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ARTICLE

Individualised home-schooling – at odds with the equity ambitions in the Nordic model of education?

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Individualised home-schooling – at odds with the equity ambitions in the Nordic model of education?

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Abstract

Within the Norwegian education system, equity, equal opportunities and education for all are fundamental principles, regardless of one's socioeconomic background and academic achievement. In this article, we discuss how these ideals of equity for all students were challenged during the period of home-schooling that took place amid the Covid19 pandemic in the spring of 2020. The analysis draws on data from an anonymous, national digital survey for parents/caretakers with children in Norwegian elementary and secondary schools in grades 1 to 10 (N = 4,642). To describe typical teaching during home-schooling, the survey consists of both closed and open-ended questions. Overall, our findings show that parents had different experiences of home-schooling due to their levels of education, their work situations and the students' access to equipment. The most important factors for ensuring equity during this period of home-schooling were providing the students with access to relevant equipment and support at home with regard to completing their schoolwork.

Keywords: equity, education for all, equal opportunities, Covid19, home-schooling

Introduction

Since the end of World War II, equal opportunity for all has been a cornerstone of the Nordic model for education. The Nordic model is known to emphasise features that are critical for high-quality education (Klette, 2018). The Nordic model of education refers to similarities in educational reforms and school systems and to the shared educational values and aims of the five Nordic countries: Norway, Sweden, Denmark, Iceland and Finland (Lundahl, 2016). Equity, equality, equal opportunities and 'education for all' are fundamental principles within the model (Buchholtz, Stuart and Frønes, 2020). The school systems are regarded as the single most important way to safeguard these principles in order to promote citizenship, inclusion, democracy and lifelong learning, regardless of one's socioeconomic and geographical background (Klette, 2018).

The Covid19 pandemic led to global school closures, but at the same time, there was global consensus that schools should not be put on pause but should instead keep trying to provide learning opportunities for all during the pandemic (Reimers, 2020). Making the homes of students the places where all schooling happens over long stretches of time greatly challenges many of the ideals associated with the 'Nordic model', namely inclusive education regardless of, for example, academic achievement and socioeconomic background. In this study, we address to what degree and how the key ideals of equity for all students were challenged during the period of home-schooling in the spring of 2020 in Norway. The questions addressed in this article are: To what extent did students' school experiences during the pandemic depend on their home and family context? What equity concerns does this raise? The research data we draw on consist of a national survey of parents/caretakers or guardians (hereafter referred to as 'parents') with children in grades 1 to 10 (N = 4,642), which included both closed and open-ended questions to map typical teaching during home-schooling. When the home becomes the site of all schooling, parents' experiences are crucial not only to systematically map what typical home-schooling was, but also to understand the main challenges and opportunities of remote teaching.

Equity in the Norwegian school system

The Norwegian school system is mandatory and consists of elementary school (ages 6 to 13) and lower secondary school (ages 13 to 16). Upper secondary school (ages 16 to 19) is not mandatory, but all students between the ages of 16 and 24 are entitled to upper secondary education. One important principle is that all children and young people have an equal right to education regardless of their abilities, gender, social background, special needs and other such differences. Education is free of charge, and only 4% of students attend private schools (Norwegian Directorate for Education and Training, 2020). Private elementary schools and private lower secondary schools have to offer some sort of an alternative pedagogy (e.g., Steiner and Montessori schools) or religious education (e.g., religious faith schools), and they are obligated to follow the national curriculum and the Education Act of 1998 (Klette, 2018).

There are two essential educational principles in Norway relating to equity. First, all students are integrated in mixed-ability and non-streamed classes. Second, all students, regardless of their academic achievement levels, should receive an adapted education (Dalland and Klette, 2014; Act

relating to Primary and Secondary Education and Training, 1998). Hence, Norwegian legislation requires that teachers adapt and differentiate curricula, teaching methods, learning material, learning resources, working methods and organisational methods to each student's ability level. International comparative tests, like the Program for International Student Assessment (PISA), show that Norwegian students perform at the OECD average in mathematics, reading and science. Findings from national test scores underscore that most schools manage to give their students what we call adapted education and that most classes consist of students with different ability levels (Norwegian Directorate for Education and Training, 2020, p.35).

In education, equity and equality are often used interchangeably. However, while equity can be defined as ensuring that all students have equal opportunities for education and academic success, equality means treating every student the same (Buchholtz et al., 2020). As we know, treating everyone the same does not secure equality in opportunities nor equality in outcomes.

In the Organisation for Economic Co-operation and Development (OECD) report, 'Equity in Education. Breaking Down Barriers to Social Mobility' (2018), equity in education is in the forefront of the agenda. The report focuses on the importance of fair education systems that provide equal learning opportunities for all students, regardless of gender, background and socioeconomic status. In addition, the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2017) has established guidelines in its international policy for ensuring equity and inclusion in education for all. The single largest worldwide educational challenge highlighted by the OECD report (2018) is that expanding access to education and securing education for all does not automatically result in educational equity. Hence, even if students are entitled to primary and secondary education, this does not result in equity or in all students having a fair chance to succeed academically.

