial Romani, Rom and Jews. These minorities have suffered from various injustices and assimilation policies over the last centuries, often justified by some of the storylines mentioned above. E.g., for Kven and Sami students, use of their mother tongue was not permitted in schools, not even outside the classroom (Engen, 2010). After the Second World War, minorities in Norway slowly started to take back their rights and place in the Norwegian society, an ongoing and nonhomogeneous process. The assimilation storyline hence still exists and is among other things made present by how authors communicate in media articles. From the 1970s migrant workers from Pakistan, Turkey, and Morocco (Reisel, Hermansen, & Kindt, 2019) were invited to Norway to supplement the workforce. Migrants (in Norwegian “innvandrer”, and later “migrant”), their children and their children’s children got their own categories in Norwegian population statistics in the years to come (Søbye, 2014). The recent diversification of migration channels such as work permit programmes, increased mobility due to the EU enlargement, student migration, and family reunions have impacted Norwegian demography. Like elsewhere, the most recent decades in Norway have been characterised by global migration and displacement events due to conflicts, violence, political instability and climate change (IOM, 2019).

Methodology

This research is part of the MIM project which investigates educational possibilities and desires in Norwegian contexts, particularly focused on mathematics education in times of societal changes and movements. Languages may be the most obvious challenge in diverse mathematics classrooms, but they connect to cultural differences and conventional characteristics of the discipline. Indigenous communities have experienced linguistic and other challenges for decades as a result of colonisation. Such tensions are now appearing in “ordinary” Norwegian classrooms because tensions in education are intensified by language and cultural differences in times of large migration (Cenoz & Gorter, 2010). These tensions
are reflected in public news media. They are local but reflect global trends. News media reflects these trends and thus reifies them as public storylines, which impacts students’ potential positionings.

We studied text-based mass media sources that acknowledge Redaktørplakatten, an ethical codex for publishers in Norway: including daily newspapers, weekly or monthly journals, tabloids, etc. We focused on articles published from January 2003 to September 2020 to include the time in which a new national syllabus was formed and launched in 2006, and the discussion leading to the launch. A librarian supported our search of the Norwegian database Atekst (http://retriever.no), to identify articles that included words from each of three groups that represent the categories shown below with their groups of words also translated into English:

A) Indigenous and migrational contexts: urfolk (Indigenous people), minoriteter (minorities), migrasjon (migration), innvandring (immigration), Samer (Sami people), Kvener (Kven people), Skogfinner (Forest Finns), Tater/romani and Rom (Romani), Jøder (Jews), flerspråklighet (multilingual), flerkulturell (multicultural), mangfold (diversity)

B) Education: utdanning (education), skole (school), ungdomskole (upper elementary school), videregående (high school), opplæring (teaching), pedagogikk (pedagogy), didaktikk (didactics), klasse (class), klasserom (classroom), lærer (teacher), lærerstudent (student), vurdering (assessment), karakterer (grades)

C) Mathematics: matematikk (mathematics), matte (math), matematikkdidaktikk (mathematics didactics), realfag (science), naturfag (science), økonomi (economy), statistikk (statistics), programmering (coding), geometri (geometry), algebra.

We are motivated by positioning theory and the notion that minoritised bodies are highly visible since they are seen as out of place in the dominant society (Puwar, 2004) to ask the following questions:

1. What ontologies of minoritised bodies are portrayed in the news media articles?
2. How are these ontologies enacted in the context of mathematics education?
3. What ontologies of the mathematics do these storylines imply?

We narrowed our original 1896 articles to 501 after removing articles deemed irrelevant to our research focus and then selected 96 articles for further analysis because they were more centrally related to the three questions and offered some rough answers to them:

1. The media portrayed minoritised bodies as gendered, vailed, dark, masses, wilful, lost, helpless, drop-outs, lazy, sloppy, and unruly.
2. The media implicated gatekeeping, success, failure, gratitude, opportunity, hard work, rights, benevolence, language, culture, sufficiency and hope as constructing ontologies.
3. The mathematics portrayed in these relationships was neutral, formal (Western), cultural and a(nti)-mathematical.
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The storylines related to mathematics education and minoritised groups of transcultural students were often implicit and scattered across the articles. We envisioned the articles as collages in which the authors assembled images that they thought suitable to put together to make up a full collage, or in other words to tell the article story. An article may not explicitly connect mathematics, the minoritised group and education, but all three of these things occurred in the article. In other words, the author of the articles had chosen to knit these images together.

Due to the reciprocity of positioning, to identify the positioning of students from minoritised groups required us to look also at how individuals from dominant groups were positioned. We read the excerpts several times and preliminarily coded in an iterative process, based on the positionings we found in relation to the search words. The process was conducted both jointly among us and individually which allowed us to compare and refine our coding. Finally, we grouped the excerpts according to the coding and re-read the excerpts with the purpose of formulating propositions that articulated the storylines. Some storylines we identified in the media include Minoritised mathematics students are motivated by gratitude, Mathematics is language- and culture-neutral, and Minoritised groups’ mathematics achievements are linked to culture and gender.

