

Social-emotional conditions of children during the reopening of kindergarten and schools after the Covid-19 lockdown

Data report

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Background and data

The risk of spread of COVID-19 during Spring and Summer 2020 put kindergarten and primary school, teachers and children, under pressure. In the beginning of March 2020, parents were ordered to keep their children at home, and shortly hereafter (March 19th 2020) the ‘Ny lov og bekendtgørelse om nødundervisning’ (BEK nr 242 af 19/03/2020) was enacted. In a first phase, all school activities had to be conducted using online resources, away from school premises, in the setting of the children’s individual homes. In a second phase, the kindergartens/schools were ordered to undertake a controlled reopening in other settings that met certain criteria in regard to physical and social restrictions in line with health and hygiene restrictions. These circumstances forced teachers to be creative: e.g. facilitating outdoor learning environments, smaller groups of pupils/children, blended learning activities, combining physical presence with computer-supported learning activities.

This two-phase transformation of the kindergarten/school setting disrupted the traditional ways of organizing activities in kindergarten and school and, presumably, the roles of teachers and children, and the conditions for and impact of learning through play. Furthermore, the two-phase transformation of the kindergarten/school setting may have had a number of consequences for the social-emotional conditions of the children. A survey of parents’ and children’s experiences during the lockdown (Qvortrup et al. 2020) that was completed in the middle of the first phase, showed that on the one hand parents as well as children expressed a feeling of being well taken care of. On the other hand, the children were severely challenged in regard to their wellbeing, mental health, self-efficacy, etc. These challenges seemed to be related to a number of conditions, like fear of illness, stress from the closure, academic stress, and lack of perceived coping, etc. However, differences across the participating municipalities and schools also indicated that the different strategies applied to ensure reassuring and playful learning environments were of great importance.

To provide empirical knowledge of the situation after the reopening and the effect of different strategies applied to ensure reassuring and playful learning environments on children’s social-emotional conditions, and to provide a knowledge base for addressing the challenges posed by the situation professor Ane Qvortrup, assistant professor Thomas Enemark Lundtofte, assistant professor Vibeke Christensen, research assistant Rune Lomholt and research assistant Anni Nielsen at University of Southern Denmark conducted a study in June and July 2020, funded by the LEGO foundation.

The purpose of the study has been to investigate the social-emotional experiences of children, as they were re-entering their learning environments during the controlled reopening (phase 2), and the way different settings or conditions in the children’s learning environments affected their social-emotional experiences. Furthermore, the project mapped the strategies and resources employed by schools and teachers during the phase of re-opening in which the children’s learning environments had to be reworked, in order to explore the importance of different strategies and resources.

The research questions were:

- 1) What are the social-emotional experiences of the children, who were challenged from the experiences during the lockdown and have been socially isolated, as they are re-entering the learning environment?

- 2) What characterizes children's learning environments in light of the new conditions for organizing playful learning, and how are these environments affecting children's experiences, positively or negatively?
- 3) Which strategies and resources have supported the teachers' reinvention of the learning environments during the controlled reopening of schools and kindergartens?

Methodologically, the project was based on a mixed method study with:

- 1) pre-interviews for survey development purposes with 1-2 school leaders, 2 kindergarten leaders and 2-3 teachers in each of 4 municipalities: Jammerbugt, Tønder, Odense and Gladsaxe.
- 2) survey among school and kindergarten teachers in 4 municipalities: Jammerbugt, Tønder, Odense and Gladsaxe
- 3) survey among children from 3rd to 9th grade of schools in 4 municipalities: Jammerbugt, Tønder, Odense and Gladsaxe
- 4) observations on children in kindergarten and 1st grade of schools in 1 kindergarten and 1 school (two days each place) in 3 municipalities: Jammerbugt, Odense and Gladsaxe

Due to great time pressure, the selection of municipalities was based on who could participate. Even so, it was an important criterion that the total group of municipalities should represent a good variety of municipalities, schools and kindergartens in terms of size, geography and demographics.

In early June 2020, interviews were conducted, and questionnaires were developed and pilot tested. The surveys were distributed to all schools and kindergartens on Monday, June 22nd and a reminder was sent on Wednesday, June 24th. The children survey was closed on Friday, June 26nd, and to teachers in schools and kindergartens on Wednesday, July 1st.

This report conveys the data from the school children and teacher surveys. Later analyses will help elucidate more complex relationships and contexts. Altogether, this provides a solid basis for understanding the situation from a children and teacher perspective.

University of Southern Denmark is responsible for all data processing. With regard to data storage and data management, agreements have been made with the university's legal department, which ensures the anonymity and integrity of the informants. For the sake of participants' privacy, results from units with fewer than 10 responses are not disseminated.

Our primary target group is children, teachers and leaders in the participating schools and kindergartens. This report and other publications should be seen as a way of thanking participants for taking the time to engage in interviews, to distribute and answer the survey and for providing access to collections of observational data.

Our secondary target group is the entire sector and all school and kindergarten stakeholders who get a solid picture of the situation. The sector deserves the most robust feedback possible considering the immense task they have undertaken during the two phases of closure and reopening.

On behalf of the project team at University of Southern Denmark,

Professor and project leader
Ane Qvortrup

Part 1: Rules and restrictions after reopening

A group of questions in the survey examines the rules and guidelines in schools and kindergartens after reopening and how these rules and guidelines have been handled and experienced by children and teachers.

With the first question, teachers and children are asked about the prevalence of new rules and restrictions after the reopening. The teacher question is specified according to different types of rules and restrictions, while the children just have to relate to rules and restrictions as a category. Both respondent groups answer the questions about the prevalence of rules and restrictions based on dichotomous yes/no scales.

The teachers' responses show that all schools have had rules regarding hand hygiene (table 1). In the vast majority of schools, parents have also been prohibited from accessing the school (95,5%, cf. table 2). Another common feature is that in- and/or outdoor facilities have been divided into zones (95,5%, cf. table 3).

	Respondents	Percentage
Yes	178	99,4%
No	1	0,6%
Total	179	#####

Table 1: Teachers' responses to the question "There have been rules regarding extra hand hygiene (hand washing, use of hand sanitizer, etc)"

	Respondents	Percentage
Yes	8	4,5%
No	171	95,5%
Total	179	#####

Table 2: Teachers' responses to the question "Parents have had access to the school"

	Respondents	Percentage
Yes	171	95,5%
No	8	4,5%
Total	179	#####

Table 3: Teachers' responses to the question "The indoor and/or outdoor areas have been divided into zones"

The children answer the question "Have there been many new rules on extra hygiene (for example, handwashing and use of hand sanitizer) and zoning at school after reopening?". In line with the teachers' description of the prevalence of new rules and restrictions, the majority of students indicate that there have been many new rules. The distribution of children's responses is shown in table 4:

	Respondents	Percentage
Yes	1186	96,3%
No	46	3,7%
Total	1232	####

Table 4: Children's responses to the question "Have there been many new rules on extra hygiene (for example, handwashing and use of hand sanitizer) and zoning at school after reopening?"

After the questions about the prevalence of new rules and restrictions, the children and teachers are asked if they think the new rules and restrictions affect students' daily lives and their mental resources. They do this by expressing the degree to which they agree with a number of statements on a 4-point scale ranging from 'To a great extent' and 'To a moderate extent' to 'To a lesser extent' and 'Not at all'.

The teachers' responses are shown in table 5-7, where they relate to the following statements: "My pupils have had a hard time complying with the new hygiene rules" (table 5), "My students have adhered to the permitted zones/areas without any problems" (table 6) and "My pupils understand why the new rules and restrictions are necessary" (table 7). The number of respondents in each table does not fully correspond with the total number of teacher respondents, as they have only been asked a given question if they had previously indicated that the rule or restriction in question has been introduced at their school.

	Respondents	Percentage
To a great extent	8	4,5%
To a moderate extent	52	29,2%
To a lesser extent	79	44,4%
Not at all	39	21,9%
Total	178	####

Table 5: Teachers' responses to the statement "My pupils have had a hard time complying with the new hygiene rules"

	Respondents	Percentage
To a great extent	95	55,6%
To a moderate extent	66	38,6%
To a lesser extent	8	4,7%
Not at all	2	1,2%
Total	171	####

Table 6: Teachers' responses to the statement "My students have adhered to the permitted zones/areas without any problems"

	Respondents	Percentage
To a great extent	99	55,3%
To a moderate extent	74	41,3%
To a lesser extent	5	2,8%
Not at all	1	0,6%
Total	179	####

Table 7: Teachers' responses to the statement "My pupils understand why the new rules and restrictions are necessary"

As can be seen from tables 5-7, according to the teachers most of the school children have either to a moderate extent or to a great extent been able to handle the new rules and restrictions. 21,9% have chosen 'Not at all' and 44,4% 'To a lesser extent' to the statement that their pupils have had difficulty complying with the new hygiene rules. However, there are also nearly 30%, who have chosen 'To a moderate extent', and 4.5%, who have chosen 'To a great extent'.

Apparently, it has been easier for students to adhere to the zoning of the outdoor and indoor areas. 55,6% of the teachers have chosen 'To a great extent' and 38,6% 'To a moderate extent', while only 4,7% and 1,2% have chosen 'To a lesser extent' and 'Not at all' in answer to the statement "My students have adhered to the permitted zones/areas without any problems".

Perhaps even more importantly, according to the teachers the children understand why the new rules and restrictions are necessary. Here, 55,3% and 41,3%, respectively, have chosen 'To a great extent' and 'To a moderate extent'. Only very few teachers have chosen 'To a lesser extent' and 'Not at all'.