Even if the OECD report (2018) shows that no country has managed to eliminate inequality in education and secure post-secondary education for all, Norway is among the countries that have the highest level of social mobility. The diversity in students' ethnic backgrounds has changed in recent decades, and in 2019, 18% of all students in compulsory education had an immigrant background. These students generally do well in the Norwegian education system, although their grades are slightly lower compared to those of other students (Norwegian Directorate for Education and Training, 2020).

Findings from studies focusing on gender differences in attainment indicate that students from advantaged backgrounds normally demonstrate higher achievement than students coming from less advantaged families (Tinklin, 2003; Tinklin, Croxford, Ducklin and Frame, 2001). This is supported by Rowan (2002), who finds that girls, by and large, outperform boys who are from the same ethnic and socioeconomic group as them. However, middle-class boys, for instance, often perform better than working-class girls. Even if these are relatively old studies, newer findings show that Norway is among the countries with the largest gender gap in reading and that Norwegian girls still perform better than boys in reading, mathematics and science (Jensen et al., 2019). Even if there is a clear connection between students' socioeconomic backgrounds and school performance in terms of PISA 2018, this connection is smaller in Norway than in other countries.

What do we know about home-schooling in Norway during the pandemic?

From March 12 to May 15, the Norwegian government locked down all educational institutions and ordered home-schooling in order to limit the transmission of the Covid19 pandemic. Never have so many children physically been out of school. In addition, after schools reopened in May, there were many local school closures, hybrid teaching situations where some students would be at home and some in school, and finally many students spent weeks in quarantine with home-schooling after the official reopening. The strong technological infrastructure in Norwegian schools, combined with the national curriculum's emphasis on digital skills (Blikstad-Balas, Roe, Dalland and Klette, 2021), made it natural that home-schooling in Norway meant digitally mediated teaching. Internet access at home has repeatedly been measured as being available to 98% of the population (e.g., Statistics Norway, 2020; United Nations, 2020), and students' overall access to technology has been significantly above the European average measured by the students-per-computer ratio (OECD, 2015). It should be noted that previous research has revealed that the uptake of technology varies greatly across classrooms and that how technology is used is largely dependent on individual teachers. Access to technology is therefore not a reliable predictor of teachers' implementation of digital technology (Blikstad-Balas and Klette, 2020; Elstad, 2016; Gil-Flores, Rodríguez-Santero and Torres-Gordillo, 2017). The latest Teaching and Learning International Survey (TALIS) report from Norway highlighted the discrepancy between merely providing access for students and preparing teachers to utilise the technology in their everyday teaching (Throndsen, Carlsten and Björnsson, 2019).

The few available studies about the Norwegian educational response to the pandemic have shown that most teachers were able to continue providing instruction for their students. Bubb and Jones' (2020) small-scale study following students, parents and teachers in one municipality suggested that teachers adapted rapidly and that home-schooling was well received by students and their parents. Gudmundsdottir and Hathaway (2020) found that teachers were moderately prepared to use various digital tools and willing to make online learning work for them and their students. In a national survey, Federici and Vika (2020) found that even if teachers and school leaders had very limited prior experience with regard to home-schooling, they were still able to teach their students from a distance and to maintain contact with students and parents digitally. This national survey also showed that only 27% of teachers in primary and lower secondary schools, and 23% of teachers in upper secondary schools, confirmed that they were able to follow up on vulnerable students who needed special support during this period (Federici and Vika, 2020), which is concerning from an equity perspective. Mælan, Gustavsen, Stranger-Johannessen and Nordahl's (2021) survey of lower secondary schools found that it was harder for low-achieving students to maintain engagement and motivation during the period of home-schooling compared with when they attended regular school. They also found that students experienced less support from their teachers during the period of home-schooling and summarised that there is reason to be concerned, especially for low-achieving students, but also when it comes to the effects of home-schooling in general and the impact it may have on all students (Mælan *et al.*, 2021).

Research Design

We developed an anonymous, digital survey about home-schooling and remote teaching for parents with students in primary and lower secondary schools. As we wanted the responses to reflect parents' experiences during the first period of home-schooling, we distributed the survey to parents digitally, using a non-probability convenience sample (Fowler, 2009). Recruitment was performed through selected parent social media groups on Facebook and Twitter and social media posts from the teacher's union and our professional networks. The main aim of the survey was to investigate all aspects of home-schooling, including what kind of remote teaching students were offered and how parents and their children experienced the home-schooling situation.

