# Children lost at home: Difficulties during COVID-19 homeschooling in Denmark

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## Abstract

*This article presents a survey study among Danish primary-school students (*n = 5,953*) and their parents (*n = 5,054*). The survey investigates experiences of teaching during school lockdowns caused by the COVID-19 pandemic. Data was collected during the initial lockdown period in Denmark (1 to 20 April 2020), during which time the students participated in teaching from their homes. By utilizing cross-tabulation, factor- and cluster analysis, this article identifies the ways in which students managed schoolwork at home and the consequences in terms of their wellbeing and mental health. The results indicate that different clusters of students had different experiences of teaching and learning. Young students in particular had difficulties with the situation, and teaching during school lockdowns challenged their wellbeing and mental health. Furthermore, a group of approximately 20% of all students had particular difficulties: they felt lost at home. They missed support from their parents, they didn't feel recognized by their teachers, and they had below average contact with their friends.*

## Introduction

The corona pandemic hit Europe in March 2020, and as a result of school lockdowns all primary and secondary school students in Denmark practiced homeschooling, and teaching was carried out in the form of distance learning. Several questions became immediately apparent: How did the corona crisis affect the students' academic achievements and social wellbeing? What worries did it cause for students and their parents respectively? How did students and parents handle the homeschooling situation? Were there any groups of students who had particular difficulties? This article identifies the characteristics of the students who had the most difficulties managing homeschooling.

The article is based on data from a questionnaire study on students' and parents' experiences of the situation and was conducted by a research group from Aarhus University and the University of Southern Denmark during the school lockdowns in order to gain knowledge of a unique period in the history of the primary school. The questionnaire was distributed within all schools in six municipalities by posting a participation link on the schools' learning management systems to all students in 3rd to 9th grade and their parents. The total response period was April 1–20 2020. Most of the responses

were received during the first week, when school lockdowns and homeschooling were at their peak in Denmark. At the end of April 2020 we completed a data report with all the descriptive results (response frequencies) so that it could benefit teachers, educators, school leaders, administrators and politicians (Qvortrup et al., 2020). Two Danish language articles were published during the fall of 2020. This article is based on Wistoft, Qvortrup, Christensen, and Qvortrup (2020), however with an international perspective of the insights from Denmark.

## State of the art

School lockdown and homeschooling during the corona crisis is a global experience. Schools all over the world locked down, and students were placed under home quarantine. Many scientific articles have already been published on this subject (Burgess & Sievertsen, 2020; Reich et al., 2020), however only few with students and/or parents as respondents. This means they only indirectly examine what the students themselves think about the teaching and the overall situation.

Focusing on an U.S. context, Morgan (2020) reviews the guidelines published by a number of reputable organizations within technology in education. Based on this, he summarizes a number of points for schools to be aware of during the implementation of online learning in order to improve students' benefit from teaching at distance. Researchers from Norway—a country that resembles Denmark—conducted a survey of more than 4,500 teachers in the Norwegian primary school, who had carried out distance learning with the students while the schools were locked down. One of the interesting findings is that more than half of the students 1st-4th grade (54%) only had contact with the teacher 2-3 times a week or less frequently, while 71% of the students 5th-9th grade had contact with the teacher at least once a day (Roe et al., 2020). Thus, the youngest students in Norway in particular experienced problems in relation to school and teacher contact. Furthermore, the teachers have only to a very limited extent used the possibilities for dialogue and class collaboration. The online teaching seems to reinforce individual working methods. This is very much like the Danish context (Qvortrup et al., 2020). A study, also with teachers as respondents, made by the Danish Union of Teachers (DUT) show that more than half of the students (to a large extent students with academic and/or social challenges, students from marginalized homes, students with a mother tongue other than Danish and/or students with special needs), are absent from classes (DUT, 2020). Previous research confirm that inequality between different groups of students is sustained within teaching during pandemics (Bish et al., 2011; Xia & Liu, 2013).