The impression we get from teachers' feedback regarding children's comprehension of rules and restrictions is confirmed when we look at the pupils' responses. Also, very large proportions of pupils (60,8% and 29,6%) respond either 'To a great extent' or 'To a moderate extent' to the statement "I understand why the new rules are important" (cf. table 10). However, it is more varied if we look at pupils' experience of what it has been like to comply with the rules and restrictions. As can be seen in table 8, the responses are distributed as follows: 26,4% to 'Not at all', 35,2% to 'To a lesser extent', 32,9% to 'To a moderate extent' and 5,5% to 'To a great extent', when asked to relate to the statement "I find it difficult to comply with the new rules". A similar distribution is seen in relation to the statement "I spend a lot of time thinking about what I can/cannot do in school" (cf. table 9). Here the responses are distributed so 24,3% have chosen 'Not at all' and 39,0% have chosen 'To a lesser extent', while 29,4% have chosen 'To a moderate extent' and 7,3% 'To a great extent'.

	Respondents	Percentage
To a great extent	65	5,5%
To a moderate extent	390	32,9%
To a lesser extent	418	35,2%
Not at all	313	26,4%
Total	1186	####

Table 8: Children's responses to the statement "I find it difficult to comply with the new rules"

	Respondents	Percentage
To a great extent	87	7,3%
To a moderate extent	349	29,4%
To a lesser extent	462	39,0%
Not at all	288	24,3%
Total	1186	####

Table 9: Children's responses to the statement "I spend a lot of time thinking about what I can/cannot do in school"

	Respondents	Percentage
To a great extent	721	60,8%
To a moderate extent	351	29,6%
To a lesser extent	76	6,4%
Not at all	38	3,2%
Total	1186	####

Table 10: Children's responses to the statement "I understand why the new rules are important"

Part 2: Conditions for playful learning after reopening

A key term in this project is playful learning environments. A playful learning environment is where children experience learning as something joyful, meaningful, actively engaging, iterative, and socially interactive (Parker & Thomsen 2019). We will return to these five characteristics below in part 4 on the experiences of playful learning after reopening. In this section, we address the question of whether key conditions for playful learning appear to have been present in schools after their reopening. When we talk about conditions for playful learning, we refer to the ways in which the school day has been organized as well as various physical and social circumstances. Our assumption is that a critical requirement for playful learning is that children must have agency in the form of adults (e.g. teachers) validating their capabilities (Daniels & Shumow, 2003). Agency is about the balance of initiative in the child-adult relationship, and it is about the teacher supporting rather than directing the child (Zosh, Hopkins, Jensen, Liu, Neale, Hirsh-Pasek, Solis & Whitebread 2017). Furthermore, it is central to consider which opportunities pupils have been offered towards exerting their thinking and actions. Previously, in part one, we considered the rules and restrictions and the way they affected the children. Here, it became clear that a group of children found it difficult to handle the rules and restrictions, and that a group experienced spending a lot of time thinking about what was allowed/not allowed. One must assume that these students have fewer mental resources for exerting their thinking and actions.

In what follows, we delve into the way school days have been organized, and the physical and social circumstances. Two dimensions have guided our focus: social networks/relations and flow of activities. Consequently, we have been interested in how the contexts establish and provide good frameworks for social networks and relationships, and for establishing and maintaining a ‘flow’ of activities (Sinclair, 2004; Cheng, Reunamo, Cooper, Liu, & Vong, 2015).

Initially, we have asked about the number of educators (teachers and pedagogues) during the reopening, which is assumed to have had a significant impact on the educational and pedagogical opportunities. On a dichotomous yes/no scale, the educators are asked to respond to the statement "There has been more staff than usual (e.g. extra use of temporary staff)". The distribution of responses is shown in table 11.

	Respondents	Percentage
Yes	129	72,1%
No	50	27,9%
Total	179	####

Table 11: Teachers’ responses to the question "There has been more staff than usual (e.g. extra use of temporary staff members)"

Yes-respondents are asked to assess whether they perceive the extra resources as having had a positive influence on the educational opportunities. They respond on a degree scale from 'To a great extent' and 'To a moderate extent' to 'To a lesser extent' and 'Not at all'. As can be seen in table 12, almost everyone experience it to have had a positive impact.

	Respondents	Percentage
To a great extent	100	77,5%
To a moderate extent	26	20,2%
To a lesser extent	2	1,6%
Not at all	1	0,8%
Total	129	####

Table 12: Teachers' responses to the statement "The extra resources due to fewer children/extra staff have had a positive impact on the educational opportunities"

Regarding the organization of school days, we ask the teachers to react to the statements: "The pupils' school days have been shorter than usual", "The pupils' school days have been divided into subjects as usual". Again, we use a dichotomous yes/no scale and the yes-respondents are asked to assess whether the changed organization of the school day has had a positive or negative impact on the children.

	Respondents	Percentage
Yes	138	77,1%
No	41	22,9%
Total	179	####

Table 13: Teachers' responses to the question "The pupils' school days have been shorter than usual"

	Respondents	Percentage
Yes	35	19,6%
No	144	80,4%
Total	179	####

Table 14: Teachers' responses to the question "The pupils' school days have been divided into subjects as usual"

As table 13 and 14 show, there is a slight variation when it comes to the way the schools have organized school days. Regarding the length of the school days, 77,1% indicate that the school days have been shorter than usual, while 22,9% indicate the opposite. Also, regarding the division of the days, we see some variation. 80,4% indicate that the school days have not been divided into subjects as usual, while 19,6% indicate that they have.

According to teachers' reported experiences, the impact of these changes on the pupils are very positive. As shown in table 15 and 16, according to teachers, the changes have had a positive impact on pupils' mental resources and daily lives.

	Respondents	Percentage
To a great extent	110	79,7%
To a moderate extent	22	15,9%
To a lesser extent	5	3,6%
Not at all	1	0,7%
Total	138	####

Table 15: Teachers' responses to the statement "Shorter school days have affected my pupils' mental resources in a positive way"

	Respondents	Percentage
To a great extent	99	55,3%
To a moderate extent	65	36,3%
To a lesser extent	12	6,7%
Not at all	3	1,7%
Total	179	####

Table 16: Teachers' responses to the statement "Changes to the school schedule have affected my pupils' daily lives in a positive way"

Regarding the physical circumstances, the teachers and children have been asked about the balance between indoor and outdoor activities and the use of different locations. Our assumption is that when learning occurs in new and different settings and contexts, for example outdoors, on a field trip, or as a group activity or experiment, it can foster curiosity and commitment, but also expand social networks and dissolve barriers between individuals and groups that are sometimes created in traditional classroom settings.

First, we ask the children, if the amount of time spent in traditional classroom settings is lower or higher than usual. As shown in table 17, 33,0% and 40,0% of the children totally agree or agree that they have spent less time in the classroom than usual:

	Respondents	Percentage
Totally agree	406	33,0%
Agree	491	40,0%
Disagree	230	18,7%
Totally disagree	102	8,3%
Total	1229	####

Table 17: Children's responses to the statement "We have spent less time in our regular classroom than usual"

Thus, there is reason to specify the new school contexts in more detail. To do so, we have asked both teachers and children about the use of different settings outside the traditional classroom. At first, we ask them about the use of buildings outside the school such as sports facilities, gyms, local halls etc.

A small group of teachers and pupils indicates that teaching has been moved to buildings outside the school, but many also state that this has not been the case (see table 18 and 19).

	Respondents	Percentage
To a great extent	16	9,0%
To a moderate extent	22	12,4%
To a lesser extent	45	25,4%
Not at all	94	53,1%
I alt	177	####

Table 18: Teachers' responses to the statement "We have had more classes in buildings outside school than usual (sport facilities, gyms, local halls etc.)"

	Respondents	Percentage
Totally agree	131	10,7%
Agree	260	21,2%
Disagree	420	34,2%
Totally disagree	418	34,0%
Total	1229	####

Table 19: Children's response to the statement "We have had more classes in buildings outside school than usual (sport facilities, gyms, local halls etc.)"

More teachers and children agree that classes have taken place outdoors (see table 20 and 21) and/or included trips outside the school area (see table 22 and 23).

	Respondents	Percentage
To a great extent	136	76,8%
To a moderate extent	33	18,6%
To a lesser extent	5	2,8%
Not at all	3	1,7%
I alt	177	####

Table 20: Teachers' responses to the statement "There are more outdoor activities than usual"

	Respondents	Percentage
Totally agree	493	40,1%
Agree	521	42,4%
Disagree	160	13,0%
Totally disagree	55	4,5%
Total	1229	####

Table 21: Children's responses to the statement "We are more outside during classes than usual"

	Respondents	Percentage
To a great extent	96	54,2%
To a moderate extent	50	28,2%
To a lesser extent	22	12,4%
Not at all	9	5,1%
I alt	177	####

Table 22: Teachers' responses to the statement "We have been on more trips outside the school than usual"

	Respondents	Percentage
Totally agree	391	31,8%
Agree	504	41,0%
Disagree	228	18,6%
Totally disagree	106	8,6%
Total	1229	####

Table 23: Children's responses to the statement "We have been on more trips outside the school than usual"

On the one hand, one would expect that experiences with digital media and online teaching from the school closure phase would be transferred to handle teaching across smaller groups after reopening. On the other hand, the changed physical contexts in the form of outdoor teaching and the new hygiene rules could challenge the use of digital media. We ask children and teachers if computers/chromebooks/tablets have been used less than usual. As shown in table 24 and 25, a large group of both students and teachers disagree.

	Respondents	Percentage
To a great extent	28	15,8%
To a moderate extent	52	29,4%
To a lesser extent	48	27,1%
Not at all	49	27,7%
Total	177	####

Table 24: Teachers' responses to the statement "During classes, we use computers/tablets or digital media less than usual"

	Respondents	Percentage
Totally agree	137	11,1%
Agree	328	26,7%
Disagree	516	42,0%
Totally disagree	248	20,2%
Total	1229	####

Table 25: Children's responses to the statement "During classes, we use computers/chromebooks/tablets less than usual"

As an additional question to the teachers, we ask whether teaching has been conducted online more often than usual. According to 6,2% of the teachers, this is very much the case, while 22,6% indicate that it is to a moderate extent the case. 36,7% and 34,5% indicate that it is either To a lesser extent or not at all the case (cf. table 26).