We invited parents with students in grades 1 to 10 from all over Norway to complete the survey, resulting in 4,642 responses (The survey was opened for response on 20 April 2020 and closed on 27 April 2020). The sample was geographically and demographically diverse, representing 262 of the country's 365 municipalities, including large towns, small towns, rural areas and cities. If the parents had more than one child in primary or lower secondary school, they were asked to choose one of their children prior to starting the survey and answer all the questions in relation to that child. This resulted in 52% of the respondents answering about students at the primary school level (grades 1–4), 30% answering about students at the intermediate level (grades 5–7) and 18% answering about students at the lower secondary level (grades 8–10). Thus, parents of younger children compose a greater proportion of the sample. While 96% of all the respondents had children in public schools, only 4% were in private schools, which is representative of the equivalent country-wide percentage (Statistics Norway, 2020). In terms of gender distribution, parents reported about 54% boys and 46% girls. Compared to the national average for parents between 25 and 50 years old, our sample had a higher percentage of parents with a master's degree or a PhD and a lower quantity with low levels of education (ibid.). Despite not being a nationally representative sample in terms of parents' educational backgrounds and the distribution of grade groups, the data set we present here is, to the best of our knowledge, the most systematic and most comprehensive available to examine how parents with children in grades 1 to 10 experienced the period of home-schooling and what characterised the instruction their children took part in.

Key dependent variables

Two sets of questions formed our key dependent variables. The first was a single question about how frequently students were in contact with their teachers. Parents responded on a 5-point Likert scale ranging from never to several times per day. We converted this scale into a measure of how many times each week students were in contact with their teachers. The second was a set of 19 Likert-style questions about a parent's perception of their child's school experiences and the parent's experiences of home-schooling, including the amount of support and help they provided their child with. A principal component analysis of these 19 questions revealed two clear components that explained 47% of the variance in the scores. The first was the questions that described positive experiences, including the student working well at home; the student being immersed in their schoolwork; the student enjoying the schoolwork; and the teacher being available. The second was the questions that described negative

experiences, for example, the student struggling to start or procrastinating; the student thinking the work is too hard; spending too much time supporting or helping the student; and supporting the student interfering with one's own work. Interestingly, these two components were largely uncorrelated (r = -0.19), suggesting that having positive and negative experiences were largely independent phenomena.

Key independent variables

As described above, our interest here is in whether equity aspects of the Nordic model were preserved during home-schooling. Thus, we identified a set of social and demographic features of parents and families that could have important impacts on their experiences of home-schooling and the degree to which home-schooling equitably met each family's needs. The first variable is a measure of each parent's highest level of education, which acts as a measure of the parent's social standing in relation to schooling. Due to the distribution of education levels, we broke parents' education down into four categories: parents with a master's degree or higher (n=2,724); those with a college degree (n=1,156); those with a vocational school degree (n=260); and those with a high school degree or lower (n=494). The group containing parents with a master's degree or higher is used as the reference group in the regressions.

Second, we identified information about the equipment (e.g., tablets, computers, phones, internet) that the children used to access schooling during the home-schooling period based on parent self-reports. Four variables (not mutually exclusive) represent the technology used by students to access instruction: (1) students used their own computers or tablets (n=1,432); (2) students used computers or tablets provided by the school (n=3,119); (3) students borrowed their parents' computers or tablets (n=1,184); and (4) students used their mobile phones (n=1,141). For equipment provided by the school, parents also reported whether it was 'good enough' (n=130 reported it was not good enough). In addition to this physical equipment, parents also reported on whether they had no or unstable internet access (n=190). Together, these variables represented the set of technological resources that each family environment possessed in order to support students in terms of accessing schooling during the home-schooling period. Last, we identified information regarding each parent's work situation during the home-schooling period. Parents reported on who was typically at home and their work situation. We coded this into five variables: (1) one or two parents were at home but working full-time in a home office (n=3,323); (2) one parent was home but not working (and a second was potentially at home in a home office; n=921); (3) two parents were home but not working (n=135); (4) no one was home to watch the child (n=263); and (5) a sibling was home to help the child (n=991). The first four variables are mutually exclusive, but the fifth could be selected along with any other category. We also collected some basic demographic information, such as the gender and grade of each child.

Analyses

The analyses presented in this paper are simple ordinary least squares (OLS) regressions run using the R statistical software (R Core Team, 2018). The outcomes are our estimates of the number of times students met with their teachers each week and the two principal components described above. The regressions examine the effects of the key independent variables while adjusting for the other variables,

allowing us to examine which of the key independent variables is the best predictor of the dependent variable.

Results

In this section, we discuss the key results. We start by discussing the frequency of students' meetings with teachers. Then, we move on to the parents' self-reported experiences.