If we look beyond the corona pandemic, previous research on home education shows that home education sometimes challenge the collaboration between teachers and students because they are assigned new roles (van Wyk & Lemmer, 2007; Yao et al., 2020). The relationship between students and their teachers is decisive with regard to the outcome of home teaching (Jung et al., 2013; Nyhan et al., 2012; Prematunge et al., 2012) as it is in general and particularly in Home Economics Education (Christensen & Wistoft, 2016). In addition, the critical science paradigm of Home Economics gives a comprehensive understanding of family vulnerability, resilience and wellbeing—pre and post-disaster. Disaster, Risk Reduction and Management literature shows the need for disaster-related home economics research for more evidence-based information that determines how and why families and communities are affected by disasters and how they can be empowered to respond to, recover and resist the adverse effects of disasters (Gabriel, 2016).

Thus, there are also many studies that point to the need for knowledge about the consequences of the corona pandemic. Aspen Institute (2020, p. 1) is worried about the students' connectedness to school and the quality of their relationships with adults and peers in school, which "are critical to learning and thriving in life". A number of studies recognize the need to focus on the social and emotional wellbeing of students. Brooks et al. (2020) have done a literature review of the psychological impact of quarantine and concludes that "Most reviewed studies reported negative psychological effects including post-traumatic stress symptoms, confusion, and anger" (p. 912) with stressors being "longer quarantine duration, infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma" (Brooks et al., 2020, p. 912). Based on interviews with representatives of state agencies, Gill et al. (2020) conclude that "many respondents were concerned that social isolation, excessive screen time, and irregular schedules would present a major challenge for pupils in readjusting to school in the fall" (p. 19) and The Annie E. Casey Foundation (2020, p. 1) suggests that "[u]ndoubtedly, because of the COVID-19 pandemic, the world will remember 2020 as a year of fear, pain and loss for everyone". However, no studies to date have

examined the student-school relationship and the quality of students' relationships with adults and peers in school or the social and emotional wellbeing of students during the school closures.

## Research design

The questionnaire was designed so that students first had to answer questions—preferably with the support of their parents—and then the parents had to take over the questionnaire and answer a small number of questions addressed to them. Students and parents had to relate to statements on a five-point scale. All the questions concerned their experiences of the situation during the school lockdowns caused by the corona pandemic. In addition, the respondents were asked questions about the background variables: gender, age, municipality, school and socioeconomic background. The total response period was April 1–20. Most of the responses were received during the first week, when school lockdowns were at their peak, and before on-site teaching was resumed.

After removing all invalid answers, the data set consisted of 5,953 answers from students and 5,054 answers from parents. With a total student base in the six participating municipalities of 55,132 this gives a response rate of 10.8%. This is generally a relatively low response rate, but compared to similar surveys where the questionnaire is not sent to individual respondents (for instance by email), but distributed in the form of a link on a web-based platform such as the school's learning management system, the response rate is as expected (Carley-Baxter et al., 2013). Contrary this approach has the possibility of reaching out to a high number of possible respondents and thereby achieve a high frequency of responses which yields more statistical power. The greatest challenge is that certain groups of the population tend not to participate, which can lead to data being skewed. We have analyzed whether this is the case and conclude there is an equal distribution in the final data set regarding students' age, gender and geographical place of residence. However we also find that parents with low socioeconomic status are underrepresented compared to national demographic distributions. For more information on response rates and distribution in relation to background variables, please refer to the project's data report (Qvortrup et al., 2020).

When students and parents answered the questionnaire, they had to reflect on a total of 49 statements within the following overall themes in relation to teaching during school lockdowns:

- Students' everyday life and wellbeing (6 items)

- Framework and structure for schoolwork (7 items)

- Contact and collaboration with teachers and classmates (5 items)

- Teaching methods and perceived teaching quality (9 items)

- Belief in one's own abilities and mastery experiences (5 items)

- 9th grade students' thoughts about final exams (4 items)

- The role and situation of the parents (7 items)

- The students' and parents' experience of the teachers' and the school's efforts (6 items)

In addition, both students and parents could use an open text field to comment on the best and worst thing about the situation during school lockdowns. This provided us with text answers from both students and parents in which they could briefly, but freely, describe their experiences in their own words.