	Respondents	Percentage
To a great extent	11	6,2%
To a moderate extent	40	22,6%
To a lesser extent	65	36,7%
Not at all	61	34,5%
Total	177	####

Table 26: Teachers' responses to the statement "Teaching is more often completed online than usual"

Regarding social circumstances, the teachers and children have been asked about social relationships during a school day. Pupils are asked how many teachers they have had during the last fourteen days and to what extent the class has been divided into smaller groups.

The box' whiskers in figure 1 indicate the upper and the lower adjacent values, showing that pupils report being in contact with 1 to 10 different teachers in the fourteen-day period. The median is four teachers, and the box shows that the variance between the 25th and the 75th percentile is concentrated between three and six different teachers.

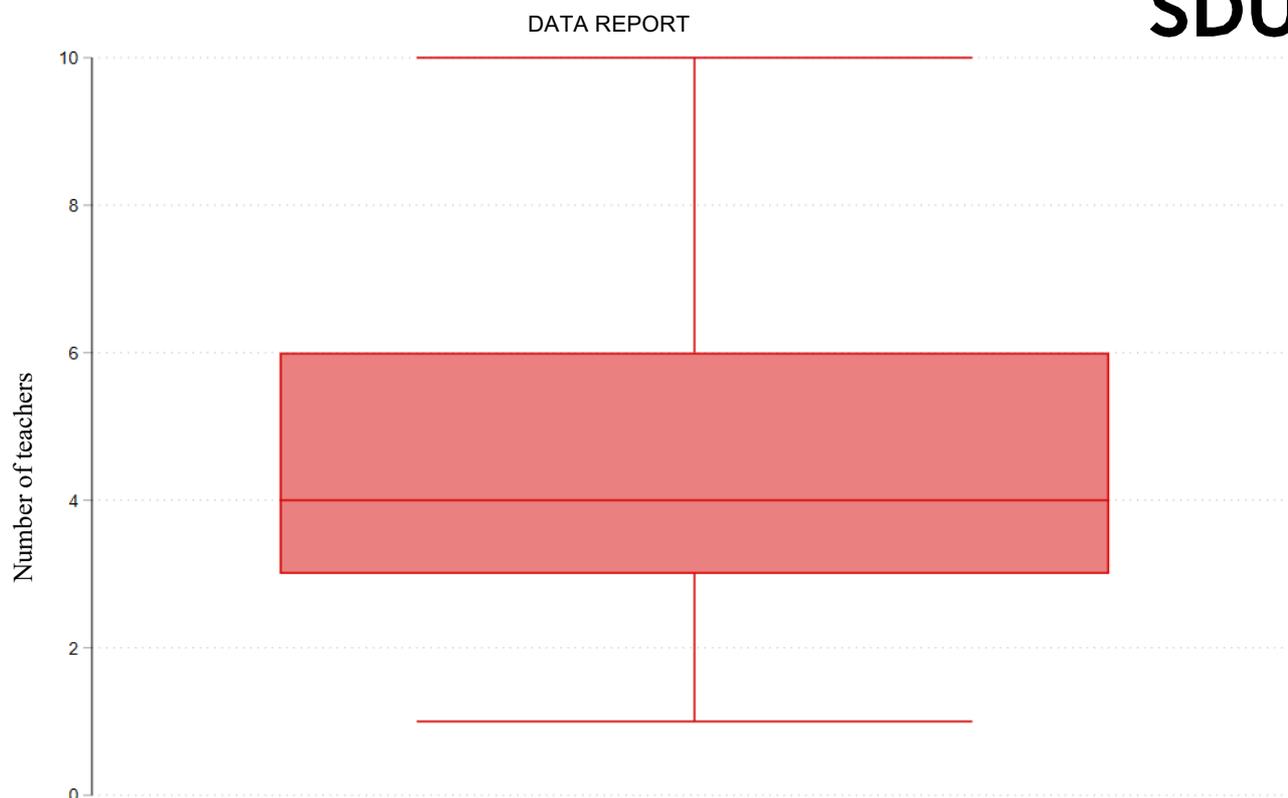


Figure 1: Children’s responses to the statement “How many teachers have you had in the past 14 days?”

The figure 2 shows the distribution of child-responses on a dichotomous yes/no scale to the question “Has your class been divided into smaller groups after school has reopened?”

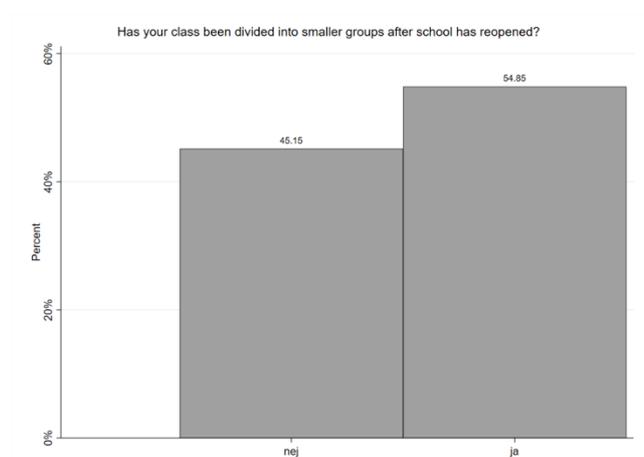


Figure 2: Children’s responses to the statement “Has your class been divided into smaller groups after school has reopened?”

As can be seen, the distribution of children’s responses, when it comes to group division, is almost equally distributed. This picture can be supplemented by teachers’ answers to a similar question, although teachers are not asked about the class as a whole, but about the amount of time that students spend working in smaller groups. In addition, they are asked about the amount of time the students work individually. The tables 27 and 28 show the distribution of teachers’ responses.

	Respondents	Percentage
To a great extent	50	28,2%
To a moderate extent	82	46,3%
To a lesser extent	22	12,4%
Not at all	23	13,0%
Total	177	####

Table 27: Teachers' responses to the statement "Pupils spend more time in small groups of children than usual"

	Respondents	Percentage
To a great extent	44	24,9%
To a moderate extent	89	50,3%
To a lesser extent	35	19,8%
Not at all	9	5,1%
Total	177	####

Table 28: Teachers' responses to the statement "The students work more individually than usual"

It is interesting to ask how these changing social contexts affect relationships and class communities. One could say that relationships and communities constitute more essential conditions than the contexts themselves. We gain knowledge of relationships and communities through students' responses to two statements about their relationship to teachers and friends after reopening. They use a three-point scale ranging from 'Worse than before corona virus', 'The same as before' and 'Better than before corona virus'.

Relationship to teachers and friends after the reopening:

Relationship with friends	Frequency	Percentage
Worse than before coronavirus	156	12.71%
The same as before	804	65.53%
Better than before coronavirus	267	21.76%
Total:	1227	

Relationship with teacher	Frequency	Percentage
Worse than before coronavirus	121	9.86%
The same as before	937	76.37%
Better than before coronavirus	169	13.77%
Total:	1227	

Table 29 and 30: Children's responses to the question "How has your relationship with your friends and teachers been after the school reopening? - The contact with my friends/at school is ..."

The community in my class is...	Frequency	Percentage
Worse than before coronavirus	121	9.9%
The same as before	792	64.5%

Table 31: Children's responses to the question "How has your relationship with your friends and teachers been after the school reopening? – The community in my class is..."

Teachers have also been asked to assess the influence of the new contexts on relationships and class communities. The teachers consider six statements thematizing different kinds of relationships and communities in school. They are asked how the changed contexts after reopening have influenced: "...the class community" (table 29), "...the friendships of the children" (table 30), "...my sense of the class as a whole" (table 31), "...my sense of the individual pupil" (table 32), "...my opportunity to support the individual pupil's academic development" (table 33) and "...my opportunity to support the individual pupil's social development" (table 34):

	Respondents	Percentage
In a very positive way	52	29,9%
In a positive way	83	47,7%
No influence	22	12,6%
In a negative way	14	8,0%
In a very negative way	1	0,6%
I don't know	2	1,1%
Total	174	#####

Table 32: Teachers' responses to the question of how the changed contexts after reopening have influenced "...the class community"

	Respondents	Percentage
In a very positive way	49	28,2%
In a positive way	81	46,6%
No influence	31	17,8%
In a negative way	10	5,7%
In a very negative way	0	0,0%
I don't know	3	1,7%
Total	174	#####

Table 33: Teachers' responses to the question of how the changed contexts after reopening have influenced "...the friendships of the children"

	Respondents	Percentage
In a very positive way	52	29,9%
In a positive way	88	50,6%
No influence	19	10,9%
In a negative way	10	5,7%
In a very negative way	2	1,1%
I don't know	3	1,7%
Total	174	#####

Table 34: Teachers' responses to the question of how the changed contexts after reopening have influenced "...my sense of the class as a whole"

	Respondents	Percentage
In a very positive way	57	32,8%
In a positive way	79	45,4%
No influence	24	13,8%
In a negative way	14	8,0%
In a very negative way	0	0,0%
I don't know	0	0,0%

Total	174	####
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Table 35: Teachers' responses to the question of how the changed contexts after reopening have influenced "...my sense of the individual pupil"

	Respondents	Percentage
In a very positive way	52	29,9%
In a positive way	72	41,4%
No influence	33	19,0%
In a negative way	10	5,7%
In a very negative way	4	2,3%
I don't know	3	1,7%
Total	174	####

Table 36: Teachers' responses to the question of how the changed contexts after reopening have influenced "...my opportunity to support the individual student's academic development"

	Respondents	Percentage
In a very positive way	55	31,6%
In a positive way	73	42,0%
No influence	25	14,4%
In a negative way	18	10,3%
In a very negative way	2	1,1%
I don't know	1	0,6%
Total	174	####

Table 37: Teachers' responses to the question of how the changed contexts after reopening have influenced "...my opportunity to support the individual student's social development"

Part 3: Learning through play after reopening

Inspired by Parker & Thomsen (2019), we differentiate between six types of activities that are aligned with the ideas of Playful Learning environments: cooperative and collaborative learning, practical/project-based learning, experiential learning, guided discovery learning, inquiry-based learning, and problem-based learning.