Frequency of contact with teachers

Table 1: Results of regression analyses on the frequency of student contact with teachers

	Estimate	Std. Error	P-Value
(Intercept)	3.2395	0.1595	***
Highest level of education reported			
High school or lower	0.5799	0.1634	***
Vocational school	0.4018	0.2156	~
College	0.1241	0.1167	
Master's degree or higher	Reference group		
Grade level of child			
1–4	Reference group		
5–7	1.5636	0.1178	***
8–10	2.0016	0.1481	***
Equipment used to access schooling			
School-provided equipment	1.1525	0.1454	***
Equipment provided was not good enough	-1.0524	0.3007	***
Child's personal equipment	-0.0812	0.1325	
Shared parent's equipment	-0.3225	0.1377	**
Child's telephone	0.5379	0.1289	***
Internet was reported as unstable or non-existent	0.0469	0.2488	

*** p < 0.001; ** p < 0.01; * p < 0.05; ~ p < 0.10

Table 1 shows the results of the regression on the frequency with which parents reported that their children interacted with teachers. The outcome here is the number of times per week the child was in contact with their teacher based on parent self-reports. The intercept shows that each child had contact with their teacher 3.23 times per week after adjusting for regression parameter estimates. This estimate is for the reference group, which is parents with a master's degree, with children in grades 1 to 4 and who did not report using any equipment. The regression parameter estimates show deviations from this reference group. Looking at the effects for education level, we see that parents with a high school degree or lower reported about 0.6 more contacts per week with the teacher (p-value < 0.01), and parents with a vocational school education reported 0.4 more contacts per week (p-value = 0.06).

Further, parents of older students reported 1.56 more contacts (for students in grades 5–7) or 2.00 more contacts (for students in grades 8–10) with teachers. We also see that families with school-provided equipment tended to have more frequent contact with teachers, but only in cases where the equipment functioned well, as the negative effect of 'Provided equipment was not good enough' was large enough to cancel out the positive impact of having school-provided equipment. We also observe how having to share equipment with parents led to fewer contacts (estimate = -0.32) with teachers, while using one's mobile phone increased the frequency of contact (estimate = 0.54).

Considering the results in Table 1, we see how schools can support families in terms of accessing education by providing equipment, but only when that equipment works well, and how teachers can support such access by providing more flexible ways to contact students, such as through phones. We also observe that equipment limited the access of some families, as children who had to borrow their parents' equipment were in contact with teachers less often than those who did not have to share equipment with their parents. However, even after adjusting for the effects of equipment and student grade, we see that parents with lower levels of education reported that their children had more frequent contact with teachers. It is not clear if this reflects how schools are making special efforts to reach out to such students or if students are reaching out to receive extra help from teachers. However, this pattern suggests that home-schooling might not face as many equity challenges as expected.

Parents' reports of positive and negative experiences

Here, we report on the regression analyses by looking at the two components extracted from the principal component analyses, which identified a set of positive and negative experiences reported by parents. One of the regressions looks at variables associated with more positive experiences, and the other one looks at variables associated with more negative experiences. The two variables are standardised, so the regression coefficients should be interpreted on a standard normal scale (i.e., an estimate of 1 indicates a 1 standard deviation difference in the outcome measure). Table 2 shows the results. Parents with lower levels of education report higher positive experiences (0.27 for high school or lower and 0.19 for vocational school) and average levels of negative experiences. Further, parents of older students report both fewer negative and positive experiences, which could suggest that these parents are less directly involved in all aspects of home-schooling, resulting in more muted perceptions. Parents of girls report slightly more positive experiences and fewer negative experiences compared to parents of boys.

The equipment that parents reported their children using was also strongly associated with both positive and negative experiences. Using equipment provided by the school was associated with fewer negative experiences and more positive experiences, but, again, only when that equipment functioned well. When parents reported that the school-provided equipment did not work well, they also reported much stronger negative experiences and fewer positive experiences. This negative impact of poorly functioning equipment was so large that parents reported more positive and fewer negative experiences when they received no school equipment compared to when they received poorly functioning equipment from schools. Other equipment had much weaker effects and only on negative experiences. Sharing equipment with the child and having unstable internet access were associated with more negative

experiences, while using one's own equipment or one's phone was associated with fewer negative experiences. Consequently, the access that children had to computer equipment had a relatively large impact on parents' self-reported experiences during home-schooling, while it is clear that schools have the opportunity to create positive experiences by providing families with high-quality equipment.