Focusing on the gratitude storyline

In this paper, we focus on the storyline for which we are most interested in our MES colleagues’ feedback: minoritised mathematics students are motivated by gratitude. The storyline is construed tacitly in positionings related to obligation, gratitude and benevolence.

This storyline relates to a storyline identified by Schwöbel-Patel & Ozkaramanli (2017) as the grateful immigrant which imposes certain societal behaviours, expectations and obligations such as willingness to work hard, gratitude to the host nation and unwillingness to be a burden to the state resources. The model minoritised student or grateful immigrant is expected to take up positions that involve excelling in education, contributing to labour, display vulnerability and weakness, and ultimately to undertake the benevolence and superiority of the host country’s culture (Thiruselvam, 2019).

The binary structure of gratitude and benevolence materialises, for example, on the 17th of May, the Norwegian Day of Constitution, when it is a common practice that selected students hold speeches at their schools. In the excerpt below the newspaper article reports on how an immigrant girl exclaims gratitude for her life and the opportunity to go to school in Norway as part of the celebrations. The immigrant girl’s exclamation makes available a benevolent position for the dominant societal group to inhabit, since gratitude is a response to benevolence (Higgins, 2004).

«Kjære alle sammen», begynner hun, «jeg er så takknemlig! Takknemlig for at jeg får gå på skole her i Norge.» --- 17.mai - arrangemerter. Talen er en av mange der elever uttrykker takknemlighet for livet i Norge og i [...] kommune.
“Dear all”, she begins, “I am so grateful! Grateful that I get to go to school here in Norway.”
--- May 17 - events. The speech is one of many where students express their gratitude for the life in Norway and in [...] municipality. (our translation)

However, Schwöbel-Patel & Ozkaramanli (2017) note that the binary structure of gratitude and benevolence may come at a price, which can position minoritised groups as indebted. The debt can be paid off by loyalty and contribution to the majority society, which the excerpt below reflects.

I hendene holder hun en hvit konvolutt og en rose. Inni ligger et dokument som forteller om femmere i matematikk, naturfag, norsk muntlig og samfunnsfag, og seks på muntlig eksamen i naturfag. - Norge har gitt oss en trygg plass å være. Da må vi vise Norge respekt tilbake. Jeg kan ikke sitte rolig og vente. Det er bare jeg som kan hjelpe barna til å bli gode mennesker, til å få gode jobber som kan hjelpe Norge.

In her hands she holds a white envelope and a rose. Inside is a document that tells about grade five in mathematics, science, Norwegian oral and social studies, and grade six in oral exams in science. - Norway has given us a safe place to be. Then we must show Norway respect back. I cannot sit still and wait. Only I can help my children to become good people, to get good jobs that will help Norway. (our translation)

The excerpt above tells a story about a refugee mother who has graduated from the Norwegian school system with high scores. Her motivation is to be able to support her children at school so that they eventually will “get good jobs that will help Norway”.

In the excerpt below the students are positioned as alienated from the majority society because they identify a need (to promise) to learn Norwegian culture and language to be able to learn mathematics and then “do great”. Concurrently the media endorses the storyline the dominant language and culture are keys to learning mathematics since possession of the Norwegian language and culture will allow the students to understand mathematics.

WANTS TO BUILD NORWAY: As long as we learn about the culture here and know enough Norwegian to understand math, we will do great, promise NN (28), NN (17) and NN (16). (our translation)

What appears to be of the essence is to understand mathematics—language and culture are merely means to that end. The value that the nation state can add to the students is their mathematical performance (Lange & Meaney, 2014). It is by means of that value that the students can pay off their debt, because mathematical knowledge allows them to contribute to the majority society by “doing great” and by helping to build it. The notion of value added by mathematical knowledge which is present in the storyline minoritised mathematics students are motivated by gratitude shows that this storyline overlaps with the two storylines that Wagner (2019) highlighted namely, mathematics equips society and mathematics equips individuals.

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1 We anonymised people’s names in the media and blinded with initials NN
According to the gratitude storyline the best way for minoritised youth to achieve what is expected or obliged is to resolve alienation, become integrated and be prosperous in the majority society (Ahmed, 2008). A storyline about the happy, successful immigrant is present in our data material. In connection to that storyline and the storyline *minoritised mathematics students are motivated by gratitude*, the value that doing well in mathematics adds to minoritised people’s contribution to society is in their potential to function as a source of success, as for instance mentioned in the excerpt above. Consequently, when minoritised students excel, mathematics becomes a signifier or explanation of (the expected/obliged) success. For instance, in the excerpt below the newspaper article author reported about an immigrant girl’s excellent grades, not mentioning specific subjects, but pointing out that her proud father is a mathematics teacher.