## Analytical strategy

In order to investigate age differences, we carried out cross-tabulations including the grade levels and all single items of the study. The results regarding 3rd grade were particularly interesting, which is why we will present 3rd grade student responses compared with the average responses of all students. We have done this by grouping single items according to six themes. The themes are:

1. Students' relationship with the teachers, peers and the school,

2. Students' ability to handle schoolwork independently,

3.  Students' contact with the school and peers,

4.  Students' experience of the quality of teaching during lockdowns,

5.  The help students receive from parents or others in the home, and

6.  Parents' experiences of the situation during school lockdowns.

For all these themes, we have calculated what percentage of the 3rd grade students have expressed complete or predominant agreement with a given statement, and compared this percentage with the average percentage of all students who have declared themselves completely or predominantly in agreement with the same statements.

In order to investigate which items correlate to such an extent they can be regarded as underlying latent factors, we have carried out an exploratory factor analysis. In this article, we use two variables based on this factor analysis. The first variable is *mental health*, and we have constructed this variable from 5 items (α = 0.72). The second variable is *parental concerns*, and we have constructed this variable from 4 items (α = 0.81). The alpha values (α) are acceptable based on general statistical quality criteria, which typically recommend values between 0.7 and 0.9, indicating that the constructed variables are reliable (Cho & Kim, 2015; Streiner, 2003; Tavakol & Dennick, 2011).

In order to investigate whether (across different age groups) particularly vulnerable groups can be identified who experienced teaching during school lockdowns as extraordinarily challenging, we have conducted two cluster analyses. There are many methodological variations of cluster analysis (Teo, 2013), but what they have in common is that a number of observations/respondents (*n*) are grouped into clusters (k) based on similarities. In other words, respondents grouped in one specific cluster are relatively uniform in their responses to a variety of statements that the researcher selects for the analysis. Implicitly, each cluster will differ from other clusters with regard to the same parameters (Petscher et al., 2013, p. 305). Each cluster will have special characteristics that make it possible to identify differences in a group of respondents compared with characteristics of a different group of respondents (Hancock & Mueller, 2010).

The approaches to cluster analysis differ primarily with regard to the way in which the grouping is calculated, depending on which algorithm is applied in the analysis (Karlson, 2017). In this study, we have applied the Wards Linkage approach. This is a hierarchical cluster method that uses an algorithm to initially calculate which two observations are most similar in the entire data set, and groups these in the same cluster. Then the next two observations are grouped, and so on until all the observations are grouped in clusters. From here all clusters are grouped by similarity. This process continues until all the data is reduced to one cluster which includes the entire dataset. A graphical representation in the form of a dendogram makes it possible to "go backwards" and see the structure of clusters constructed in the hierarchy, and from there choose how many clusters to use in the further analysis (Chen et al., 2005). Then one variable is constructed with the selected number of clusters in order to produce table analyses in which differences in clusters can be observed.

## Age-related differences

The cross-tabulations generally show that in terms of most parameters, the oldest students (students in 8th and 9th grade) had less negative experiences of teaching at home during school lockdowns than the youngest students. The age group that responded most negatively in terms of almost all parameters were the students in 3rd grade. This corresponds to the results from Norway, where responses from teachers indicated that the youngest students in particular had problems with regard to school and teacher contact (Roe et al., 2020). With regard to students' contact with teachers, peers and the school, Table 1 shows that 3rd grade students missed being with their teachers more than the average for all students. They do not experience to the same degree as the average students that teachers are aware whether they do their schoolwork. Presumably this is caused by the fact that 3rd graders experience having contact with at least one of the teachers every day to lesser extent than average (21% compared with an average of 34%). And compared with the average for all students, 3rd graders do not find it easy to get help from a teacher if there are tasks they do not understand.

Table 1          Students' relationship to teachers and school—3rd grade compared with the average of 3rd-9th grade

| Completely or predominantly agree<br>*Translated from Danish | 3rd grade | Average of 3rd-9th grade |
|---|---|---|
| I miss being with my teachers* | 80% | 60% |
| The teachers at my school are aware whether I am doing my schoolwork* | 66% | 77% |
| I have contact with at least one of my teachers every day* | 21% | 34% |
| If there are tasks I do not understand, it is easy to get help from a teacher* | 41% | 54% |

In terms of contact with their peers, students from 3rd grade experienced less contact than the average student. Table 2 shows that only 67% of the students from 3rd grade responded that they had contact with their classmates one or more times a week, compared with an average of 78%. With regard to getting help from their peers for tasks they did not understand, 3rd grade students responded significantly more negative compared with the average (15% against 47%). The number of students who experienced working in groups with questions or tasks on the computer was also significantly lower for 3rd grade students than for the average student (8% against 25%).