Table 2: Regression results of parent reports of positive and negative experiences during the home-schooling period

	Negative Experiences	Positive Experiences
(Intercept)	0.69 (0.04)***	-0.23 (0.05)***
Highest level of education reported		
High school or lower	-0.06 (0.04)	0.27 (0.05)***
Vocational school	-0.02 (0.06)	0.19 (0.06)**
College	0.05 (0.03)	0.04 (0.03)
Master's degree or higher	Reference group	
Grade level of child		
1–4	Reference group	
5–7	-0.56 (0.03)***	-0.17 (0.03)***
8–10	-1.12 (0.04)***	-0.24 (0.04)***
Indicator for Pupil is a Girl	-0.30 (0.02)***	0.08 (0.03)**
Equipment used to access schooling		
School-provided equipment	-0.21 (0.04)***	0.26 (0.04)***
Provided equipment was not good enough	0.52 (0.08)***	-0.69 (0.09)***
Child's personal equipment	-0.07 (0.03)*	0.05 (0.04)
Shared parent's equipment	0.08 (0.03)*	0.05 (0.04)
Child's telephone	-0.14 (0.03)***	-0.02 (0.04)
Internet was reported as unstable or non-existent	0.13 (0.06)*	-0.09 (0.07)
Family work/Home situation		
Adults were at home in a home office	Reference group	
No one or only a sibling was at home	-0.27 (0.06)***	-0.42 (0.06)***
One adult was home but not working	0.10 (0.03)**	0.21 (0.04)***
Two adults were home but not working	-0.15 (0.08)*	0.43 (0.08)***
A sibling who could help the focal child was at home	-0.14 (0.03)***	0.12 (0.03)***

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ~ $p < 0.10$

Last but not least, perhaps the largest impact on parents' self-reported experiences during home-schooling results from the family work/home situation during that time period. Relative to the most commonly reported situation of one or both parents working in a home office, parents who reported that

no one was home with the child had both fewer negative and positive experiences, which might indicate that their overall impression of home-schooling was muted as they were not home as much to experience it. On the other hand, when one or two parents were home but not working, they reported far more positive experiences as compared to parents who were working in a home office, potentially because they had more time to positively engage with their children and fewer competing demands. That said, when only one parent was at home but not working, parents also reported more negative experiences. Finally, having a sibling at home who could support the focal child was associated with more positive and fewer negative experiences overall.

Therefore, the overall picture from table 2 shows that parental experiences of home-schooling varied quite widely. Parents' levels of education, their access to equipment and their work situations during the home-schooling period systematically led to very different experiences. Access to resources, including both equipment, time and energy, to engage with home-schooling is an important factor in families' lived experiences of this time. While schools had some capacity to intervene to support more positive experiences, such as by providing high-quality equipment or supporting more flexible interactions (e.g., texting), their capacity to intervene to support equitable experiences was limited. That said, even after adjusting for equipment and aspects of the home/work situation of families, we still find that parents with lower levels of education had more positive experiences, which suggests that many of the equity concerns raised at the start of this paper are not as problematic as we feared.

Qualitative Analyses

The two open-ended questions in the survey were coded qualitatively using conventional content analyses (Hsieh and Shannon, 2005). The responses were distributed into two main groups: expressions of positive and challenging experiences during home-schooling. In each group, the responses were divided into eight positive and nine negative categories, as shown in Table 3.

Table 3: Themes that were the most prominent in the parents' responses concerning both positive and challenging experiences

Positive Experiences	Challenging Experiences
Gain more detailed insight into the students' schoolwork	Child lacks self-regulation and struggles to get their schoolwork done
The child works more efficiently during home-schooling	Time consuming for parents to follow up students' schoolwork
Less stressful days at home than during non-lockdown times	Difficult to combine monitoring home-schooling with parents' own jobs
More family time	Demanding to have children at home
More flexibility	Poor follow-up from the school
Easier to follow up on the child	Child misses their social life
Good follow-up from the school	Too much schoolwork
Better concentration and independence	Too little schoolwork
	Demanding to act as a teacher for one's own child

When we studied the open-ended answers, however, we found some interesting differences between the respondents from different educational groups. As the open-ended questions were not mandatory, more than one third of the parents did not respond to them. Table 4 shows that the response rate was slightly higher for challenging experiences than for positive experiences, and generally higher among parents with higher rather than lower education. Due to the fewer number of open-ended responses we received, we use the following three groups for discussing the open ended responses: vocational school, high school or lower (Educational group 1), a college degree (Educational group 2), a master's degree or higher (Educational group 3).