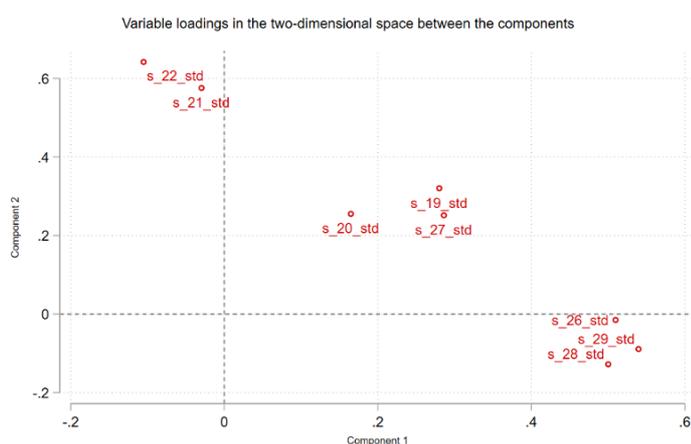
In this part of the data report, we first examine the extent to which the teaching environments can be characterized by aligning with the ideas of active learning, and then we examine the presence of the six types of activities.

Active learning

Active learning occurs when teachers guide learners to formulate understandings and develop new skills through prompting and questioning rather than solely through explicit instruction.

When examining the extent to which the teaching environments can be characterized by aligning with the ideas of active learning, we employ a principal components analysis (PCA) to transform a set of variables measuring pupils' experiences of the use of active and passive learning activities into a substantially smaller set of uncorrelated variables (or principal components) that represents most of the information in the original set of variables (Abdi & Williams, 2010; Dunteman, 1989). We do this to be able to do univariate analyses on the components' distribution in our sample population.

A first plot (figure 3) show which variables differentiate the two principal components.



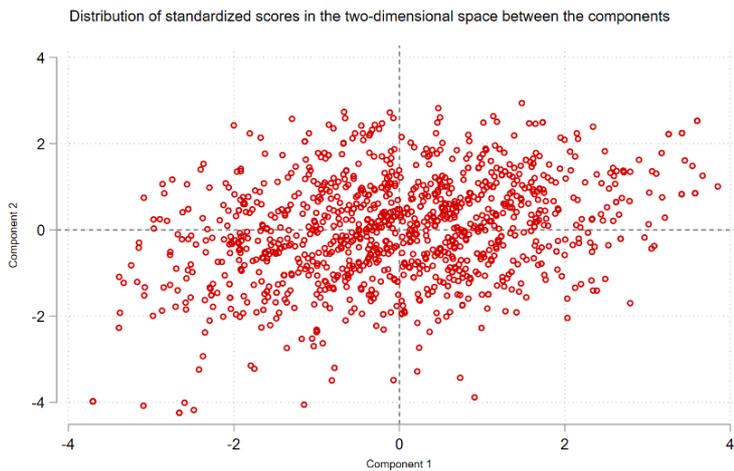
*Loadings are based on a PCA-analysis with orthogonal varimax rotation

Figure 3

It is clear that we have two items (s_22 and s_21) that clearly differentiate component 2 which represents “student perception of passive learning activities as part of teaching practices at school”, and three items s_26, s_28 and s_29 which differentiate component 1 for “students perception of active learning activities as part of teaching practices at school”. Remaining variables have very weak loadings and are thus poorly explained by the generated principal components. Component 1 explains 24.43% of

the variance, while component 2 explains 18.16% of the variance in the standardized original set of variables. Together, these two components explain 42.59% of the variance in the original set of variables, leaving 57.41% of the variance unexplained.

A next plot shows the distribution of standardized scores generated from the PCA in the two-dimensional space between the principal components, representing each individual's standing according to their generalized perception of how much passive and active learning activities are part of teaching practices at school, that can be explained by the principal components:



*Standardized scores are generated from PCA-analysis with orthogonal varimax rotation

Figure 4

This clearly shows four groups of pupils that can be used in further analysis:

The upper left quadrant (ULQ):

- Shows a group of pupils, who have a perception of a **more frequent** use of passive learning activities and a perception of **infrequent** use of active learning activities in teaching practices.

Upper right quadrant (URQ):

- Shows a group of pupils, who have a perception of a **more frequent** use of passive learning activities and a perception of **more frequent** use of active learning activities in teaching practices.

Lower left quadrant (LLQ):

- Shows a group of pupils, who have a perception of an **infrequent** use of passive learning activities and a perception of **infrequent** use of active learning activities in teaching practices.

Lower right quadrant (LRQ):

- Shows a group of pupils, who have a perception of an **infrequent** use of passive learning activities and a perception of **more frequent** use of active learning activities in teaching practices.

An analysis of the summated mean of the original unstandardized set of variables explained by component one and two, divided by these pupils' adherence to one the four groups identified by the standardized scores derived from the principal component analysis, makes it possible to compare the characteristics of these four groups of pupils, regarding how they generally perceive the indicators of the use of passive and active learning activities as part of teaching practices.

Mean of unstandardized original variables	ULQ	URQ	LLQ	LRQ
Explained by component 1	8.49	11.96	7.73	11.50
Explained by component 2	12.74	12.11	9.07	10.00

Table 38: Mean of the unstandardized variables of component one and two divided by group membership

In the remainder of this part of the report, we examine the presence of each of the six types of activities. For each type of activity, we examine it first from a child perspective and then from a teacher perspective.

Cooperative and collaborative learning - child perspective

	Respondents	Percentage
To a great extent	180	15,0%
To a moderate extent	663	55,1%
To a lesser extent	293	24,4%
Not at all	67	5,6%
Total	1203	####

Table 39: Children's responses to the statement "As a class, we work together with support from our teacher"

	Respondents	Percentage
Much more	104	8,7%
Slightly more	322	26,8%
No difference	438	36,4%
Slightly less	148	12,3%
Much less	62	5,2%
I don't know	128	10,6%
Total	1202	####

Table 40: Children's responses to the statement "As a class, we work together with support from our teacher"

	Respondents	Percentage
To a great extent	276	22,9%
To a moderate extent	581	48,3%
To a lesser extent	246	20,4%
Not at all	100	8,3%
Total	1203	####

Table 41: Children's responses to the statement "We work in groups"

	Respondents	Percentage
Much more	153	12,7%
Slightly more	288	24,0%
No difference	344	28,6%
Slightly less	195	16,2%
Much less	125	10,4%
I don't know	97	8,1%
Total	1202	####

Table 42: Children's responses to the statement "We work in groups"

	Respondents	Percentage
To a great extent	268	22,3%
To a moderate extent	502	41,7%
To a lesser extent	288	23,9%
Not at all	145	12,1%
Total	1203	####

Table 43: Children's responses to the statement "We cooperate using computers"

	Respondents	Percentage
Much more	116	9,7%
Slightly more	250	20,8%
No difference	450	37,4%
Slightly less	126	10,5%
Much less	103	8,6%
I don't know	157	13,1%
Total	1202	####

Table 44: Children's responses to the statement "We cooperate using computers"

Cooperative and collaborative learning – teacher perspective

	Respondents	Percentage
To a great extent	28	17,0%
To a moderate extent	83	50,3%
To a lesser extent	42	25,5%
Not at all	12	7,3%
Total	165	####

Table 45: Teachers' responses to the statement "Pupils discuss an academic topic in class or in groups"

	Respondents	Percentage
Much more	3	1,8%
Slightly more	35	21,2%
No difference	91	55,2%
Slightly less	27	16,4%
Much less	8	4,8%
I don't know	1	0,6%
Total	165	####

Table 46: Teachers' responses to the statement "Pupils discuss an academic topic in class or in groups"

	Respondents	Percentage
To a great extent	30	18,2%
To a moderate extent	67	40,6%
To a lesser extent	43	26,1%
Not at all	25	15,2%
Total	165	####

Table 47: Teachers' responses to the statement "Pupils solve academic tasks in groups"

	Respondents	Percentage
Much more	9	5,5%
Slightly more	27	16,4%
No difference	67	40,6%
Slightly less	34	20,6%
Much less	26	15,8%
I don't know	2	1,2%
Total	165	#####

Table 48: Teachers' responses to the statement "Pupils solve academic tasks in groups"

	Respondents	Percentage
To a great extent	24	14,5%
To a moderate extent	64	38,8%
To a lesser extent	40	24,2%
Not at all	37	22,4%
Total	165	#####

Table 49: Teachers' responses to the statement "Pupils collaborate using their computer/tablet"

	Respondents	Percentage
Much more	6	3,6%
Slightly more	40	24,2%
No difference	83	50,3%
Slightly less	17	10,3%
Much less	17	10,3%
I don't know	2	1,2%
Total	165	#####

Table 50: Teachers' responses to the statement "Pupils collaborate using their computer/tablet"

Practical/project-based learning - child perspective

	Respondents	Percentage
To a great extent	55	4,6%
To a moderate extent	233	19,5%
To a lesser extent	386	32,3%
Not at all	520	43,6%
Total	1194	#####

Table 51: Children's responses to the statement "During class, we create different products or things (models, drawings, or anything that can be displayed, or played with)"

	Respondents	Percentage
Much more	56	4,7%

Slightly more	170	14,3%
No difference	416	34,9%
Slightly less	153	12,8%
Much less	171	14,3%
I don't know	226	19,0%
Total	1192	#####

Table 52: Children's responses to the statement "During class, we create different products or things (models, drawings, or anything that can be displayed, or played with)"

	Respondents	Percentage
To a great extent	319	26,7%
To a moderate extent	487	40,8%
To a lesser extent	293	24,5%
Not at all	95	8,0%
Total	1194	#####

Table 53: Children's responses to the statement "We do practical exercises (e.g. experiments, exercises, activities)"

	Respondents	Percentage
Much more	244	20,5%
Slightly more	343	28,8%
No difference	235	19,7%
Slightly less	140	11,7%
Much less	77	6,5%
I don't know	154	12,9%
Total	1193	#####

Table 54: Children's responses to the statement "We do practical exercises (e.g. experiments, exercises, activities)"

	Respondents	Percentage
To a great extent	109	9,1%
To a moderate extent	418	35,0%
To a lesser extent	435	36,4%
Not at all	232	19,4%
Total	1194	#####

Table 55: Children's responses to the statement "We work in projects"

	Respondents	Percentage
Much more	67	5,6%
Slightly more	191	16,0%
No difference	410	34,4%
Slightly less	182	15,3%
Much less	124	10,4%
I don't know	219	18,4%
Total	1193	#####

Table 56: Children's responses to the statement "We work in projects"

Practical/project-based learning - teacher perspective

	Respondents	Percentage
To a great extent	35	21,3%

To a moderate extent	66	40,2%
To a lesser extent	48	29,3%
Not at all	15	9,1%
Total	164	####

Table 57: Teachers' responses to the statement "Pupils create products (e.g. models, drawings, pictures, crafts, videos)"

	Respondents	Percentage
Much more	15	9,1%
Slightly more	33	20,1%
No difference	71	43,3%
Slightly less	28	17,1%
Much less	15	9,1%
I don't know	2	1,2%
Total	164	####

Table 58: Teachers' responses to the statement "Pupils create products (e.g. models, drawings, pictures, crafts, videos)"

	Respondents	Percentage
To a great extent	61	37,2%
To a moderate extent	70	42,7%
To a lesser extent	25	15,2%
Not at all	8	4,9%
Total	164	####

Table 59: Teachers' responses to the statement "Pupils do practical exercises (e.g., experiments, physical exercise, etc.)"