Table 2          Social and academic contact with the school and the peers—-3rd grade compared with the average of 3rd-9th grade

| Completely or predominantly agree<br>*Translated from Danish | 3rd grade | Average of 3rd-9th grade |
|---|---|---|
| I have contact with my classmates one or more times a week* | 67% | 78% |
| If there are tasks I do not understand, it is easy to get help from a friend* | 15% | 47% |
| We work in groups with questions or tasks on the computer* | 8% | 25% |

The 3rd grade students also experienced the quality of the lockdown teaching remarkably different than the average student. Nearly half (45%) of 3rd grade students experienced receiving feedback on their questions and assignments via the computer, against an average of 65%. Conversely, an above-average number of students in 3rd grade answered that they received help from their parents or others in the home. Furthermore, 70% of these students responded that their parents or others in the family made a plan for each day, compared with an average of 44%.

Naturally, this all affected the parents' situation. There were far more parents of children in 3rd grade (66%) who responded it was difficult to balance work, child/children and family life than parents in general (51%). We find these age-related differences striking. Consequently, it is necessary to develop and implement age-appropriate teaching strategies, as the youngest students clearly cannot handle a situation that involves participating in teaching from their homes in the same way as the oldest students.

## Particularly vulnerable students

Besides the above age-related differences, there are other noteworthy results at single item level. We will present a few of these results descriptively before moving on to the multivariate analysis. In the following, the numbers represent the respondents who completely or predominantly agreed (or completely or predominantly disagreed) with a given statement.

Social wellbeing was an area of particular concern. As shown in Table 3, more than 90% of all students predominantly or completely agreed that they missed their friends and peers. It was only 2.6% that overwhelmingly or completely disagreed with this statement. Almost as many missed their leisure activities. Slightly fewer missed the teaching and being with the teachers. Just under half of the respondents indicated they did not feel happy, and 18% completely or overwhelmingly agreed that they felt lonely. In short, they missed everyday life with their friends, leisure activities and schooling.

Even though all parties made every effort, some of the students (just under 20%) felt that they did not perform well with this type of teaching. They found it difficult to concentrate sufficiently. Just over 15% found it difficult to keep up. In addition, almost 30% thought they spent too much time on things other than school, and approximately 40% of both students and parents said they did not make

plans for schoolwork every single day. Almost 30% of all students felt they could not master the teaching, and they did not believe their own abilities were good enough to handle the teaching during school lockdowns caused by the corona pandemic.

**Table 3       Students' agreement with the statement *I miss my friends and peers***

|                            | Frequency | Percentage |
|----------------------------|-----------|------------|
| Totally agree              | 4,654     | 79.94%     |
| Mostly agree               | 739       | 12.69%     |
| Neither agree nor disagree | 251       | 4.31%      |
| Predominantly disagree     | 86        | 1.48%      |
| Totally disagree           | 66        | 1.13%      |
| Do not know                | 26        | 0.45%      |
| **Total**                  | **5,822** | 100.00%    |

One statement was about students' self-confidence and belief in their own abilities. As shown in Table 4, just over 18% of the students completely or predominantly disagreed with the statement *I do well with this kind of teaching*. In itself, this number is thought-provoking: nearly one in five students were in doubt as to whether they could cope with the situation of attending teaching from their homes. The number of approximately 20% can be found in a wide range of answers to comparable statements. These are students who do not think they can concentrate, who do not have sufficient contact with their teachers or peers regarding assignments and schoolwork, and who probably—-even though this is not something we can say with certainty based on our data—-do not have sufficiently good conditions at home or support from parents to learn while attending school from home.