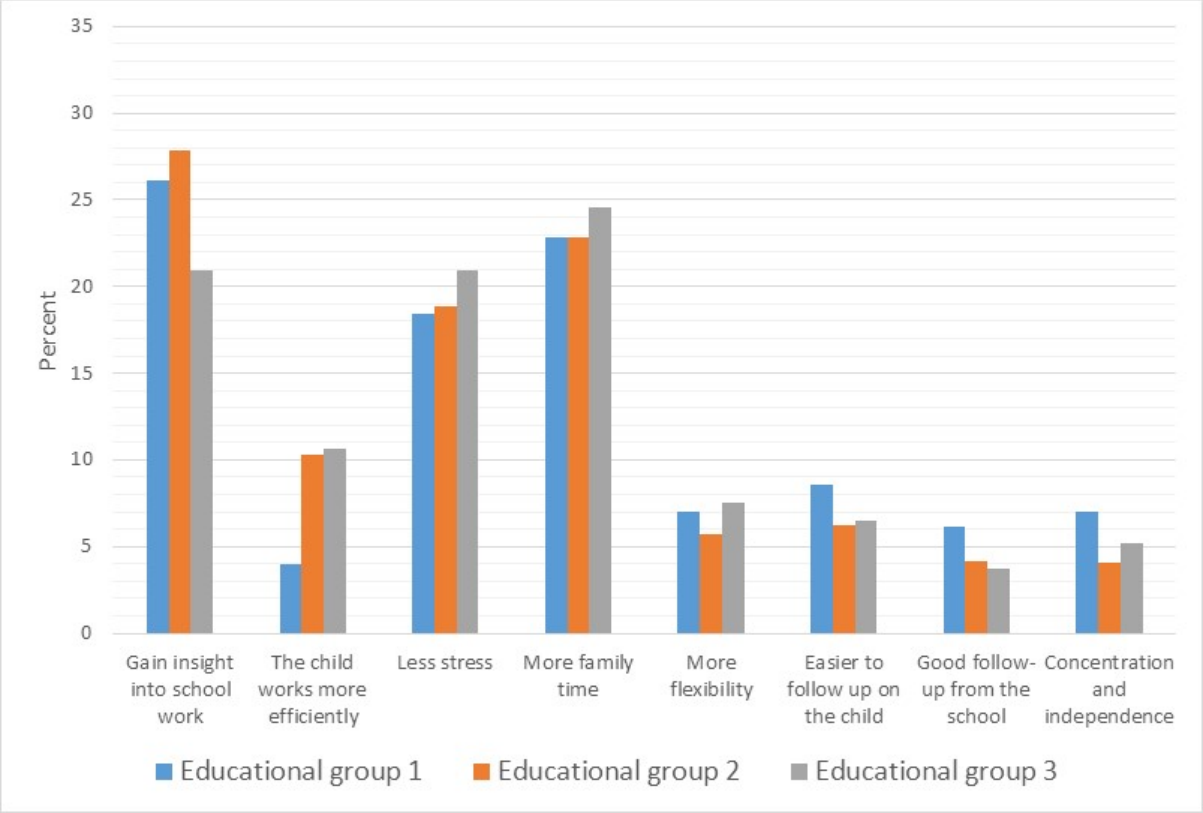
Table 4: Percentage of parents who answered the open-ended questions for all parents, and for parents in each of three educational groups.

	Response rate for positive experiences	Response rate for challenging experiences
All respondents	62%	65%
Educational group 1	56%	58%
Educational group 2	62%	65%
Educational group 3	67%	71%

We also found that not only did a higher percentage of parents in Educational group 3 than groups 1 and 2 answer the open-ended questions, parents in Educational group 3 also mentioned a higher number of different themes (see table 3) than parents in Educational groups 1 and 2. However, to compare the parents in each of the three groups in terms of which topics they mentioned, we have made each group's total themes 100% in figures 1 and 2.

Overall, three response categories represent the highest percentages within all three groups: parents gain more insight into their children's schoolwork, the stress level is lower when children do not have to rush to get to school in the morning and there is an opportunity to spend more time together as a family. The differences between the three educational groups were rather small, except for 'Gain insight into schoolwork' and 'The child works more efficiently'. Of the parents from Educational group 3, 21% mentioned that they gained more insight into their children's schoolwork during this period, compared to 26% in Educational group 2 and 28% in Educational group 1. Only 4% of the parents in Educational group 1 reported that their children worked more efficiently than usual, compared to more than 10% in Educational groups 2 and 3.