	Respondents	Percentage
Much more	42	25,6%
Slightly more	48	29,3%
No difference	49	29,9%
Slightly less	13	7,9%
Much less	10	6,1%
I don't know	2	1,2%
Total	164	####

Table 60: Teachers' responses to the statement "Pupils do practical exercises (e.g., experiments, physical exercise, etc.)"

	Respondents	Percentage
To a great extent	36	22,0%
To a moderate extent	88	53,7%
To a lesser extent	23	14,0%
Not at all	17	10,4%
Total	164	####

Table 61: Teachers' responses to the statement "Pupils work independently in projects"

	Respondents	Percentage
Much more	13	7,9%
Slightly more	42	25,6%
No difference	85	51,8%
Slightly less	18	11,0%
Much less	4	2,4%

I don't know	2	1,2%
Total	164	####

Table 62: Teachers' responses to the statement "Pupils work independently in projects"

Guided discovery learning - child perspective

	Respondents	Percentage
To a great extent	286	24,0%
To a moderate extent	646	54,2%
To a lesser extent	197	16,5%
Not at all	62	5,2%
Total	1191	####

Table 63: Children's responses to the statement "The teacher uses examples to help us understand what we are learning"

	Respondents	Percentage
Much more	87	7,3%
Slightly more	189	15,9%
No difference	636	53,4%
Slightly less	72	6,1%
Much less	28	2,4%
I don't know	178	15,0%
Total	1190	####

Table 64: Children's responses to the statement "The teacher uses examples to help us understand what we are learning"

	Respondents	Percentage
To a great extent	165	13,9%
To a moderate extent	606	50,9%
To a lesser extent	316	26,5%
Not at all	104	8,7%
Total	1191	####

Table 65: Children's responses to the statement "The teacher shows us how the things we are learning relates to something we have learned in previous lessons"

	Respondents	Percentage
Much more	60	5,0%
Slightly more	168	14,1%
No difference	602	50,6%
Slightly less	91	7,6%
Much less	39	3,3%
I don't know	230	19,3%
Total	1190	####

Table 66: Children's responses to the statement "The teacher shows us how the things we are learning relates to something we have learned in previous lessons"

	Respondents	Percentage
To a great extent	109	9,2%
To a moderate extent	440	36,9%
To a lesser extent	423	35,5%
Not at all	219	18,4%
Total	1191	####

Table 67: Children's responses to the statement "The teacher shows me how the things we are learning can be used in my everyday life"

	Respondents	Percentage
Much more	70	5,9%
Slightly more	127	10,7%
No difference	599	50,3%
Slightly less	88	7,4%
Much less	65	5,5%
I don't know	241	20,3%
Total	1190	####

Table 68: Children's responses to the statement "The teacher shows me how the things we are learning can be used in my everyday life"

Guided discovery learning - teacher perspective

	Respondents	Percentage
To a great extent	45	28,0%
To a moderate extent	78	48,4%
To a lesser extent	24	14,9%
Not at all	14	8,7%
Total	161	####

Table 69: Teachers' responses to the statement "I use examples/cases to help pupils understand what they are learning"

	Respondents	Percentage
Much more	2	1,2%
Slightly more	16	9,9%
No difference	127	78,9%
Slightly less	7	4,3%
Much less	3	1,9%
I don't know	6	3,7%
Total	161	####

Table 70: Teachers' responses to the statement "I use examples/cases to help pupils understand what they are learning"

	Respondents	Percentage
To a great extent	61	37,9%
To a moderate extent	80	49,7%
To a lesser extent	14	8,7%
Not at all	6	3,7%
Total	161	####

Table 71: Teachers' responses to the statement "I show pupils how what they are about to learn is related to something they have learnt in previous lessons"

	Respondents	Percentage
Much more	3	1,9%
Slightly more	16	9,9%
No difference	127	78,9%
Slightly less	6	3,7%
Much less	5	3,1%
I don't know	4	2,5%

Total	161	####
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Table 72: Teachers' responses to the statement "I show pupils how what they are about to learn is related to something they have learnt in previous lessons"

	Respondents	Percentage
To a great extent	54	33,5%
To a moderate extent	91	56,5%
To a lesser extent	12	7,5%
Not at all	4	2,5%
Total	161	####

Table 73: Teachers' responses to the statement "I show pupils how a subject relates to their everyday life"

	Respondents	Percentage
Much more	4	2,5%
Slightly more	17	10,6%
No difference	127	78,9%
Slightly less	5	3,1%
Much less	4	2,5%
I don't know	4	2,5%
Total	161	####

Table 74: Teachers' responses to the statement "I show pupils how a subject relates to their everyday life"

Inquiry-based learning - child perspective

	Respondents	Percentage
To a great extent	139	11,7%
To a moderate extent	583	49,2%
To a lesser extent	347	29,3%
Not at all	117	9,9%
Total	1186	####

Table 75: Children's responses to the statement "The teacher tasks us with researching a topic on our own"

	Respondents	Percentage
Much more	61	5,1%
Slightly more	208	17,6%
No difference	497	41,9%
Slightly less	136	11,5%
Much less	77	6,5%
I don't know	206	17,4%
Total	1185	####

Table 76: Children's responses to the statement "The teacher tasks us with researching a topic on our own"

	Respondents	Percentage
To a great extent	200	16,9%
To a moderate extent	495	41,8%
To a lesser extent	318	26,8%
Not at all	172	14,5%
Total	1185	####

Table 77: Children's responses to the statement "We have to search for information about a topic ourselves (e.g. online or in books, at the library or similar places)"

	Respondents	Percentage
Much more	83	7,0%
Slightly more	192	16,2%
No difference	483	40,8%
Slightly less	118	10,0%
Much less	104	8,8%
I don't know	205	17,3%
Total	1185	#####

Table 78: Children's responses to the statement "We have to search for information about a topic ourselves (e.g. online or in books, at the library or similar places)"

	Respondents	Percentage
To a great extent	184	15,5%
To a moderate extent	583	49,2%
To a lesser extent	317	26,7%
Not at all	102	8,6%
Total	1186	#####

Table 79: Children's responses to the statement "We are presented with a task to which we have to come up with a solution ourselves."

	Respondents	Percentage
Much more	67	5,7%
Slightly more	219	18,5%
No difference	513	43,3%
Slightly less	117	9,9%
Much less	60	5,1%
I don't know	209	17,6%
Total	1185	#####

Table 80: Children's responses to the statement "We are presented with a task to which we have to come up with a solution ourselves."

Inquiry-based learning - teacher perspective

	Respondents	Percentage
To a great extent	30	18,6%
To a moderate extent	77	47,8%
To a lesser extent	38	23,6%
Not at all	16	9,9%
Total	161	#####

Table 81: Teachers' responses to the statement "The pupils work with tasks, where they have to investigate a topic themselves"

	Respondents	Percentage
Much more	10	6,2%
Slightly more	32	19,9%
No difference	94	58,4%
Slightly less	17	10,6%
Much less	6	3,7%
I don't know	2	1,2%
Total	161	#####

Table 82: Teachers' responses to the statement "The pupils work with tasks, where they have to investigate a topic themselves"

	Respondents	Percentage
To a great extent	19	11,8%
To a moderate extent	65	40,4%
To a lesser extent	43	26,7%
Not at all	34	21,1%
Total	161	####

Table 83: Teachers' responses to the statement "Pupils independently search for information on a subject (e.g. online, in books, at the library)"

	Respondents	Percentage
Much more	7	4,3%
Slightly more	24	14,9%
No difference	96	59,6%
Slightly less	17	10,6%
Much less	16	9,9%
I don't know	1	0,6%
Total	161	####

Table 84: Teachers' responses to the statement "Pupils independently search for information on a subject (e.g. online, in books, at the library)"

	Respondents	Percentage
To a great extent	17	10,6%
To a moderate extent	81	50,3%
To a lesser extent	47	29,2%
Not at all	16	9,9%
Total	161	####

Table 85: Teachers' responses to the statement "Pupils are given a task to which they must come up with their own strategy for solving"

	Respondents	Percentage
Much more	9	5,6%
Slightly more	19	11,8%
No difference	110	68,3%
Slightly less	16	9,9%
Much less	6	3,7%
I don't know	1	0,6%
Total	161	####

Table 86: Teachers' responses to the statement "Pupils are given a task to which they must come up with their own strategy for solving"

Problem-based learning - child perspective

	Respondents	Percentage
To a great extent	121	10,3%
To a moderate extent	545	46,2%
To a lesser extent	365	30,9%
Not at all	149	12,6%
Total	1180	####

Table 87: Children's responses to the statement "We are faced with problems we have to solve ourselves using what we have learnt"