**Table 4       Students' agreement with the statement *I do well with this kind of teaching***

|                            | Frequency | Percentage |
|----------------------------|-----------|------------|
| Totally agree              | 1,227     | 22.91%     |
| Mostly agree               | 1,825     | 34.07%     |
| Neither agree nor disagree | 1,157     | 21.60%     |
| Predominantly disagree     | 525       | 9.80%      |
| Totally disagree           | 459       | 8.57%      |
| Do not know                | 163       | 3.04%      |
| **Total**                  | **5,356** | 100.00%    |

## Cluster analysis

In one of the cluster analyses we grouped respondents in terms of similarity in their answers to the following items: Whether the parents make a plan for each day; whether students know what teachers want them to do; whether teachers are aware of whether students are doing their schoolwork and how they are doing; whether it is easy to get help from a teacher and/or parents; whether the students have contact with the teachers; whether students experience being able to follow the teaching; and whether the students can concentrate on the daily school activities. These are all statements that characterize how students experience coping and being supported both at home and by the school. We compared these answers on single item level to the students' mental health status, which is an index constructed by the following single items: *I am happy with my current everyday life*; *I miss my friends*; *I miss being with my teachers*; *I miss teaching at school*; *I miss my leisure activities*. For further elaboration of the students' wellbeing and mental health, see Wistoft, Christensen and Qvortrup, 2020. The results of this cluster analysis are shown in Table 5.

Table 5 shows that students in clusters 1 and 2 are similar regarding a wide range of parameters. In both cases, these are students who experience they have good contact with the teachers: they mostly

know what the teachers want them to do, and they experience the teachers are aware of whether they do their schoolwork, and that teachers are aware about how they feel, and they experience that it is easy to get help from a teacher. They also find that it is easy to follow the teaching and concentrate on school activities. One difference between cluster 1 and 2 relates to their parents. Many of the students in cluster 1 say that their parents make a plan for each day; but in cluster 2 students respond more negatively to this question. The same applies to the question of whether it is easy to get help from parents for tasks that students do not understand. It can be assumed that students in cluster 2 are more independent than students in cluster 1, although of course this is only a plausible interpretation. There is also a difference between cluster 1 and 2 with regard to mental health—the students in cluster 1 indicate a higher average degree of mental health than the students in cluster 2.

**Table 5      Cluster analysis 1**

| Index | Cluster 1 | Cluster 2 | Cluster 3 |
|---|---|---|---|
| 1. Mental health | 0.28 | -0.04 | -0.22 |
| **Single items** | | | |
| 1. My mother/father/others in the family make a plan for each day | 0.51 | -0.84 | 0.06 |
| 2. I mostly know what the teachers want me to do | 0.22 | 0.48 | -0.52 |
| 3. The teachers at my school are aware of whether I am doing my schoolwork | 0.36 | 0.41 | -0.66 |
| 4. The teachers at my school are aware of how I feel | 0.39 | 0.35 | -0.66 |
| 5. If there are tasks I do not understand, it is easy to get help from a teacher | 0.43 | 0.52 | -0.79 |
| 6. If there are tasks I do not understand, it is easy to get help from my parents | 0.38 | 0.02 | -0.40 |
| 7. I have contact with at least one of my teachers every day | 0.44 | 0.35 | -0.53 |
| 8. It is easy to follow the teaching | 0.19 | 0.53 | -0.58 |
| 9. I can concentrate on the school activities I have to do during the day | 0.22 | 0.42 | -0.49 |
| Number of respondents in cluster (*n*) | 1,695 | 1,157 | 1,523 |
| Percentage distribution | 38.70% | 26.50% | 34.80% |

*N* = 4,375, *p* = 0.000

The responses of students in cluster 3 are very different from those of students in clusters 1 and 2. The students in cluster 3 do not experience to know what the teachers want them to do, nor do they experience that the teachers are aware of whether they are doing their schoolwork or how they are doing. They also respond to have a low degree of daily contact with the teachers; and if there are tasks they do not understand, they find it difficult to get help from a teacher. Self-confidence is also low for students in this cluster: they do not find it easy to follow the teaching, and they find it difficult to concentrate on the school activities during the day. The students in cluster 3 are about average in terms of whether they experience their parents make a plan for each day. But at the same time, their answers show they find it difficult to get help from their parents if there are tasks they do not understand. Finally, it is also this group of students who expresses the lowest degree of mental health.

Cluster 3 represents a total of 34.8% of the students. According to table 5, this group has a lower coefficient than the other two groups in terms of almost all the parameters included in the analysis. In other words, they answer significantly more negatively to questions concerning their experience of teaching during school lockdowns caused by the COVID-19 pandemic. They do not have the same predominantly positive experience of teaching that took place in the home as the other two groups of students. It is important to identify and be aware of this group, both during periods of school lockdowns and when schools reopen for teaching with physical attendance.