> Syv seksere, seks femmere og én firer er karakterer som gjør NN, til daglig matte- lærer på Sandefjord videregående skole, til en stolt pappa.

> Seven sixes, six fives and one four are grades that make NN, a daily math teacher at Sandefjord upper secondary school, a proud father. (our translation)

The storyline emphasises that to succeed and pay their debt of gratitude, minoritised students must work harder and be more ambitious than students from other groups—an effort that is expected of them as part of the storyline about the grateful immigrant (Schwöbel-Patel & Ozkaramanli, 2017). In addition, minoritised students may not just be positioned as indebted to the majority society, but also to their families and communities.

> Barn av innvandrere føler ofte at de skylder foreldrene å gjøre en innsats, siden mor og far ofret mye for å bygge et nytt liv i Norge, ifølge en studie fra 2010.

> Children of immigrants often feel that they owe it to their parents to make an effort, since their mother and father sacrificed a lot to build a new life in Norway, according to a study from 2010. (our translation)

The author of the excerpt below positions immigrant youth as hard working and as having high ambitions, which may be a manifestation of the storyline about the grateful immigrant.

> Innvandrerungdom har høyere ambisjoner enn resten av elevene. Men de sliter på skolen. Én av tre klarer ikke elementær matte.

> Immigrant youth have higher ambitions than the rest of the students. But they struggle at school. One in three fails basic math. (our translation)

According to the author, despite the extra efforts most immigrant students fail to learn mathematics. In the context of this storyline one may draw the conclusion that they fail to fulfil their obligations—to allow mathematics to equip themselves and society. This has implications for the foregrounds of minoritised students.

Some excerpts indicate that some minoritised students reject their obligation to learn (mathematics). Consequently, they do not comply to the storyline about the grateful, hardworking immigrant. Those minoritised people’s unwillingness to contribute to the wellbeing of the majority society is seen as troublesome (Ahmed, 2008).
illustrates how immigrant youth become positioned as lazy and/or not understanding/disrespecting the rules of the dominant society.

Vi ønsker at de får gode arbeidsvaner. Når vi sier at skolen begynner klokken 08, betyr det at de må være der da, ikke klokken 09 eller 10.

We want them [immigrants] to get good work habits. When we say that school starts at 08, it means that they must be here at that time, not at 09 or 10. (our translation)

In Norway immigrant girls proceed to higher education more often than do adolescents of Norwegian descent (Reisel, Hermansen & Kindt, 2019). In addition, they more often chose education strands that comprise science and mathematics to become for instance physicians or engineers. Hence, girls from minoritised groups may be seen as better than boys at fulfilling their obligations towards the majority society. In fact, they are so successful that the Norwegian prime minister positions them as part of the picture of “the Norwegian dream”.

She is not the only girl from this school who leaves with almost only top grades. Five years ago, two minority girls with a total of 36 sixes were highlighted in the New Year’s speech to Prime Minister Jens Stoltenberg, as “a picture of the Norwegian dream”. (our translation)

Herbel-Eisenman et al. (2016) identified a storyline present in the public realm which implies that the main goal of mathematics education is to produce a STEM workforce. This is how mathematics equips society (Wagner, 2019) and how the mathematical knowledge of minoritised youth can materialise the “Norwegian dream”.

**Conclusion and Implications**

Our inquiry into the storylines about youth from minoritised groups in the Norwegian text-based mass media sources was compelled by a desire to understand some of the storylines and positionings available in this context. This exploration is the beginning of a longitudinal project, in which we are collaborating with teachers, administrators, community members, youth and families, to understand what storylines they would like to have made available to them in the teaching and learning of mathematics. Drawing on a participatory design, these storylines can then be used to imagine new positionings and practices in mathematics classrooms and in schools. We started with an analysis of media not to say these are the storylines, but rather to sensitise ourselves to some of the existing storylines and, thus, to recognise storylines already potentially available and shaping positionings.

Although we found a range of storylines in this analysis, we explored one particular storyline that **minoritised mathematics students are motivated by gratitude.** Our investigation looked at articles relating to Indigenous and immigrant groups, but this storyline positions immigrants as the ones expected to be grateful. Similar to previous findings, this storyline may be understood to say that as one puts economic growth and national prosperity first,
immigrants are supposed to work hard and contribute to the labour force. The storyline suggests they should be thankful to Norway for allowing them to live and go to school there. In our conversations with students, we will want to find out what this storyline about thankfulness might mean for them. Positioning theory reminds us, that any positionings and storylines are negotiable. For example, the dominant members in society cannot expect to impose their benevolence and their expectations of gratitude on those who are positioned outside of the dominant member group unless the minoritised members aspire to be part of the majority society (Berman, 1999). This is why paying attention to existing storylines can be useful for imagining new and different storylines, positionings and practices that are more humane and equitable than the ones that might be currently available.

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**News media texts cited**


**References**