	Respondents	Percentage
Much more	45	3,8%
Slightly more	173	14,7%
No difference	555	47,1%
Slightly less	99	8,4%
Much less	56	4,7%
I don't know	251	21,3%
Total	1179	####

Table 88: Children's responses to the statement "We are faced with problems we have to solve ourselves using what we have learnt"

	Respondents	Percentage
To a great extent	95	8,1%
To a moderate extent	446	37,8%
To a lesser extent	422	35,8%
Not at all	217	18,4%
Total	1180	####

Table 89: Children's responses to the statement "The teacher shows us how the things we have learnt can be used outside of school"

	Respondents	Percentage
Much more	54	4,6%
Slightly more	141	12,0%
No difference	576	48,9%
Slightly less	104	8,8%
Much less	61	5,2%
I don't know	243	20,6%
Total	1179	####

Table 90: Children's responses to the statement "The teacher shows us how the things we have learnt can be used outside of school"

	Respondents	Percentage
To a great extent	166	14,1%
To a moderate extent	651	55,2%
To a lesser extent	257	21,8%
Not at all	106	9,0%
Total	1180	####

Table 91: Children's responses to the statement "We work with examples that I understand"

	Respondents	Percentage
Much more	55	4,7%
Slightly more	158	13,4%
No difference	599	50,8%
Slightly less	66	5,6%
Much less	33	2,8%
I don't know	268	22,7%
Total	1179	####

Table 92: Children's responses to the statement "We work with examples that I understand"

Problem-based learning - teacher perspective

	Respondents	Percentage
To a great extent	17	10,7%
To a moderate extent	88	55,3%

To a lesser extent	39	24,5%
Not at all	15	9,4%
Total	159	#####

Table 93: Teachers' responses to the statement "The pupils are faced with a problem that they must solve themselves using academic knowledge"

	Respondents	Percentage
Much more	2	1,3%
Slightly more	21	13,2%
No difference	113	71,1%
Slightly less	14	8,8%
Much less	7	4,4%
I don't know	2	1,3%
Total	159	#####

Table 94: Teachers' responses to the statement "The pupils are faced with a problem that they must solve themselves using academic knowledge"

	Respondents	Percentage
To a great extent	19	11,9%
To a moderate extent	95	59,7%
To a lesser extent	38	23,9%
Not at all	7	4,4%
Total	159	#####

Table 95: Teachers' responses to the statement "I illustrate to pupils how subject knowledge can be useful outside of school"

	Respondents	Percentage
Much more	4	2,5%
Slightly more	15	9,4%
No difference	122	76,7%
Slightly less	12	7,5%
Much less	3	1,9%
I don't know	3	1,9%
Total	159	#####

Table 96: Teachers' responses to the statement "I illustrate to pupils how subject knowledge can be useful outside of school"

	Respondents	Percentage
To a great extent	35	22,0%
To a moderate extent	103	64,8%
To a lesser extent	16	10,1%
Not at all	5	3,1%
Total	159	#####

Table 97: Teachers' responses to the statement "The pupils work from concrete examples"

	Respondents	Percentage
Much more	4	2,5%
Slightly more	18	11,3%
No difference	125	78,6%
Slightly less	7	4,4%

Much less	1	0,6%
I don't know	4	2,5%
Total	159	####

Table 98: Teachers' responses to the statement "The pupils work from concrete examples"

Game-based learning - child perspective

	Respondents	Percentage
To a great extent	249	21,2%
To a moderate extent	510	43,5%
To a lesser extent	293	25,0%
Not at all	120	10,2%
Total	1172	####

Table 99: Children's responses to the statement "We play as part of class"

	Respondents	Percentage
Much more	208	17,8%
Slightly more	309	26,4%
No difference	312	26,6%
Slightly less	106	9,1%
Much less	72	6,1%
I don't know	164	14,0%
Total	1171	####

Table 100: Children's responses to the statement "We play as part of class"

	Respondents	Percentage
To a great extent	119	10,2%
To a moderate extent	348	29,7%
To a lesser extent	370	31,6%
Not at all	335	28,6%
Total	1172	####

Table 101: Children's responses to the statement "We compete in class when solving problems"

	Respondents	Percentage
Much more	87	7,4%
Slightly more	190	16,2%
No difference	480	41,0%
Slightly less	99	8,5%
Much less	83	7,1%
I don't know	232	19,8%
Total	1171	####

Table 102: Children's responses to the statement "We compete in class when solving problems"

	Respondents	Percentage
To a great extent	193	16,5%
To a moderate extent	489	41,7%
To a lesser extent	342	29,2%
Not at all	148	12,6%
Total	1172	####

Table 103: Children's responses to the statement "We use computer programs where we have to get as many correct answers as possible"

	Respondents	Percentage
Much more	91	7,8%
Slightly more	198	16,9%
No difference	474	40,5%
Slightly less	131	11,2%
Much less	61	5,2%
I don't know	216	18,4%
Total	1171	#####

Table 104: Children's responses to the statement "We use computer programs where we have to get as many correct answers as possible"

Game-based learning - teacher perspective

	Respondents	Percentage
To a great extent	56	35,4%
To a moderate extent	64	40,5%
To a lesser extent	29	18,4%
Not at all	9	5,7%
Total	158	#####

Table 105: Teachers' responses to the statement "I use play as part of my teaching"

	Respondents	Percentage
Much more	23	14,6%
Slightly more	52	32,9%
No difference	70	44,3%
Slightly less	5	3,2%
Much less	6	3,8%
I don't know	2	1,3%
Total	158	#####

Table 106: Teachers' responses to the statement "I use play as part of my teaching"

	Respondents	Percentage
To a great extent	17	10,8%
To a moderate extent	64	40,5%
To a lesser extent	49	31,0%
Not at all	28	17,7%
Total	158	#####

Table 107: Teachers' responses to the statement "The class competes when solving tasks"

	Respondents	Percentage
Much more	6	3,8%
Slightly more	36	22,8%
No difference	106	67,1%
Slightly less	5	3,2%
Much less	1	0,6%
I don't know	4	2,5%
Total	158	#####

Table 108: Teachers' responses to the statement "The class competes when solving tasks"

	Respondents	Percentage
To a great extent	10	6,3%
To a moderate extent	53	33,5%
To a lesser extent	46	29,1%
Not at all	49	31,0%
Total	158	####

Table 109: Teachers' responses to the statement "Pupils work with computer programs, where they have to get as many correct answers as possible"

	Respondents	Percentage
Much more	3	1,9%
Slightly more	20	12,7%
No difference	112	70,9%
Slightly less	11	7,0%
Much less	6	3,8%
I don't know	6	3,8%
Total	158	####

Table 110: Teachers' responses to the statement "Pupils work with computer programs, where they have to get as many correct answers as possible"

Part 4: Experiences of playful learning after reopening

In this section, we investigate whether teaching during reopening meets the five characteristics of playful learning mentioned in part two. All five characteristics are not necessary at all times, but over time children should experience moments of joy and surprise, a meaningful connection, be active and absorbed, iterate and engage with others. We thus investigate whether learning as a whole during the reopening has been joyful, meaningful, actively engaging, iterative, and socially interactive. When we talk about a joyful environment, we talk about an environment where learners have positive peer and teacher interactions and positive learning experiences. We use the concept of joy in a broad sense, where it covers pleasure, enjoyment, motivation, thrill, and positive emotions. In addition, it entails an aspect of being confident about one's learning. In other words, joy is seen as both enjoying a task for its own sake and the momentary thrill of surprise, insight, or success after overcoming challenges (Parker & Thomsen 2019).

When we talk about meaningfulness, we refer to the pupil finding meaning in an experience by connecting it to something he/she already knows. A meaningful environment gives a voice to Children's experiences and backgrounds and makes learning culturally relevant to them (ibid.). Ausubel (1968) talks about moving past rote learning to more meaningful understanding. As such, a meaningful environment helps children tap into their existing knowledge and inspires them to make connections, see relationships, and gain a deeper understanding of the complex world around them (Parker & Thomsen 2019).

When we talk about being actively engaged, we mean that learners have choices – big or small – to make about the content or processes involved in their learning (ibid.). It is important to say that in the idea of active engagement, there is no requirement for physical or bodily activity. Hirsh-Pasek, Zosh, et al., (2015) make the distinction that active learning requires children to be “minds on”, whether or not their bodies are active. Children are immersed in the act of self-directed effort and persist in spite of distractions (Parker & Thomsen 2019).

The iterative aspect of the playful learning environment refers to the Children's opportunity to explore and investigate new concepts; to try, and fail, and try again (ibid.). It is crucial that the environment is experienced as a safe space to experiment without risk.

The environment is socially interactive when it affords learners working together in groups (ibid.). Although play and learning can happen on one's own, a powerful catalyst for both learning and play is engaging children in social interaction. Through the processes of sharing thoughts, understanding others through direct interaction, and communicating ideas, children are not only able to enjoy being with others, but also build deeper understandings and more powerful relationships (ibid.).

Before we delve into the five caching characteristics, however, it is relevant first to find out whether the entire situation caused by COVID-19 and the two phases of closure and reopening are actually experienced to have brought about changes. The pupils' answers indicate changes to the environment at school as well as to the way teaching is conducted.

	Respondents	Percentage
Totally agree	292	23,7%
Agree	696	56,5%
Disagree	199	16,2%
Totally disagree	44	3,6%
Total	1231	####

Table 111: Children's responses to the statement "The entire period with coronavirus has changed the environment of the school"

	Respondents	Percentage
Totally agree	489	39,7%
Agree	609	49,5%
Disagree	101	8,2%
Totally disagree	32	2,6%
Total	1231	####

Table 112: Children's responses to the statement "The entire period with coronavirus has changed the teaching in school"

We explore the possibility of creating playful learning environments through questions to teachers. First, they are asked about their ability to support the pupils' professional and social development. We ask them to think about the past 14 days and assess whether teaching has supported pupils' academic and social development:

	Respondents	Percentage
To a great extent	68	43,0%
To a moderate extent	82	51,9%
To a lesser extent	8	5,1%
Not at all	0	0,0%
Total	158	####

Table 113: Teachers' responses to the statement "To which extent has teaching supported my pupils academic development"

	Respondents	Percentage
To a great extent	108	68,4%
To a moderate extent	45	28,5%
To a lesser extent	5	3,2%
Not at all	0	0,0%
Total	158	####

Table 114: Teachers' responses to the statement "To which extent has teaching supported my pupils' social development"

We then ask them to relate to the five characteristics, also here with the intro: "To which degree do you experience that teaching has supported..."