We conclude that only about 20% of the students in our study are in this at-risk group (instead of saying that about one-third of them belong to this group). This is due to the results of the statements

presented at single-item level earlier. Almost 20% of the students did not think they did well with home schooling. Just over 15% found it difficult to keep up. The same number of approximately 20% is found in the responses to statements about whether students thought they could concentrate or had sufficient contact with their teachers and peers regarding assignments and schoolwork. In other words, for each individual parameter we examined, there are approximately one-fifth of the students who say they are having a particularly hard time. In addition, in the cluster analysis, a group of approximately one-third respond significantly more negatively to all parameters than is the case for the remaining two-thirds of students. The 20% that make up the "risk group" is a subset of cluster 3.

## Mental health and parental concerns in homeschooling

In the second cluster analysis, we conducted a more detailed investigation of students' mental health. We define mental health as a form of robustness enabling student to cope and learn under difficult living conditions (Wistoft & Qvortrup, 2017), in accordance with the previous description of which single items the index is constructed from. We divided all the respondents into three subgroups: students that express a high, medium, or low degree of mental health respectively. We compare these three groups with parental concerns, which is an index we have constructed from the statements: We are concerned about our child/children's learning and development; we are concerned that our child/children will be infected with coronavirus; we are concerned about how the corona epidemic affects our child/children mentally; we are concerned about how the corona epidemic affects our child/children's situation in relation to peers and leisure life. We were interested in analyzing whether there was a correlation between the high/low level of mental health of the students, and high/low parental concerns. In addition, we compared the three groups based upon the students' degree of mental health with a number of single-item statements regarding the students' experience of teaching, teachers, peers and family.

Table 6 shows that cluster 1 contains the group of students that report the lowest degree of mental health, and we find it noteworthy that this group also has the parents with the lowest degree of concern. It is this group that to lowest degree meets online with friends, and it is this group that is least inclined to say that teachers make a plan for each individual day. Like students in cluster 2, this group of students report a relatively low degree of doing *more cozy activities with my family than normal*. Hence this is a group of students that have low mental health who are isolated from school—and possibly also from their parents. It is worth pointing out that parents in this cluster worry relatively little about their children, even though they perhaps should. Cluster 1 accounts for 37.4% of all respondents included in the analysis (*n* = 1,715).

**Table 6        Cluster analysis 2**

| Index | Cluster 1 | Cluster 2 | Cluster 3 |
|---|---|---|---|
| 1. Mental health | -0.37 | 0.11 | 0.36 |
| 2. Parental concerns | -0.25 | 0.41 | -0.13 |
| **Single items** | | | |
| 1. I do more schoolwork than I usually do | 0.07 | -0.13 | 0.05 |
| 2. I do more cozy activities with my family than normal | -0.24 | -0.24 | 0.5 |
| 3. I meet with my friends online (e.g. computer games or social media) | -0.36 | 0.12 | 0.38 |
| 4. My teachers from school make a plan for each day | -0.35 | -0.08 | 0.5 |
| 5. I mostly know what the teachers want me to do | 0.18 | -0.64 | 0.45 |
| 6. The teachers at my school are aware of whether I do my schoolwork | 0.04 | -0.44 | 0.38 |
| 7. It is easy to follow the teaching | 0.17 | -0.7 | 0.47 |
| 8. I can concentrate on the school activities I have to do during the day | 0.18 | -0.76 | 0.52 |
| Number of respondents in cluster (*n*) | 1,715 | 1,320 | 1,549 |
| Percentage distribution | 37.40% | 28.80% | 33.80% |

*N* = 4,584, *p* = 0.000

Cluster 2 is the group of students that report a medium level of mental health compared with the two other clusters. This is the group whose parents have the highest level of concern. Compared with

the other two clusters, these students do not experience that they are doing more schoolwork than usual. They are least aware of what the teachers want them to do, and they have the strongest sense that their teachers are unaware of whether they are doing their schoolwork. They report the most difficulty in following the teaching, and the most difficulty in concentrating on the school activities. Here it seems that a medium degree of mental health is correlated with a negative experience of the teaching. Parents in this group are rightly concerned about their children, which could call for an intervention. Cluster 2 accounts for 28.8% of all respondents included in the analysis (*n* = 1,320).