As with the positive experiences, we also found only two categories among the challenging factors with noteworthy differences between the educational groups: 'Difficult to combine with own job' and 'Demanding to be a teacher'. Of those parents with the highest level of education, 30% mentioned factors related to problems with combining their own jobs and helping their children with schoolwork, while this aspect only applied to 14% of the parents in Educational group 1. However, parents with the lowest level of education seemed to find it more demanding to teach their own children than parents with a higher level of education.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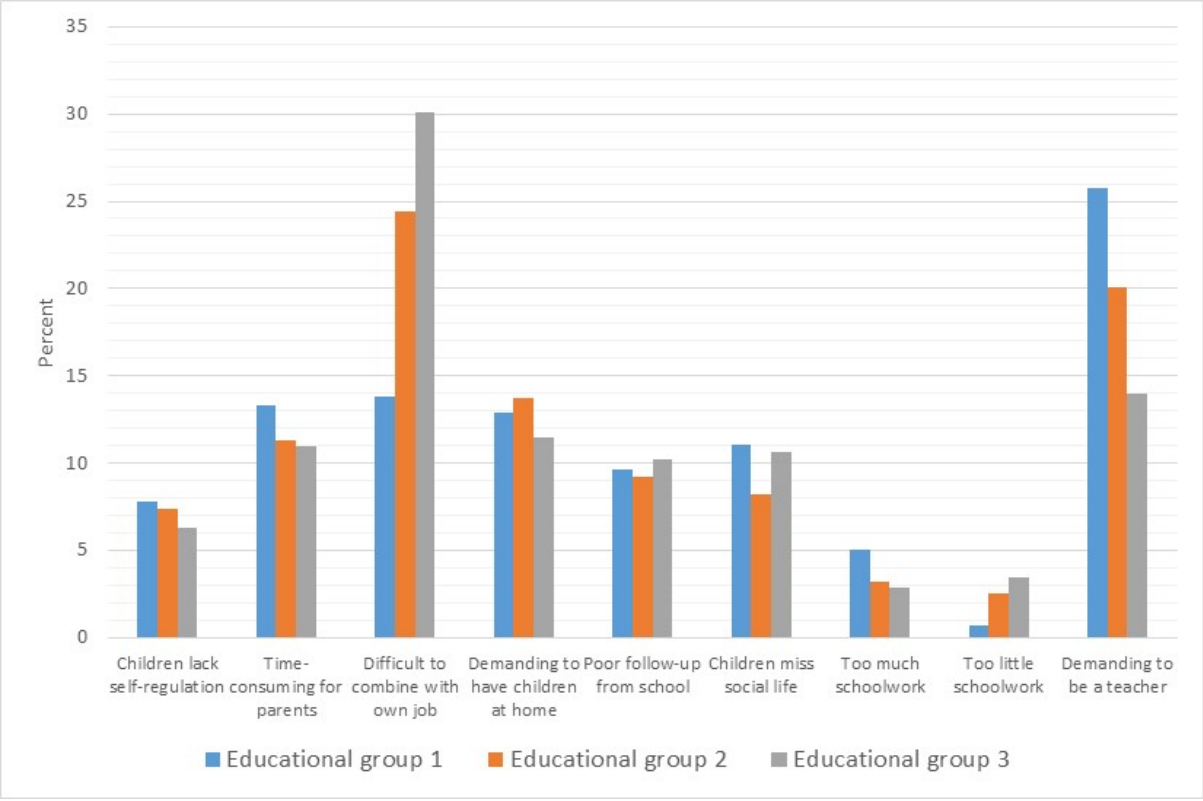
Percent
Gain insight into school work
The child works more efficiently
Less stress
More family time
More flexibility
Easier to follow up on the child
Good follow-up from the school
Concentration and independence
Educational group 1
Educational group 2
Educational group 3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Percent
Children lack self-regulation
Time-consuming for parents
Difficult to combine with own job
Demanding to have children at home
Poor follow-up from school
Children miss social life
Too much schoolwork
Too little schoolwork
Demanding to be a teacher
Educational group 1
Educational group 2
Educational group 3

Discussion

The Covid19 pandemic has affected educational opportunity for students all over the world. As Reimers (2021) emphasises, the pandemic and the following period of school closures resulted in the loss of knowledge and previously mastered subject matter for a significant number of students. Student disengagement with school and learning losses were already particularly concerning for disadvantaged students (Reimers, 2020; 2021). In many ways, the starting point for home-schooling in Norway was rather good due to the great digital infrastructure and the low inequality discussed in the introduction. However, as the survey we conducted shows, there are several ways in which home-schooling and remote teaching did affect students from different backgrounds in different ways. In the following discussion, we will highlight key findings and address what challenges they point to concerning equity in education.

First, it is highly interesting that the parents with lower levels of education reported having more positive experiences with home-schooling than the parents with higher levels of education. This shows that successful home-schooling is not just a matter of having access to one or more highly educated parents – perhaps nuancing the idea of precisely how equity ideals may be challenged by home-schooling. There are several possible explanations as to why parents with lower levels of education reported more positive experiences. Parents with a lower level of education may not have the same expectations of teachers, school, learning and education as parents with a higher level of education might have. If their expectations differ, it is also natural that their assessment of the situation will differ. Another possible explanation is that since adapted education is an important educational principal (Dalland and Klette, 2014; The Act relating to Primary and Secondary Education and Training, 1998), teachers might have been especially attentive towards students from less privileged families and students they believed needed extra support during the period of home-schooling. Findings from a teacher survey we conducted (Blikstad-Balas et al., 2021) support the idea that teachers were concerned because they struggled to support their students via remote teaching and home-schooling, and that they were particularly worried about their students and especially students with special needs. Findings from Federici and Vika's study (2020) show that teachers found it difficult to follow up on vulnerable children. Even though parents with lower levels of education reported that their children were more frequently in contact with the teachers, it is not clear if this reflects teachers and schools making special efforts to reach out to such students, or that students whose parents' had a lower educational degree were reaching out to receive extra help from teachers more often than their peers. Further, we have no indication about the effect this extra contact with teachers had, and if it was sufficient to ensure equity in educational opportunity.