	Respondents	Percentage
To a great extent	56	35,4%
To a moderate extent	79	50,0%
To a lesser extent	22	13,9%
Not at all	1	0,6%
Total	158	####

Table 115: Teachers' responses to the statement "To which extent has teaching supported my pupils' enthusiasm for teaching (they enjoy activities and experience surprises, insight or success)"

	Respondents	Percentage
To a great extent	64	40,5%
To a moderate extent	75	47,5%
To a lesser extent	18	11,4%
Not at all	1	0,6%
Total	158	####

Table 116: Teachers' responses to the statement "To which extent has teaching supported my pupils' social involvement and interaction (exchange of ideas and thoughts and development of common understanding)"

	Respondents	Percentage
To a great extent	39	24,7%
To a moderate extent	75	47,5%
To a lesser extent	39	24,7%
Not at all	5	3,2%
Total	158	####

Table 117: Teachers' responses to the statement "To which extent has teaching supported the opportunity to do experiments together with my pupils"

	Respondents	Percentage
To a great extent	50	31,6%
To a moderate extent	83	52,5%
To a lesser extent	22	13,9%
Not at all	3	1,9%
Total	158	####

Table 118: Teachers' responses to the statement "To which extent has teaching supported the opportunity to make the activities meaningful to the pupils (they relate experiences to something already known)"

	Respondents	Percentage
To a great extent	61	38,6%
To a moderate extent	67	42,4%
To a lesser extent	28	17,7%
Not at all	2	1,3%
Total	158	####

Table 119: Teachers' responses to the statement "To which extent has teaching supported the opportunity to keep pupils in flow, focusing on and committing to activities"

Concluding this section, we ask teachers to respond to statements that assess whether teaching has favoured either academically weak or strong pupils.

	Respondents	Percentage
To a great extent	68	43,0%
To a moderate extent	74	46,8%
To a lesser extent	15	9,5%
Not at all	1	0,6%
Total	158	####

Table 120: Teachers' responses to the statement "To which extent has teaching supported academically weak students"

	Respondents	Percentage
To a great extent	63	39,9%
To a moderate extent	79	50,0%
To a lesser extent	15	9,5%

Not at all	1	0,6%
Total	158	####

Table 121: Teachers' responses to the statement "To which extent has teaching supported academically strong students"

Part 5: The socio-emotional experiences of children

This part of the report deals with students' socio-emotional experiences during school reopening. The project understands social emotional experiences as related to a) on the one hand wellbeing or mental health covering both such aspects as fear related to illness, stress from the closure and reopening, and feelings of energy, courage, vigor and joy of being together with others (Wistoft & Qvortrup 2017), and b) on the other hand the pupils' mindsets and attitudes (in the form of joy, meaning, engagement) towards their learning environments (i.e. what is 'playful learning'), perceived coping and self-efficacy (related to having agency, a voice etc.) and perceived coping (i.e. the experience of being able to handle and master specific situations or activities) (Qvortrup et al 2020). In this regard, we think of play as a (pedagogical) factor in developing children's ability to cope with the situation and, in turn, as an indicator of their well-being that we wish to pursue empirically as well.

In the end, we also address teachers' experience of the situation and the way the situation is experienced or feared to affect their physical and mental health and work situation.

Initially, to understand the pupils' socio-emotional experiences, we asked the students whether they feel that the entire period with the coronavirus has made them less happy with going to school. As table 119 shows, the largest proportion of pupils (70,5%) either disagree or totally disagree with this, but there is also a third (29,5%) indicating that they agree or strongly agree.

	Respondents	Percentage
Totally agree	92	7,5%
Agree	270	22,0%
Disagree	512	41,6%
Totally disagree	356	28,9%
Total	1230	####

Table 122: Children's responses to the statement "The whole period of Corona has made me less happy to go to school"

In addition, before the specific focus on mental health, self-efficacy and perceived coping, we asked about their experience of what has taken place in the teaching during the period. We do this by asking pupils to respond to five statements: "What we do in school is boring" (table 120), "What we do in school makes me want to learn more" (table 121), "What we do in school helps me come up with new ideas" (table 122), "What we do in school makes sense to me" (table 123), "What we do in school does not interest me" (table 124). It is important to say that the pupils' responses to these questions are time-specific, and since we do not have data on students' similar experiences before COVID-19, it is not possible to say whether COVID-19 teaching has made a difference in relation to the pupils' experiences of teaching

	Respondents	Percentage
All the time or almost all the time	151	12,9%
Some of the time	433	37,0%
A bit of the time	447	38,2%
Never or almost never	139	11,9%
Total	1170	####

Table 123: Children's responses to the statement "What we do in school is boring"

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	Respondents	Percentage
All the time or almost all the time	126	10,8%
Some of the time	450	38,5%
A bit of the time	385	32,9%
Never or almost never	209	17,9%
Total	1170	####

Table 124: Children's responses to the statement "What we do in school makes me want to learn more"

	Respondents	Percentage
All the time or almost all the time	106	9,1%
Some of the time	388	33,2%
A bit of the time	380	32,5%
Never or almost never	296	25,3%
Total	1170	####

Table 125: Children's responses to the statement "What we do in school helps me come up with new ideas"

	Respondents	Percentage
All the time or almost all the time	299	25,6%
Some of the time	590	50,4%
A bit of the time	215	18,4%
Never or almost never	66	5,6%
Total	1170	####

Table 126: Children's responses to the statement "What we do in school makes sense to me"

	Respondents	Percentage
All the time or almost all the time	128	10,9%
Some of the time	380	32,5%
A bit of the time	436	37,3%
Never or almost never	226	19,3%
Total	1170	####

Table 127: Children's responses to the statement "What we do in school does not interest me"

The following questions are about the well-being of the pupils. Here we ask, on the one hand, to their mental well-being and, on the other, to their social well-being. The pupils' mental well-being is represented in their responses to five statements concerning the past 14 days: "How often did you feel happy?" (table 125), "How often did you feel satisfied?" (table 126), "How often did you feel scared?" (table 127), "How often did you feel sad?" (table 128) and "How often did you feel in a good mood?" (table 129):

	Respondents	Percentage
All the time or almost all the time	642	54,8%
Some of the time	437	37,3%
A bit of the time	70	6,0%
Never or almost never	23	2,0%
Total	1172	####

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Table 128: Children’s responses to the statement “How often did you feel happy?”

	Respondent s	Percentage
All the time or almost all the time	333	28,4%
Some of the time	582	49,7%
A bit of the time	207	17,7%
Never or almost never	50	4,3%
Total	1172	####

Table 129: Children’s responses to the statement “How often did you feel satisfied?”

	Respondents	Percentage
All the time or almost all the time	49	4,2%
Some of the time	136	11,6%
A bit of the time	252	21,5%
Never or almost never	735	62,7%
Total	1172	####

Table 130: Children’s responses to the statement “How often did you feel sorry?”

	Respondent s	Percentag e
All the time or almost all the time	37	3,2%
Some of the time	92	7,8%
A bit of the time	192	16,4%
Never or almost never	851	72,6%
Total	1172	####

Table 131: Children’s responses to the statement “How often did you feel scared?”

	Respondents	Percentage
All the time or almost all the time	47	4,0%
Some of the time	159	13,6%
A bit of the time	317	27,0%
Never or almost never	649	55,4%
Total	1172	####

Table 132: Children’s responses to the statement “How often did you feel sad?”

	Respondent s	Percentag e
All the time or almost all the time	596	50,9%
Some of the time	463	39,5%
A bit of the time	91	7,8%
Never or almost never	22	1,9%
Total	1172	####

Table 133: Children’s responses to the statement “How often did you feel in a good mood?”

The pupils’ social well-being is elucidated through their responses to six statements, concerning the past 14 days: “How often did you feel understood?” (table 130), “How often did you feel like you were fitting in?” (table 131), “How often did you feel like you were being heard?” (table 132), “How often did you feel held out?” (table 133), “How often did you feel misunderstood?” (table 134), and “How often did you feel very alone?” (table 135):

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	Respondents	Percentage
All the time or almost all the time	375	32,1%
Some of the time	558	47,8%
A bit of the time	184	15,8%
Never or almost never	50	4,3%
Total	1167	####

Table 134: Children’s responses to the statement “How often did you feel understood?”

	Respondents	Percentage
All the time or almost all the time	580	49,7%
Some of the time	409	35,0%
A bit of the time	121	10,4%
Never or almost never	57	4,9%
Total	1167	####

Table 135: Children’s responses to the statement “How often did you feel like you were fitting in?”

	Respondents	Percentage
All the time or almost all the time	542	46,4%
Some of the time	367	31,4%
A bit of the time	150	12,9%
Never or almost never	108	9,3%
Total	1167	####

Table 136: Children’s responses to the statement “How often did you feel fair treated?”

	Respondents	Percentage
All the time or almost all the time	378	32,4%
Some of the time	557	47,7%
A bit of the time	175	15,0%
Never or almost never	57	4,9%
Total	1167	####

Table 137: Children’s responses to the statement “How often did you feel like you were being heard?”

	Respondents	Percentage
All the time or almost all the time	53	4,5%
Some of the time	114	9,8%
A bit of the time	210	18,0%
Never or almost never	790	67,7%
Total	1167	####

Table 138: Children’s responses to the statement “How often did you feel held out?”

	Respondents	Percentage
All the time or almost all the time	72	6,2%
Some of the time	275	23,6%
A bit of the time	403	34,5%
Never or almost never	417	35,7%
Total	1167	####

Table 139: Children’s responses to the statement “How often did you feel misunderstood?”