Cluster 3 is the group of students that reports the highest degree of mental health, and this group reports doing cozy activities with their family and meeting friends online more than the other groups. They also experience that teachers make a plan every day, and that the teachers are aware whether the schoolwork is being done. The students in this group know what the teacher wants them to do, they find it easy to follow the teaching, and they feel they are able to concentrate on the school activities. Their parents—for good reason—have a relatively low degree of concern. Cluster 3 accounts for 33.8% of all respondents included in the analysis (*n* = 1,549).

## Conclusion

This article has dealt with three focus points: Firstly, an identification of the importance of age in relation to managing school lockdown challenges. Secondly, an identification of the particularly vulnerable group of students during school lockdowns caused by the COVID-19 pandemic. Thirdly, an analysis of the students' wellbeing and mental health, which has been compared with parents' degree of concern for their children. Three things stand out:

1. That there are clear age differences, and the youngest students had the most difficulty in terms of teaching and learning at home,

2. That one-fifth of the students were so challenged that they constitute a "risk group", and

3. That home schooling challenged the students' mental health and wellbeing.

With regard to the age-related differences, it is quite clear that in many ways it was more challenging for the youngest students to cope with school lockdowns than it was for the oldest students. The students from 3rd grade experienced poorer relationships with the teachers, peers and the school than the average student. At the same time, they had more difficulty in carrying out schoolwork independently. Also, the students from 3rd grade experienced less social contact with the school and their peers than the average for the students as a whole. Furthermore, 3rd graders reported that the quality of teaching was poorer than the average student did. Thus, the study confirms the experiences from Norway that social and educational contacts were harder for the youngest students than the oldest students (Roe et al., 2020). However, our study shows that more of the 3rd grade students felt that they received help from their parents or others in the home than the average student did. Hence the parental relationship compensates for the challenged student-teacher role. We are thus expanding the results of van Wyk and Lemmer (2007) and Yao et al. (2020), as it appears that it is not only teachers and students who are assigned new roles, but also parents. Perhaps it was this greater dependence on the parents that led to the fact that more parents of children in 3rd grade felt it was difficult to balance work, child/children and family life than parents in general. In other words, there are reasons to focus on the youngest children in particular, not only during school lockdowns but also when they return to regular schooling.

In terms of single items, an average of one-fifth of the students felt that they were having a particularly difficult time. In addition, a group of approximately one-third responded significantly more negatively to all parameters than the remaining two-thirds of students. These students did not receive sufficient support at home. They did not have the opportunity to share their difficult situation with anyone who could help them, and they did not experience sufficient contact with the school and the teachers. For them teaching during school lockdowns was a very negative experience. Many of them were unsure of how much they were learning. In other analyses, the differences between the students have been attributed to the socioeconomic status of their families (Wistoft, Christensen & Qvortrup, 2020). So we can confirm and expand the results of previous studies that point to variations between different groups and individual characteristics (Bish et al., 2011; Xia & Liu, 2013).

The theme of wellbeing and mental health during homeschooling perhaps deserves the most attention. We can see that almost all the students missed their friends, school and leisure activities, and that almost one-fifth of them felt lonely. On the one hand, physical contact with friends was greatly reduced; but conversely, many of the children were unsure how much they were learning. At the same time, some of the parents also expressed concern about their children's learning and wellbeing—and about their mental health and wellbeing. It is important to emphasize that there is a correlation between the mental health of some of the students and the parents' level of concern: The parents of children who reported the lowest degree of mental health expressed the lowest level of concern for their children's learning and mental development. As these children also had sparse contact with their peers, teachers and the school, and did not feel they had many cozy activities with their families, they were at particular risk.

We have already mentioned some of the general expectations regarding the significance of the corona crisis for future teaching. Generalizations should of course always be treated with caution. The corona crisis constitutes an exceptional situation and has required extraordinary efforts by teachers, students and parents alike. But the lessons learned during this crisis can also be used in the future. School lockdowns, distance learning and homeschooling have a major impact on a large group of students in terms of their participation in teaching, learning processes, mental health and wellbeing. They feel lost at home.

### Ethics statement

The study was conducted in accordance with European General Data Protection Regulation (GDPR). Consent was obtained from each participant. All participants have been anonymized in the dissemination of the study results.

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