A key finding in this article is that what may have mattered more than educational background for students during home-schooling is the degree of access they had to one or more parents during the school day. The factor with perhaps the largest impact on parents' self-reported experiences during home-schooling was the parents' working situation. Not surprisingly, parents who reported not being at home at all, reported fewer overall experiences (both negative and positive), probably as they did not have enough access to the home-schooling to assess it. Interestingly, there are differences in how

parents who were working or not experienced the home-schooling situation. Parents who were working from home reported fewer positive experiences, and in the open-ended questions, these parents often voiced their frustration at not being able to follow up their own tasks at work due to the additional task of monitoring their children's home-school progress. Here, we also find that there is a significant difference between parents' educational levels: for parents with the highest level of education, the main challenge of home-schooling was combining the monitoring of the remote teaching with their home office work. In the educational group with the highest level, 30% of the parents reported this as a main challenge of home-schooling, compared to less than 14% of the parents in the lowest educational group. For parents with the lowest educational level, the main challenge was that it was demanding to take on the role of a teacher for their own children. Over 25% of the parents in this group reported this difficulty as their main challenge during home-schooling. Given the amount of individual work and the degree of self-regulation expected from students in a home-school situation (Blikstad-Balas et al., 2021), this may actually point to a crucial difference in the opportunities for students to get qualified help. Interestingly, we also found that parents who were at home and were not working from home reported far more positive experiences, probably because they actually had time to follow up and monitor the home-schooling. We also found that access to a sibling at home was associated with more positive, and less negative, experiences – again, underscoring the idea that access to other people, regardless of their education level, was a defining factor in how home-schooling was experienced.

In addition to the parents' educational levels, it is clear that equipment matters. This is somewhat surprising in the sense that the technological infrastructure in Norway is advanced from a global perspective (Blikstad-Balas and Klette, 2020), but on the other hand, it is obvious that when the equipment is not good enough, the whole idea of remote digital teaching becomes difficult. When children had access to digital equipment from school and when this equipment functioned satisfactorily, their parents reported having strong positive experiences with home-schooling. However, when having to share their own equipment (e.g., PCs, mobile phones, tablets) with their children and/or experiencing unstable internet and Wi-Fi, parents reported far more negative experiences in terms of home-schooling and remote teaching.

Not surprisingly, we found that parents of girls are slightly more positive with regard to home-schooling compared to parents of boys. Academic achievement is usually considered to matter more to girls than to boys, and Norwegian girls perform better than boys across the subjects of reading, mathematics and science (Jensen et al., 2019; Tinkling, 2003; Tinkling et al., 2001). While high-achieving girls tend to take school more seriously than their male counterparts, low-attaining females are generally more positive towards schooling than low-attaining males (Tinkling, 2003). In another study on home-schooling experiences in Norway, it was reported that it was harder for low-achieving students to self-regulate, to be motivated and to be engaged during home-schooling (Mælan et al., 2021). Having children who manage to work independently, who are self-regulated, who take school seriously and who want to do well academically probably influences how parents experienced home-schooling. Again, we see that parents with higher levels of education more often reported that their children worked more effectively in terms of completing their schoolwork than the parents in the lowest educational group did.

Parents of children in lower secondary schools seemed to be less directly involved in home-schooling. Hill and Tyson (2009), who studied parental involvement and homework, claim that many parents help their children with homework in a way that discourages both learning and motivation. The reasons are that the parents are too pushy and/or hinder the child's autonomy when helping with schoolwork. In addition, there might also be a significant discrepancy between parents' and teachers' explanations, which is a challenge, especially for low-achieving students (Bakken, Frøyland and Sletten, 2016). Further, parents with the lowest educational level reported finding helping their children with schoolwork more demanding than parents with higher levels of education. According to Bakken et al. (2016), parents who themselves have a higher level of education will often value schooling more than parents without higher education. Parents with higher education are generally more concerned about their children's schooling, they talk more about school and they help more with both homework and schoolwork. Parents' involvement in schooling is thus both about appreciation and expectations. For instance, it was observed that while more than half of students who came from a high socioeconomic background reported a high degree of parental involvement, this only applied to one of three students from less advantaged families (Bakken et al., 2016). Further, parents' involvement in schoolwork was found to decrease as students grew older (ibid.). One reason might be that parents with the lowest level of education found it quite demanding to help their children with schoolwork.

In summary, our study points to new nuances in how equity has been challenged during the period that schools were closed in Norway during the Covid19 outbreak. In addition to the rather evident point that implementing home-schooling for all students greatly increases the home's impact on students' schoolwork (Blikstad-Balas et al., 2021), we find that what matters the most is not actually parents' educational level alone, but whether students have access to suitable equipment and people who can engage with them with regard to their schoolwork.

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