	Respondents	Percentage
All the time or almost all the time	66	5,7%
Some of the time	137	11,7%
A bit of the time	222	19,0%
Never or almost never	742	63,6%
Total	1167	####

Table 140: Children's responses to the statement "How often did you feel very alone?"

The pupils' self-efficacy is elucidated through their responses to five statements, concerning their views on themselves: "I am doing well in school" (table 136), "If I spend enough time on my schoolwork, I'm doing well" (table 137), "I understand most of what we learn in school" (table 138), "I am quick to learn new things in class" (table 139) and "I am often afraid that I am not good enough to solve a task" (table 140):

	Respondents	Percentage
Totally agree	374	32,2%
Agree	639	55,0%
Disagree	121	10,4%
Totally disagree	28	2,4%
Total	1162	####

Table 141: Children's responses to the statement "I am doing well in school"

	Respondents	Percentage
Totally agree	432	37,2%
Agree	599	51,5%
Disagree	102	8,8%
Totally disagree	29	2,5%
Total	1162	####

Table 142: Children's responses to the statement "If I spend enough time on my schoolwork, I'm doing well"

	Respondents	Percentage
Totally agree	352	30,3%
Agree	672	57,8%
Disagree	110	9,5%
Totally disagree	28	2,4%
Total	1162	####

Table 143: Children's responses to the statement "I understand most of what we learn in school"

	Respondents	Percentage
Totally agree	238	20,5%
Agree	628	54,0%
Disagree	243	20,9%
Totally disagree	53	4,6%
Total	1162	####

Table 144: Children's responses to the statement "I am quick to learn new things in class"

	Respondents	Percentage
Totally agree	138	11,9%
Agree	358	30,8%
Disagree	401	34,5%
Totally disagree	265	22,8%
Total	1162	####

Table 145: Children's responses to the statement "I am often afraid that I am not good enough to solve a task"

The pupils' perceived coping is elucidated through the pupils' responses to five statements, concerning their views on themselves: "I have handled all situations, one way or another" (table 141), "I have done well in class" (table 142), "It has been easy to keep up with classes" (table 143), "The teaching methods have suited me well" (table 144) and "It has been more difficult for me to participate in class than usual" (table 145):

	Respondents	Percentage
Totally agree	237	20,4%
Agree	712	61,3%
Disagree	175	15,1%
Totally disagree	38	3,3%
Total	1162	####

Table 146: Children's responses to the statement "I have handled all situations, one way or another"

	Respondents	Percentage
Totally agree	311	26,8%
Agree	692	59,6%
Disagree	126	10,8%
Totally disagree	33	2,8%
Total	1162	####

Table 147: Children's responses to the statement "I have done well in class"

	Respondents	Percentage
Totally agree	292	25,1%
Agree	620	53,4%
Disagree	216	18,6%
Totally disagree	34	2,9%
Total	1162	####

Table 148: Children's responses to the statement "It has been easy to keep up with classes"

	Respondents	Percentage
Totally agree	254	21,9%
Agree	661	56,9%
Disagree	201	17,3%
Totally disagree	46	4,0%
Total	1162	####

Table 149: Children's responses to the statement "The teaching methods have suited me well"

	Respondents	Percentage
Totally agree	60	5,2%
Agree	231	19,9%
Disagree	520	44,8%
Totally disagree	351	30,2%
Total	1162	####

Table 150: Children's responses to the statement "It has been more difficult for me to participate in class than usual"

The teachers' experience of the situation and the way it is experienced or feared to affect their physical and mental health and their work situation are elucidated through teachers' responses to five statements:

	Respondents	Percentage
Totally agree	14	8,9%
Agree	54	34,2%
Disagree	60	38,0%
Totally disagree	30	19,0%
Total	158	####

Table 151: Teachers' responses to the statement "I have felt or am feeling nervous or anxious about the COVID-19 outbreaks"

	Respondents	Percentage
Totally agree	15	9,5%
Agree	34	21,5%
Disagree	75	47,5%
Totally disagree	34	21,5%
Total	158	####

Table 152: Teachers' responses to the statement "I'm worried about how the outbreak of COVID-19 affects my physical health"

	Respondents	Percentage
Totally agree	11	7,0%
Agree	32	20,3%
Disagree	73	46,2%
Totally disagree	42	26,6%
Total	158	####

Table 153: Teachers' responses to the statement "I'm worried about how the outbreak of COVID-19 affects my mental health"

	Respondents	Percentage
Totally agree	11	7,0%
Agree	56	35,4%
Disagree	63	39,9%
Totally disagree	28	17,7%
Total	158	####

Table 154: Teachers' responses to the statement "I'm worried about how the outbreak of COVID-19 affects my future"

	Respondents	Percentage
Totally agree	21	13,3%
Agree	49	31,0%
Disagree	66	41,8%
Totally disagree	22	13,9%
Total	158	#####

Table 155: Teachers' responses to the statement "The COVID-19 outbreak has made it difficult to prioritize between my responsibilities"

	Respondents	Percentage
To a great extent	77	48,7%
To a moderate extent	63	39,9%
To a lesser extent	14	8,9%
Not at all	4	2,5%
Total	158	#####

Table 156: Teachers' responses to the statement "To which extent has the situation supported the joy of teaching"

	Respondents	Percentage
To a great extent	51	32,3%
To a moderate extent	56	35,4%
To a lesser extent	39	24,7%
Not at all	12	7,6%
Total	158	#####

Table 157: Teachers' responses to the statement "To which extent has the situation supported collaboration with colleagues"

	Respondents	Percentage
To a great extent	61	38,6%
To a moderate extent	67	42,4%
To a lesser extent	21	13,3%
Not at all	9	5,7%
Total	158	#####

Table 158: Teachers' responses to the statement "To which extent has the situation supported professional pride"

Part 6: Strategies and resources supporting teachers

During the first parts of the report, we have discussed a number of the strategies that have been used in schools during their reopening. In part one we described the strategies employed in regard to hygiene and distance requirements, and in part two we described the use of contexts outside the school, outdoor environments and digital media as well as the strategies for social divisions. Furthermore, in part three, we described the balance in relation to various types of active learning. All of the above are important aspects of what we define as strategies for creating playful learning environments.

In this final section, we address the resources that, according to teachers themselves, have been crucial to their ability to teach during reopening. When we talk about resources supporting teachers, we take a broad look at materials, training, space and time, but also aspects such as emotional support, reduction of academic pressure, and the like.

The teachers are, based on the introductory question "To what extent has your opportunity to do your work been contingent on ...", asked to assess their use of 11 different types of resources. Their assessments of how important each type of resource has been are shown in Tables 154-164.

	Respondents	Percentage
To a great extent	31	19,6%
To a moderate extent	78	49,4%
To a lesser extent	34	21,5%
Not at all	15	9,5%
Total	158	#####

Table 159: Teachers' responses to the statement "To which extent has your ability to do your work depended on faith and extraordinary commitment from the students?"

	Respondents	Percentage
To a great extent	1	0,6%
To a moderate extent	8	5,1%
To a lesser extent	29	18,4%
Not at all	120	75,9%
Total	158	#####

Table 160: Teachers' responses to the statement "To which extent has your ability to do your work depended on courses (online or physical) provided by your school?"

	Respondents	Percentage
To a great extent	55	34,8%
To a moderate extent	49	31,0%
To a lesser extent	29	18,4%
Not at all	25	15,8%
Total	158	#####

Table 161: Teachers' responses to the statement "To which extent has your ability to do your work depended on access to articles, books or online material?"

	Respondents	Percentage
To a great extent	33	20,9%
To a moderate extent	67	42,4%
To a lesser extent	31	19,6%
Not at all	27	17,1%
Total	158	####

Table 162: Teachers' responses to the statement "To which extent has your ability to do your work depended on inspiration from professional groups on social media?"

	Respondents	Percentage
To a great extent	53	33,5%
To a moderate extent	69	43,7%
To a lesser extent	27	17,1%
Not at all	9	5,7%
Total	158	####

Table 163: Teachers' responses to the statement "To which extent has your ability to do your work depended on sparring or collaboration with colleagues at the school?"

	Respondents	Percentage
To a great extent	10	6,3%
To a moderate extent	19	12,0%
To a lesser extent	44	27,8%
Not at all	85	53,8%
Total	158	####

Table 164: Teachers' responses to the statement "To what extent has your opportunity to do your work depended on access to observation of colleagues' courses?"

	Respondents	Percentage
To a great extent	22	13,9%
To a moderate extent	49	31,0%
To a lesser extent	55	34,8%
Not at all	32	20,3%
Total	158	####

Table 165: Teachers' responses to the statement "To what extent has your opportunity to do your work depended on sparring with a school leader?"

	Respondents	Percentage
To a great extent	71	44,9%
To a moderate extent	50	31,6%
To a lesser extent	16	10,1%
Not at all	21	13,3%
Total	158	####

Table 166: Teachers' responses to the statement "To what extent has your opportunity to do your work depended on less academic pressure (due to eg cancellation of meetings, rescheduling of classes, etc.)"

	Respondents	Percentage
To a great extent	39	24,7%
To a moderate extent	44	27,8%
To a lesser extent	33	20,9%
Not at all	42	26,6%
Total	158	####

Table 167: Teachers' responses to the statement "To what extent has your opportunity to do your work depended on teaching resources that I do not normally have access to?"

	Respondents	Percentage
To a great extent	49	31,0%
To a moderate extent	50	31,6%
To a lesser extent	27	17,1%
Not at all	32	20,3%
Total	158	####

Table 168: Teachers' responses to the statement "To what extent has your opportunity to do your work depended on more teacher resources than usual (eg use of temporary staff members)?"

	Respondents	Percentage
To a great extent	46	29,1%
To a moderate extent	51	32,3%
To a lesser extent	23	14,6%
Not at all	38	24,1%
Total	158	####

Table 169: Teachers' responses to the statement "To what extent has your opportunity to do your work depended on more preparation time (eg due to canceled meetings or reallocation of hours)?"

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